# Victoria North HiF Infrastructure & Enabling Works – Phase 3 GI

## Ground Investigation Report – Factual Account





October 2022
BAM Ritchies Project Reference: BAX.326R

## Control sheet

| | |
|---|---|
| Project Name: | Victoria North HiF Infrastructure & Enabling Works – Phase 3 GI |
| Project No: | 326R |
| Client: | BAM Nuttall Ltd |
| Engineer: | ARUP |
| Status: | FINAL |
| Revision No: | 00 |

## Authorisation

| | Name | Signature | Date |
|---|---|---|---|
| Prepared by | A P Bird |  | 31/10/2022 |
| Checked by | J Elson |  | 31/10/2022 |
| Approved for issue by | J Hogg |  | 31/10/2022 |

## Distribution

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## Revision History

| Revision Reference | Revision Description | Date |
|---|---|---|
| 00 | DRAFT | 11/09/2022 |
| 01 | FINAL | 31/10/2022 |
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| Note |
| --- |
| The scope of the investigation was determined by the Engineer for the particular project requirements set out in the Specification for the Contract.<br><br>The investigation was carried out by BAM Ritchies and this report has been prepared for the sole use of the Client. This report shall not be relied upon or transferred to any other parties without the express written authorisation of BAM Ritchies. |

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5 Taurus Park, Europa Boulevard; Gemini Business Park; Warrington; WA5 7ZT. Tel:01925 405178

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## 1.0 Introduction

In February 2022, BAM Ritchies was commissioned by BAM Nuttall on behalf of Manchester City Council (MCC) to carry out the third phase of ground investigation at the Victoria North site, Collyhurst, Manchester.

The investigation site was split into three sub plots (Red Bank Plateau, Red Viaduct & St Catherine's Wood) and included cable percussion boreholes, rotary (follow-on) boreholes, dynamic windowless sampling, machine excavated trial trenches/ pits, hand excavated inspection pits, surface sampling (water & soil), in situ testing and monitoring (from installed standpipes & inclinometers) to provide ground, ground gas and groundwater information to aide with the detailed design for the scheme.

The investigation was commissioned to determine the composition of underlying strata and the nature of the deeper ground conditions where new structures are proposed.

The initial scope of the investigation, which was specified by the ARUP design engineers, comprised the following;

- Fifteen cable percussive boreholes (BH301 to BH315) to be terminated at bedrock (between 5.00m and 17.00m), of which two (BH309 & BH310) were to be extended with rotary coring follow on to recover 6m of core.
- Six dynamic (windowless) sample holes (BH320 – BH326) to a maximum depth of 6.00m.
- Three trial trenches (TT301 to TT303) to be excavated within the former gas works area of St Catherine's Wood.
- Seven trial pits (TP304 to TP310) to excavated to between 3.0 and 4.5m depth.
- Four observation pits (OP01 to OP04) to be excavated along the alignment of the former railway viaduct.
- Three surface water samples taken from three locations of the River Irk (over three rounds).
- Three sediment samples taken from the River Irk.
- In-situ infiltration tests to be conducted within selected boreholes.
- Two inclinometers installed within the former gas works site (BH301 & BH302).
- A series of groundwater and gas monitoring standpipes installed within selected boreholes (as directed by ARUP), for pre and post fieldworks monitoring and

sampling. (The monitoring also included the installations from the phase 1 and 2 ground investigations from 2019 and 2021.

Following changes during the on-going fieldworks the scope of works changed and comprised the following;

- Twenty-one cable percussion boreholes drilled to a maximum depth of 17.32m (BH301 to BH325), of which four boreholes had additional holes drilled to retrieve additional UT samples within the cohesive made ground (BH301A, BH301B, BH304A), two were re-drilled for the re-installation of the 50mm monitoring standpipes following damage to the existing during the demolition of Creamline Dairies (BH311A, BH311B & BH312A). BH311A was relocated upon encountering an obstruction. One borehole was re-located to the crest of the embankment due to access restrictions (BH324).
- Two Rotary cored boreholes drilled to a maximum depth of 16.00m (BH309 & BH310) using continuous GeoBore techniques.
- Nine dynamic (windowless) sample holes drilled to a maximum depth of 8.00m. Of which, two were additional to de-lineate the contamination around BH301 (BH301B & BH301C). two were drilled to de-lineate the clay pocket around BH304.
- Three machine excavated trial trenches excavated to a maximum depth of 3.50m (TT301 to TT303) within the former gas works site area.
- Seven machine excavated trial pits excavated to a maximum depth of 3.00m (TP304 to TP310) (all terminated due to instability of the stratum encountered).
- Four machine excavated observation pits excavated to a maximum depth of 0.40m (OP01 to OP04), upon exposing the former viaduct wall.
- Four surface water samples taken from three locations of the River Irk sampled from Packaging Products Bridge (SWS01), St. Catherine's Bridge (SWS02) and Union Bridge (SWS03). The fourth round was requested later during the fieldworks.
- Twelve dynamic cone penetration tests (TRL) terminated at refusal at 4.30m (TT301 – TP310). Two tests were carried out at the locations of BH323 & BH324 due to limited access for the proposed drilling rig.
- Seven In-situ infiltration tests (Falling head method) were carried out in selected boreholes by ARUP during the drilling works. (BH310, BH312, BH320 – BH323 & BH325).
- Two Inclinometers installed within the former gas works site (BH301 & BH302).

- A series of groundwater and gas monitoring standpipes installed within selected boreholes (as directed by ARUP), for pre and post fieldworks monitoring and sampling.
- A series of surface water and soil stockpile samples from varied locations across the site for chemical contamination testing.
- Nine structural cores drilling horizontally and inclined into the Honey Street retaining wall to a maximum depth of 2.80m.
- UXO clearance of all exploratory locations prior to and during the works.

- The investigation was carried out in a1ccordance with BS5930:2015[1], referenced standards and the contract specification.

  The objectives of the investigation included the following:

  - To provide design services for the HiF Infrastructure works for the site (including demolition, tree clearance, removal of relic hardstanding, targeted remediation, the provision of access, provision of key utilities and landscaping in areas of proposed open space. The subsequent development of the site areas will include residential housing, school and public open spaces

  This report presents the factual records of the fieldworks, post fieldworks monitoring and laboratory testing. The report has been prepared in accordance with BS5930:2015 and the requirements of the Client. The data is also presented separately in digital format following AGS:2011[2].

1 BS 5930 Code of practice for ground investigations, BSI1 AGS:2011 Electronic Transfer of Geotechnical Data AGS 4, Association of Geotechnical Specialists

# 2.0 The site and geology

## 2.1 Site description

The site is centred on National Grid Reference (NGR) SJ846996 and lies in the Lower Irk Valley, Collyhurst, Manchester. The site is bound to the northwest and west by Red Bank (public road) and the steep embankment slope with varied commercial properties beyond, the northeast by a historical pedestrian railway bridge, to the east and south by the River Irk. The site is split into 3nr sub sites.

- Red Bank Plateau (extends from NGR SJ843994 in the south to NGR SJ848998 in the north); Formerly occupied by extensive railway sidings and associated infrastructure, now occupied by dense vegetation a hardstanding. A former gas works was noted in the northeastern corner.
- Red Bank Viaduct (centred around NGR SJ844994); predominantly hardstanding occupied by multiple car parking businesses, taxi service, joinery warehouse, dry cleaners and food warehouse.
- St Catherine's Wood (extends from NGR SJ844994 in the south to NGR SJ849997 in the north); predominantly covered with dense woodland with limited access paths which runs the banks of the River Irk. Steep slopes (between 1v to 1.6h) descend from the Red Bank Plateau towards the River Irk through the dense woodland.

Figure 1 shows the location of the site within the region.

## 2.2 Geology

Information from the BGS indicates the site to be directly underlain by Made Ground of varied depths comprising granular general / embankment fill (sandy gravel with low cobble content). Gravel comprises concrete, brick, macadam, sandstone, ceramic, glass, clinker, glass, plastic and rubber. Sand is predominantly of ash. Deeper deposits of made ground are more cohesive, comprising slightly gravelly sandy clay or gravelly sand with low cobble content.

Superficial deposits are indicated as follows;

- Glacial till (comprising soft to firm sandy very gravelly clay and/ or localised medium dense brown gravelly slightly clayey sand.
- Alluvium (comprising clay, silt, sand and gravel).

Bedrock is indicated to be sandstone of the Collyhurst sandstone Group to the north and east mudstone of Manchester Marls traversing northwest to southeast through the site and sandstone of the Chester Pebble Beds group to the south and west.

## 3.0 Fieldwork

### 3.1 General

The scope of the ground investigation was determined by ARUP. The fieldwork was carried out between 15 February and 06 April 2022, with return visits between 16 and 18 May and 05 and 07 July 2022, for additional works.

### 3.2 Exploratory holes

The exploratory hole locations were set out by a BAM Nuttall Engineer. The positions are shown on the exploratory hole plans, which comprise Figures 2 to 5.

The exploratory holes are summarised in Table 1 which includes a summary of the sampling and in situ testing carried out.

The exploratory hole logs and photographs are presented in Appendix 1.

All recovered samples (including additional site requested samples) were transported to BAM Ritchies stores in Warrington for temporary retention and laboratory testing as appropriate.

### 3.3 In - situ testing

The in - situ testing undertaken are displayed on the exploratory hole logs in Appendix 1.

The results of the Soil Infiltration (falling head) tests and the TRL dynamic cone penetration tests are also presented in Appendix 1

Calibration certificates for equipment used are displayed in Appendix 5.

### 3.4 Installations, monitoring and sampling

The instrumentation instructed by ARUP is detailed in Table 1 as well as being shown on the relevant exploratory hole logs in Appendix 1.

Monitoring (gas and groundwater) was scheduled for six visits and groundwater sampling was scheduled for two visits on the selected instruments (50mm standpipes) by BAM Ritchies on the instruction of ARUP. Records are presented in Appendix 2.

Monitoring of the inclinometers was scheduled for 12 months (baseline, monthly for 3 months then quarterly thereafter). The results are displayed in appendix 2 (for the baseline and 3 monthly only). The quarterly readings had not been taken at the time of writing this report. The quarterly readings will be taken and issued as an addendum separately until completion in early 2023. Records to date are presented in Appendix 2.

## 4.0 Laboratory testing

### 4.1 Geoenvironmental testing

A programme of laboratory based geoenvironmental testing scheduled by the ARUP was carried out on selected samples.

The results, references and methods for each test are detailed on the appropriate result sheets in Appendix 3.

### 4.2 Geotechnical testing

A programme of laboratory based geotechnical testing scheduled by the ARUP was carried out on selected samples.

The results, references and methods for each test are detailed on the appropriate result sheets in Appendix 4.

**Tables**

1 Fieldwork summaries

# TABLE 1 - FIELDWORK SUMMARY

Project Name: Victoria North HIF Infrastructure & Enabling
Client: BAM Nuttall

Project No: 326R
Engineer: ARUP

| DEPTH RELATED EXPLORATORY HOLE INFORMATION | | | | | | | INSTALLATION DETAILS | | | | | BACKFILL DETAILS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hole No | Type | From m | To m | Date | | Plant | Hole No | Type | Depth to Base m | Response Zone | | Hole No | From m | To m | Description |
| | | | | Start | End | | | | | From m | To m | | | | |
| BH301 | IP | 0.00 | 1.20 | 24/02/2022 | 24/02/2022 | Insulated hand tools | 01_BH101 | SP | 5.00 | 1.00 | 5.00 | BH301 | 0.00 | 15.00 | Grout |
| BH301 | CP | 1.20 | 15.08 | 24/02/2022 | 25/02/2022 | T820-068 | 01_BH102 | SP | 6.50 | 1.90 | 6.70 | BH301A | 0.00 | 0.50 | Arisings |
| BH301A | IP | 0.00 | 1.20 | 30/03/2022 | 30/03/2022 | Insulated hand tools | 01_BH103 | SP | 3.50 | 1.00 | 3.50 | BH301A | 0.50 | 5.50 | Bentonite |
| BH301A | CP | 1.20 | 6.00 | 30/03/2022 | 30/03/2022 | T820-068 | 01_BH104 | SP | 9.00 | 1.80 | 9.20 | BH301B | 0.00 | 0.50 | Arisings |
| BH301B | IP | 0.00 | 1.20 | 30/03/2022 | 30/03/2022 | Insulated hand tools | 01_BH105 | SP | 9.50 | 3.00 | 9.50 | BH301B | 0.50 | 14.00 | Bentonite |
| BH301B | CP | 1.20 | 14.00 | 30/03/2022 | 30/03/2022 | T820-068 | 01_BH106 | SP | 10.00 | 2.00 | 10.00 | BH301C | 0.00 | 0.50 | Arisings |
| BH301C | IP | 0.00 | 1.20 | 31/03/2022 | 31/03/2022 | Insulated hand tools | 01_BH112 | SP | 4.00 | 0.50 | 4.00 | BH301C | 0.50 | 4.00 | Bentonite |
| BH301C | WLS | 1.20 | 4.00 | 31/03/2022 | 31/03/2022 | T830-627 | BH301 | ICM | 15.00 | 0.50 | 15.00 | BH301D | 0.00 | 0.50 | Arisings |
| BH301D | IP | 0.00 | 1.20 | 31/03/2022 | 31/03/2022 | Insulated hand tools | BH302 | ICM | 14.00 | 0.50 | 14.00 | BH301D | 0.50 | 3.00 | Bentonite |
| BH301D | WLS | 1.20 | 3.00 | 31/03/2022 | 31/03/2022 | T820-627 | BH303 | SP | 11.00 | 8.50 | 11.00 | BH302 | 0.00 | 0.50 | Flush cover |
| BH302 | IP | 0.00 | 1.20 | 18/02/2022 | 18/02/2022 | Insulated hand tools | BH304 | SP | 10.00 | 5.00 | 10.00 | BH302 | 0.50 | 14.08 | Grout |
| BH302 | CP | 1.20 | 15.00 | 21/02/2022 | 25/02/2022 | T820-068 | BH305 | SP | 10.00 | 1.00 | 10.00 | BH303 | 0.00 | 0.50 | Flush cover |
| BH303 | IP | 0.00 | 1.20 | 14/02/2022 | 14/02/2022 | Insulated hand tools | BH306 | SP | 5.60 | 3.90 | 5.60 | BH303 | 0.50 | 8.50 | Bentonite |
| BH303 | CP | 1.20 | 12.55 | 16/02/2022 | 16/02/2022 | T820-068 | BH307 | SP | 2.50 | 0.50 | 2.50 | BH303 | 8.50 | 11.00 | Gravel Backfill |
| BH304 | IP | 0.00 | 1.20 | 16/02/2022 | 16/02/2022 | Insulated hand tools | BH309 | SP | 11.50 | 7.00 | 11.50 | BH303 | 11.00 | 12.55 | Bentonite |

For Abbreviations see Key to Exploratory Hole Records

# TABLE 1 - FIELDWORK SUMMARY

Project Name: Victoria North HIF Infrastructure & Enabling
Client: BAM Nuttall

Project No: 326R
Engineer: ARUP

| DEPTH RELATED EXPLORATORY HOLE INFORMATION | | | | | | | INSTALLATION DETAILS | | | | | BACKFILL DETAILS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hole No | Type | From m | To m | Date | | Plant | Hole No | Type | Depth to Base m | Response Zone | | Hole No | From m | To m | Description |
| | | | | Start | End | | | | | From m | To m | | | | |
| BH304 | CP | 1.20 | 16.45 | 16/02/2022 | 18/02/2022 | T820-068 | BH310 | SP | 16.00 | 8.00 | 16.00 | BH304 | 0.00 | 0.50 | Flush cover |
| BH304A | IP | 0.00 | 1.20 | 17/03/2022 | 17/03/2022 | Insulated hand tools | BH311 | SP | 16.00 | 9.00 | 16.00 | BH304 | 0.50 | 5.00 | Bentonite |
| BH304A | CP | 1.20 | 8.50 | 17/03/2022 | 17/03/2022 | T820-068 | BH311B | SP | 16.00 | 9.00 | 16.00 | BH304 | 5.00 | 10.00 | Gravel Backfill |
| BH305 | IP | 0.00 | 1.20 | 28/02/2022 | 28/02/2022 | Insulated hand tools | BH312 | SP | 4.00 | 0.50 | 4.00 | BH304 | 10.00 | 16.45 | Bentonite |
| BH305 | CP | 1.20 | 12.03 | 28/02/2022 | 01/03/2022 | T820-068 | BH312A | SP | 4.00 | 0.50 | 4.00 | BH304A | 0.00 | 0.50 | Arisings |
| BH306 | IP | 0.00 | 1.20 | 15/03/2022 | 15/03/2022 | Insulated hand tools | BH313 | SP | 8.00 | 3.00 | 8.00 | BH304A | 0.50 | 8.50 | Bentonite |
| BH306 | CP | 1.20 | 6.30 | 15/03/2022 | 15/03/2022 | T820-068 | BH314 | SP | 12.00 | 9.50 | 12.00 | BH305 | 0.00 | 0.50 | Flush cover |
| BH307 | IP | 0.00 | 1.20 | 14/03/2022 | 14/03/2022 | Insulated hand tools | BH315 | SP | 12.50 | 9.00 | 12.50 | BH305 | 0.50 | 1.00 | Bentonite |
| BH307 | CP | 1.20 | 5.00 | 14/03/2022 | 15/03/2022 | T820-068 | BH320 | SP | 4.20 | 3.50 | 4.20 | BH305 | 1.00 | 10.00 | Gravel Backfill |
| BH308 | IP | 0.00 | 1.20 | 14/03/2022 | 14/03/2022 | Insulated hand tools | BH321 | SP | 4.50 | 0.50 | 4.50 | BH305 | 10.00 | 12.03 | Bentonite |
| BH308 | CP | 1.20 | 7.40 | 14/03/2022 | 14/03/2022 | T820-068 | BH322 | SP | 5.80 | 5.40 | 5.80 | BH306 | 0.00 | 0.50 | Flush cover |
| BH309 | IP | 0.00 | 1.20 | 29/03/2022 | 29/03/2022 | Insulated hand tools | BH323 | SP | 1.70 | 0.50 | 1.70 | BH306 | 0.50 | 3.90 | Bentonite |
| BH309 | RC | 1.20 | 11.50 | 29/03/2022 | 30/03/2022 | 1121 | BH324 | SP | 14.80 | 13.10 | 14.80 | BH306 | 3.90 | 5.60 | Gravel Backfill |
| BH310 | IP | 0.00 | 1.20 | 22/03/2022 | 22/03/2022 | Insulated hand tools | BH325 | SP | 3.50 | 0.50 | 3.50 | BH306 | 5.60 | 6.30 | Bentonite |
| BH310 | RC | 1.20 | 16.00 | 22/03/2022 | 23/03/2022 | 1121 | GEO_BH201 | SP | 8.00 | 3.00 | 8.00 | BH307 | 0.00 | 0.20 | Flush cover |

For Abbreviations see Key to Exploratory Hole Records

# TABLE 1 - FIELDWORK SUMMARY

Project Name: Victoria North HIF Infrastructure & Enabling
Client: BAM Nuttall
Project No: 326R
Engineer: ARUP

| DEPTH RELATED EXPLORATORY HOLE INFORMATION | | | | | | | INSTALLATION DETAILS | | | | | BACKFILL DETAILS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hole No | Type | From m | To m | Date | | Plant | Hole No | Type | Depth to Base m | Response Zone | | Hole No | From m | To m | Description |
| | | | | Start | End | | | | | From m | To m | | | | |
| BH311 | IP | 0.00 | 1.20 | 08/03/2022 | 08/03/2022 | Insulated hand tools | GEO_BH202 | SP | 9.00 | 4.00 | 9.00 | BH307 | 0.20 | 0.50 | Bentonite |
| BH311 | CP | 1.20 | 17.32 | 08/03/2022 | 09/03/2022 | T820-068 | GEO_BH203 | SP | 24.00 | 18.00 | 24.00 | BH307 | 0.50 | 2.50 | Gravel Backfill |
| BH311A | IP | 0.00 | 1.20 | 05/07/2022 | 05/07/2022 | Insulated hand tools | GEO_BH204 | SP | 10.00 | 1.50 | 10.00 | BH307 | 2.50 | 5.00 | Bentonite |
| BH311A | CP | 1.20 | 6.00 | 05/07/2022 | 05/07/2022 | T820-068 | GEO_BH205 | SP | 10.50 | 4.80 | 10.80 | BH309 | 0.00 | 0.50 | Flush cover |
| BH311B | IP | 0.00 | 1.20 | 06/07/2022 | 06/07/2022 | Insulated hand tools | GEO_BH206 | SP | 6.00 | 2.00 | 6.00 | BH309 | 0.50 | 7.00 | Bentonite |
| BH311B | CP | 1.20 | 16.00 | 06/07/2022 | 06/07/2022 | T820-068 | GEO_BH207 | SP | 15.50 | 1.50 | 15.50 | BH309 | 7.00 | 11.50 | Gravel Backfill |
| BH312 | IP | 0.00 | 1.20 | 10/03/2022 | 10/03/2022 | Insulated hand tools | GEO_BH208 | SP | 13.00 | 3.00 | 13.00 | BH310 | 0.00 | 0.50 | Flush cover |
| BH312 | CP | 1.20 | 16.82 | 10/03/2022 | 11/03/2022 | T820-068 | GEO_BH209 | SP | 17.00 | 11.00 | 17.00 | BH310 | 0.50 | 8.00 | Bentonite |
| BH312A | IP | 0.00 | 1.20 | 07/07/2022 | 07/07/2022 | Insulated hand tools | GEO_BH210 | SP | 19.60 | 14.00 | 19.60 | BH310 | 8.00 | 16.00 | Gravel Backfill |
| BH312A | CP | 1.20 | 5.00 | 07/07/2022 | 07/07/2022 | T820-627 | GEO_BH211A | SP | 11.60 | 5.00 | 10.50 | BH311 | 0.00 | 0.50 | Flush cover |
| BH313 | IP | 0.00 | 1.20 | 22/02/2022 | 22/02/2022 | Insulated hand tools | GEO_BH212 | SP | 9.00 | 5.50 | 9.00 | BH311 | 0.50 | 9.00 | Bentonite |
| BH313 | CP | 1.20 | 12.22 | 22/02/2022 | 24/02/2022 | T820-068 | GEO_BH213 | SP | 3.10 | 1.50 | 3.10 | BH311 | 9.00 | 16.00 | Gravel Backfill |
| BH314 | IP | 0.00 | 1.20 | 01/03/2022 | 01/03/2022 | Insulated hand tools | GEO_BH214A | SP | 4.00 | 3.00 | 4.00 | BH311 | 16.00 | 17.32 | Bentonite |
| BH314 | CP | 1.20 | 12.45 | 01/03/2022 | 03/03/2022 | T820-068 | GEO_WS201B | SP | 1.30 | 0.50 | 1.30 | BH311A | 0.00 | 0.50 | Arisings |
| BH315 | IP | 0.00 | 1.20 | 03/03/2022 | 03/03/2022 | Insulated hand tools | GEO_WS207 | SP | 4.90 | 0.90 | 4.90 | BH311A | 0.50 | 6.00 | Gravel Backfill |

For Abbreviations see Key to Exploratory Hole Records

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Project Name: Victoria North HIF Infrastructure & Enabling
Client: BAM Nuttall

Project No: 326R
Engineer: ARUP

| DEPTH RELATED EXPLORATORY HOLE INFORMATION | | | | | | | INSTALLATION DETAILS | | | | | BACKFILL DETAILS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hole No | Type | From m | To m | Date | | Plant | Hole No | Type | Depth to Base m | Response Zone | | Hole No | From m | To m | Description |
| | | | | Start | End | | | | | From m | To m | | | | |
| BH315 | CP | 0.00 | 13.52 | 10/03/2022 | 10/03/2022 | T820-068 | GEO_WS208 | SP | 4.10 | 1.00 | 4.10 | BH311B | 0.00 | 0.50 | Concrete |
| BH320 | IP | 0.00 | 1.20 | 10/03/2022 | 10/03/2022 | Insulated hand tools and coring equipment | GEO_WS209 | SP | 3.80 | 2.80 | 3.80 | BH311B | 0.50 | 9.00 | Bentonite |
| BH320 | WLS | 1.20 | 6.70 | 10/03/2022 | 11/03/2022 | T820-774 | GEO_WS210 | SP | 2.60 | 1.50 | 2.60 | BH311B | 9.00 | 16.00 | Gravel Backfill |
| BH321 | IP | 0.00 | 1.50 | 18/03/2022 | 18/03/2022 | Insulated hand tools | GEO_WS212 | SP | 3.00 | 0.50 | 2.50 | BH312 | 0.00 | 0.50 | Flush cover |
| BH321 | WLS | 1.20 | 6.34 | 18/03/2022 | 18/03/2022 | T820-627 | RE15 | SP | 10.00 | | | BH312 | 0.50 | 4.00 | Gravel Backfill |
| BH322 | IP | 0.00 | 1.20 | 21/03/2022 | 21/03/2022 | Insulated hand tools | | | | | | BH312 | 4.00 | 16.82 | Bentonite |
| BH322 | WLS | 1.20 | 6.00 | 21/03/2022 | 21/03/2022 | T820-627 | | | | | | BH312A | 0.00 | 0.25 | Concrete |
| BH323 | IP | 0.00 | 1.20 | 22/03/2022 | 22/03/2022 | Insulated hand tools | | | | | | BH312A | 0.25 | 0.50 | Bentonite |
| BH323 | WLS | 1.20 | 2.65 | 22/03/2022 | 22/03/2022 | T820-627 | | | | | | BH312A | 0.50 | 4.00 | Gravel Backfill |
| BH324 | IP | 0.00 | 1.20 | 04/04/2022 | 04/04/2022 | Insulated hand tools | | | | | | BH312A | 4.00 | 5.00 | Bentonite |
| BH324 | CP | 1.20 | 15.30 | 04/04/2022 | 06/04/2022 | T820-068 | | | | | | BH313 | 0.00 | 0.50 | Flush cover |
| BH325 | IP | 0.00 | 1.20 | 16/03/2022 | 16/03/2022 | Insulated hand tools | | | | | | BH313 | 0.50 | 3.00 | Bentonite |
| BH325 | CP | 1.20 | 4.50 | 16/03/2022 | 16/03/2022 | T820-068 | | | | | | BH313 | 3.00 | 8.00 | Gravel Backfill |
| BH326 | IP | 0.00 | 1.20 | 24/03/2022 | 24/03/2022 | Insulated hand tools | | | | | | BH313 | 8.00 | 12.22 | Bentonite |
| BH326 | WLS | 1.20 | 6.00 | 24/03/2022 | 24/03/2022 | T820-627 | | | | | | BH314 | 0.00 | 0.50 | Flush cover |

For Abbreviations see Key to Exploratory Hole Records

# TABLE 1 - FIELDWORK SUMMARY

Project Name: Victoria North HIF Infrastructure & Enabling
Client: BAM Nuttall
Project No: 326R
Engineer: ARUP

| DEPTH RELATED EXPLORATORY HOLE INFORMATION | | | | | | | INSTALLATION DETAILS | | | | | BACKFILL DETAILS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hole No | Type | From m | To m | Date | | Plant | Hole No | Type | Depth to Base m | Response Zone | | Hole No | From m | To m | Description |
| | | | | Start | End | | | | | From m | To m | | | | |
| BH327 | IP | 0.00 | 1.20 | 24/03/2022 | 24/03/2022 | Insulated hand tools | | | | | | BH314 | 0.50 | 9.50 | Bentonite |
| BH327 | WLS | 1.20 | 8.00 | 24/03/2022 | 24/03/2022 | T820-627 | | | | | | BH314 | 9.50 | 12.00 | Gravel Backfill |
| BH328 | IP | 0.00 | 1.20 | 24/03/2022 | 24/03/2022 | Insulated hand tools | | | | | | BH314 | 12.00 | 12.45 | Bentonite |
| BH328 | WLS | 1.20 | 8.00 | 24/03/2022 | 24/03/2022 | T820-627 | | | | | | BH315 | 0.00 | 0.50 | Upstanding cover |
| | | | | | | | | | | | | BH315 | 0.50 | 9.00 | Bentonite |
| | | | | | | | | | | | | BH315 | 9.00 | 12.50 | Gravel Backfill |
| | | | | | | | | | | | | BH315 | 12.50 | 13.52 | Bentonite |
| | | | | | | | | | | | | BH320 | 0.00 | 0.05 | Flush cover |
| | | | | | | | | | | | | BH320 | 0.05 | 0.50 | Concrete |
| | | | | | | | | | | | | BH320 | 0.50 | 3.50 | Bentonite |
| | | | | | | | | | | | | BH320 | 3.50 | 4.20 | Gravel Backfill |
| | | | | | | | | | | | | BH320 | 4.20 | 6.70 | Bentonite |
| | | | | | | | | | | | | BH321 | 0.00 | 0.20 | Flush cover |
| | | | | | | | | | | | | BH321 | 0.20 | 0.50 | Bentonite |
| | | | | | | | | | | | | BH321 | 0.50 | 4.50 | Gravel Backfill |

For Abbreviations see Key to Exploratory Hole Records

# TABLE 1 - FIELDWORK SUMMARY

Project Name: Victoria North HIF Infrastructure & Enabling
Client: BAM Nuttall

Project No: 326R
Engineer: ARUP

| DEPTH RELATED EXPLORATORY HOLE INFORMATION | | | | | | | INSTALLATION DETAILS | | | | | BACKFILL DETAILS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hole No | Type | From m | To m | Date | | Plant | Hole No | Type | Depth to Base m | Response Zone | | Hole No | From m | To m | Description |
| | | | | Start | End | | | | | From m | To m | | | | |
| | | | | | | | | | | | | BH321 | 4.50 | 6.34 | Bentonite |
| | | | | | | | | | | | | BH322 | 0.00 | 0.50 | Flush cover |
| | | | | | | | | | | | | BH322 | 0.50 | 5.40 | Bentonite |
| | | | | | | | | | | | | BH322 | 5.40 | 5.80 | Gravel Backfill |
| | | | | | | | | | | | | BH322 | 5.80 | 6.00 | Bentonite |
| | | | | | | | | | | | | BH323 | 0.00 | 0.20 | Flush cover |
| | | | | | | | | | | | | BH323 | 0.20 | 0.50 | Bentonite |
| | | | | | | | | | | | | BH323 | 0.50 | 1.70 | Gravel Backfill |
| | | | | | | | | | | | | BH323 | 1.70 | 2.65 | Bentonite |
| | | | | | | | | | | | | BH324 | 0.00 | 0.50 | Flush cover |
| | | | | | | | | | | | | BH324 | 0.50 | 13.10 | Bentonite |
| | | | | | | | | | | | | BH324 | 13.10 | 14.80 | Gravel Backfill |
| | | | | | | | | | | | | BH324 | 14.80 | 15.30 | Bentonite |
| | | | | | | | | | | | | BH325 | 0.00 | 0.20 | Flush cover |
| | | | | | | | | | | | | BH325 | 0.20 | 0.50 | Bentonite |

For Abbreviations see Key to Exploratory Hole Records

# TABLE 1 - FIELDWORK SUMMARY

Project Name: Victoria North HIF Infrastructure & Enabling
Client: BAM Nuttall

Project No: 326R
Engineer: ARUP

| DEPTH RELATED EXPLORATORY HOLE INFORMATION | | | | | | | INSTALLATION DETAILS | | | | | BACKFILL DETAILS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hole No | Type | From m | To m | Date | | Plant | Hole No | Type | Depth to Base m | Response Zone | | Hole No | From m | To m | Description |
| | | | | Start | End | | | | | From m | To m | | | | |
| | | | | | | | | | | | | BH325 | 0.50 | 3.50 | Gravel Backfill |
| | | | | | | | | | | | | BH325 | 3.50 | 4.50 | Bentonite |
| | | | | | | | | | | | | BH326 | 0.00 | 0.50 | Arisings |
| | | | | | | | | | | | | BH326 | 0.50 | 6.00 | Bentonite |
| | | | | | | | | | | | | BH327 | 0.00 | 0.50 | Flush cover |
| | | | | | | | | | | | | BH327 | 0.50 | 8.00 | Bentonite |
| | | | | | | | | | | | | BH328 | 0.00 | 0.50 | Arisings |
| | | | | | | | | | | | | BH328 | 0.50 | 8.00 | Bentonite |

For Abbreviations see Key to Exploratory Hole Records

# TABLE 1 - FIELDWORK SUMMARY

Project Name: Victoria North HIF Infrastructure & Enabling
Client: BAM Nuttall
Project No: 326R
Engineer: ARUP

| DEPTH RELATED EXPLORATORY HOLE INFORMATION | | | | | | | BACKFILL DETAILS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Hole No | Type | From m | To m | Date | | Plant | Hole No | From m | To m | Description |
| | | | | Start | End | | | | | |
| OP01 | TP | 0.00 | 0.15 | 07/03/2022 | 07/03/2022 | 3T Tracked excavator | OP01 | 0.00 | 0.15 | Arisings |
| OP02 | TP | 0.00 | 0.40 | 07/03/2022 | 07/03/2022 | 3T tracked excavator | OP02 | 0.00 | 0.40 | Arisings |
| OP03 | TP | 0.00 | 0.20 | 07/03/2022 | 07/03/2022 | 3T tracked excavator | OP03 | 0.00 | 0.20 | Arisings |
| OP04 | TP | 0.00 | 0.18 | 07/03/2022 | 07/03/2022 | 3T tracked excavator | OP04 | 0.00 | 0.18 | Arisings |
| TT301 | TP | 0.00 | 2.40 | 21/02/2022 | 21/02/2022 | 15T Tracked Excavator | TT301 | 0.00 | 2.65 | Arisings |
| TT302 | TP | 0.00 | 1.05 | 17/02/2022 | 17/02/2022 | 15T Tracked Excavator | TT302 | 0.00 | 1.10 | Arisings |
| TT303 | TP | 0.00 | 0.60 | 17/02/2022 | 17/02/2022 | 15T Tracked Excavator | TT303 | 0.00 | 3.50 | Arisings |
| TT303A | TP | 0.00 | 1.00 | 17/02/2022 | 17/02/2022 | 15T Tracked Excavator | TT303A | 0.00 | 1.10 | Arisings |
| TP304 | TP | 0.00 | 3.00 | 22/02/2022 | 22/02/2022 | 15T Tracked excavator | TP304 | 0.00 | 3.00 | Arisings |
| TP305 | TP | 0.00 | 3.00 | 23/02/2022 | 23/02/2022 | 15T Tracked excavator | TP305 | 0.00 | 3.00 | Arisings |
| TP306 | TP | 0.00 | 3.00 | 25/02/2022 | 25/02/2022 | 15T Tracked Excavator | TP306 | 0.00 | 3.00 | Arisings |
| TP307 | TP | 0.00 | 2.80 | 23/02/2022 | 23/02/2022 | 15T Tracked excavator | TP307 | 0.00 | 3.00 | Arisings |
| TP308 | TP | 0.00 | 3.00 | 22/02/2022 | 22/02/2022 | 15T tracked excavator | TP308 | 0.00 | 3.00 | Arisings |
| TP309 | TP | 0.00 | 3.00 | 23/02/2022 | 23/02/2022 | 15T Tracked Excavator | TP309 | 0.00 | 3.00 | Arisings |
| TP310 | TP | 0.00 | 3.00 | 22/03/2022 | 22/03/2022 | 15T Tracked Excavator | TP310 | 0.00 | 3.00 | Arisings |

For Abbreviations see Key to Exploratory Hole Records

# TABLE 1 - FIELDWORK SUMMARY

| | | | |
|---|---|---|---|
| Project Name: | Victoria North HIF<br>Infrastructure & Enabling | Client: | BAM Nuttall |
| Project No: | 326R | Engineer: | ARUP |

| DEPTH RELATED EXPLORATORY HOLE INFORMATION | | | | | | | BACKFILL DETAILS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Hole No | Type | From m | To m | Date | | Plant | Hole No | From m | To m | Description |
| | | | | Start | End | | | | | |
| HC-HIGH-CH:105 | STC | 0.00 | 2.30 | 16/05/2022 | 16/05/2022 | Hand coring equipment | HC-HIGH-CH:105 | 0.00 | 2.30 | Grout |
| HC-HIGH-CH:60 | STC | 0.00 | 1.50 | 16/05/2022 | 16/05/2022 | Hand coring equipment | HC-HIGH-CH:60 | 0.00 | 1.50 | Grout |
| HC-HIGH-CH:75 | STC | 0.00 | 2.35 | 17/05/2022 | 17/05/2022 | Hand coring equipment | HC-HIGH-CH:75 | 0.00 | 2.35 | Grout |
| HC-LOW-CH:105 | STC | 0.00 | 2.45 | 18/05/2022 | 18/05/2022 | Hand coring equipment | HC-LOW-CH:105 | 0.00 | 2.45 | Grout |
| HC-LOW-CH:60 | STC | 0.00 | 1.90 | 18/05/2022 | 18/05/2022 | Hand coring equipment | HC-LOW-CH:60 | 0.00 | 1.90 | Grout |
| HC-LOW-CH:75 | STC | 0.00 | 2.80 | 17/05/2022 | 17/05/2022 | Hand coring equipment | HC-LOW-CH:75 | 0.00 | 2.80 | Grout |
| IC-CH:105 | STC | 0.00 | 1.80 | 18/05/2022 | 18/05/2022 | Hand coring equipment | IC-CH:105 | 0.00 | 1.80 | Grout |
| IC-CH:60 | STC | 0.00 | 2.70 | 18/05/2022 | 18/05/2022 | Hand coring equipment | IC-CH:60 | 0.00 | 2.70 | Grout |
| IC-CH:75 | STC | 0.00 | 1.60 | 18/05/2022 | 18/05/2022 | Hand coring equipment | IC-CH:75 | 0.00 | 1.60 | Grout |

For Abbreviations see Key to Exploratory Hole Records

**Figures**

1 Site Location Plan
2 Exploratory Hole Location Plans (Boreholes)
3 Exploratory Hole Location Plans (Pits & Trenches)
4 Exploratory Hole Location Plans (Stockpile samples)
5 Exploratory Hole Location Plans (Water samples)


Legend Key
Sections - Site Location
600 Metres
2000 Feet
CHEETHAM HILL
MILLENNIUM QUARTER
NORTHERN QUARTER
Collyhurst
Miles Platting
Queens Road
Cheetham Hill Road
Rochdale Road
Oldham Road
New Bridge Street
Great Ducie Street
Elizabeth Street
Temple Primary School
St Chad's RC Primary School
Saviour Cofe Primary School
Abbott Community Primary School
Manchester Fort Retail Park
Manchester Victoria
Shudehill
Holt Town
Park View Community Primary
bam ritchies
Site Location
Project Name: Victoria North HIF Infrastructure & Enabling Works
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Contractor: BAM Ritchies
Date: 28/07/2022
Scale: 1:13500
Figure No: 326R/FIG 1
BAM R Site Location Plan 21/06/2017




Legend Key

St Catherines Wood - Former Gas Works BHs - Fomer Gas Works BHs

Remarks

bam ritchies

# Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:1500 |

FIGURE

Figure No: 326R / 2.0

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Former Gas Works Additional BHs - 301A

Remarks

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:500 |

FIGURE

Figure No: 326R / 2.1

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Plateax BHs - Plateax BHs

Remarks

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:1000 |

FIGURE

Figure No: 326R / 2.2

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Plateax BHs - Plateax BHs

Remarks

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:1000 |

Figure No: 326R / FIGURE 2.3

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Plateax BHs - Plateax BHs

Remarks

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:1000 |

FIGURE

Figure No: 326R / 2.4

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Red Bank Plateau - Former Creamline - Creamline

Remarks

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:500 |

FIGURE

Figure No: 326R / 2.5

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Fomer Gas Wiorks - TTs - Fomer Gas Wiorks - TTs

Remarks

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:500 |

FIGURE

Figure No: 326R / 3.1

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Trial Pits - Trial Pits

Remarks

Type any notes or if not required delete this text

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:500 |

FIGURE

Figure No: 326R / 3.2

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Trial Pits - Trial Pits

Remarks

Type any notes or if not required delete this text

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:500 |

Figure No: 326R / FIG 3.3

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Trial Pits - Trial Pits

Remarks

Type any notes or if not required delete this text

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:500 |

FIGURE

Figure No: 326R / 3.4

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Stockpiles - Stockpiles

Remarks

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:500 |

FIGURE

Figure No: 326R / 4.1

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

- Stockpiles - Stockpiles

Remarks

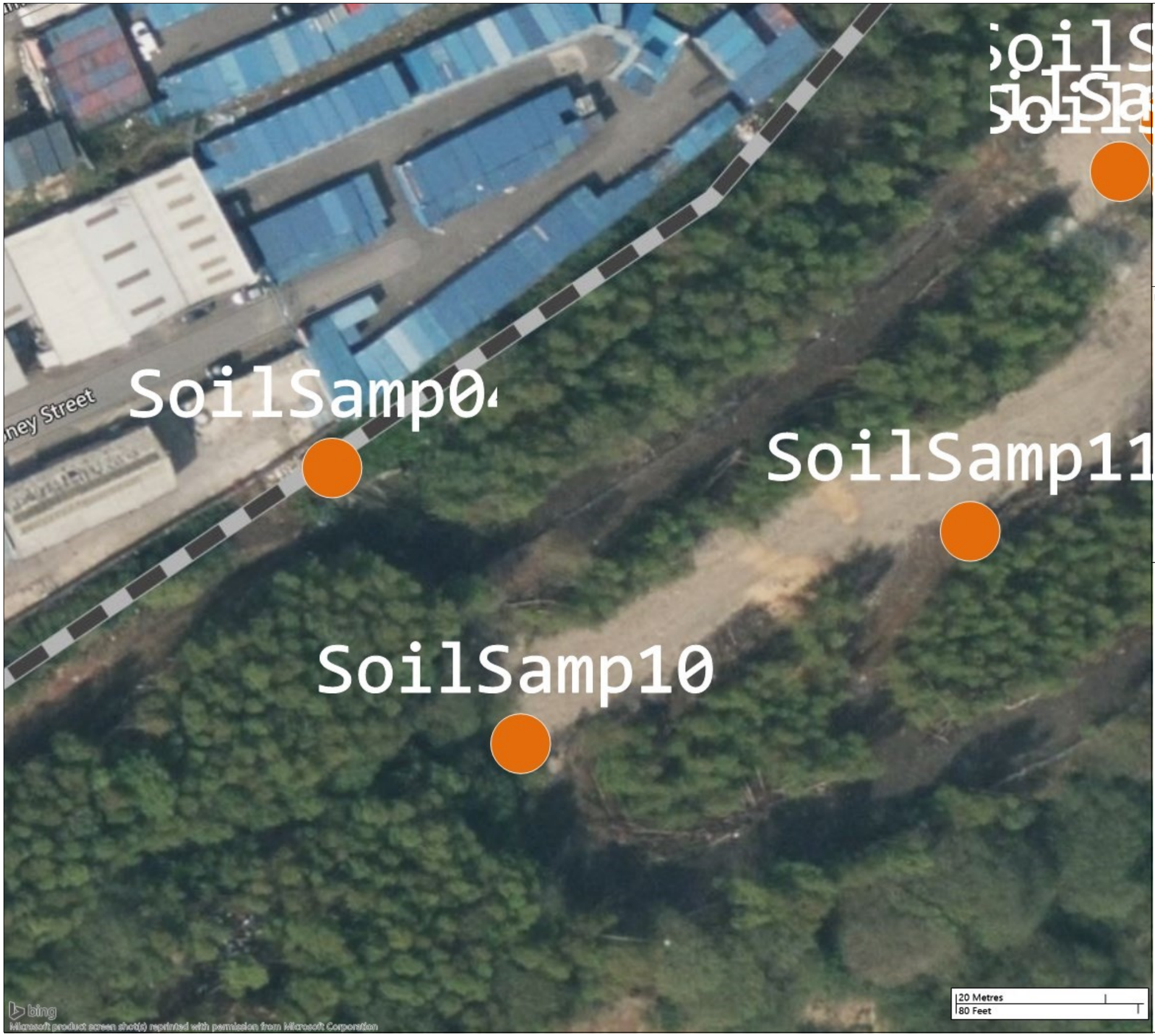
bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:500 |

Figure No: 326R / FIG 4.2

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

- Stockpiles - Stockpiles

Remarks

bam ritchies

## Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 11/09/2022 |
| Scale: | 1:500 |

FIGURE

Figure No: 326R / 4.3

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016




Legend Key

Surface Water Samples - SAMPLES

Remarks

# Exploratory Hole Locations

| | |
|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project No: | 326R |
| Client: | BAM Nuttall |
| Engineer: | ARUP |
| Contractor: | BAM Ritchies |
| Date: | 31/10/2022 |
| Scale: | 1:2500 |

Figure No: 326R / 326R / 5.0

BAM R Hole Location Plan A3 Landscape Fig 12/09/2016

## Appendices

### Appendix 1

1a Key to exploratory hole logs
1b Exploratory hole logs, photographs & sketches
1c Results of TRL Cone penetration tests
1d Results of Soil Infiltration (falling head tests)

# KEY TO EXPLORATORY HOLE RECORDS

**LOCATION TYPES**
(abbreviations based on AGS 4.0 : 2011)

| | | | |
|---|---|---|---|
| CP | Cable percussion | PM | Pressuremeter test hole |
| DCP | Dynamic cone penetrometer | RC | Rotary cored |
| DP | Dynamic probe sampling | RO | Rotary open hole |
| EXP | Logged exposure | SCP | Static cone penetrometer |
| HA | Hand Auger | SNC | Sonic core drilling |
| ICBR | In situ CBR test | TP | Trial pit/trench |
| IDEN | In situ density test | TRAV | Linear logging traverse or scanline survey |
| INST | instrument | VC | Vibrocore |
| IP | Inspection pit | W | Wash boring |
| IRDX | In situ redox test | WLS | Dynamic (windowless) sampler |
| IRES | In situ resistivity | WS | Window Sampler |
| IVAN | In situ vane test | CC | Concrete core |
| OP | Observation pit/trench | IPLT | In situ plate loading test |

**SAMPLES**
(abbreviations based on AGS 4.0 : 2011)

| | | | |
|---|---|---|---|
| AMAL | Amalgamated sample | L / Liner | Window Sample Liner Sample |
| B | Bulk disturbed sample | LB | Large bulk disturbed sample |
| BLK | Block sample | P | Piston sample |
| C | Core sample | TW | Thin walled push in sample |
| CBR | CBR mould sample | U | Undisturbed sample - open drive |
| D | Small disturbed sample | UT | Thin wall open drive tube sampler |
| ES | Soil sample for environmental testing (suite of containers) | W | Water sample |
| EW | Water sample for environmental testing (suite of containers) | G | Gas sample |
| RC | Rotary Core Run | NR | No recovery |
| WS(1) | Window Sample Run No. | D-NR | No recovery from SPT |

**IN SITU TESTS**

| | |
|---|---|
| SPT S or SPT C | Standard Penetration Test, open shoe (S) or solid cone (C)<br>Incremental blow count / penetration given on Borehole Hole Information Sheet<br>Summary result given on borehole log as N value, N=**, where the full test drive of 300mm is reached otherwise as blow count/penetration in mm. Detailes result, Self Weight Penetration and Hammer Energy Ratio given on Borehole Information Sheet |
| BHV | Borehole Vane Test - result given as peak(remoulded) |
| HV | Hand Vane Test - result given as peak(remoulded) |
| PP | Pocket Penetrometer Test, result given as shear strength |
| kBFH | Borehole Falling Head Permeability Test |
| kBRH | Borehole Rising Head Permeability Test |
| kBCH | Borehole Constant Head Permeability Test |
| kBPT | Borehole Contant Head Packer Permeability Test |
| kSPFH | Standpipe/Piezometer Falling Head Permeability Test |
| kSPRH | Standpipe/Piezometer Rising Head Permeability Test |
| kSPCH | Standpipe/Piezometer Constant Head Permeability Test |
| Soak | Soakaway Test |
| Eh | Redox Potential Test |
| Rs | Resistivity Test |
| SRDS | Sand Replacement Density Test, Small Pouring Cylinder |
| SRDL | Sand Replacement Density Test, Large Pouring Cylinder |
| CCD | Core Cutter Density Test |
| DCP | CBR from Dynamic Cone Penetrometer (DMRB HD29/08 Section 7.27) |
| CBR | In situ CBR apparatus (BS1377-9:1990 Section 4.3) |
| MEX | Mexecone |

# KEY TO EXPLORATORY HOLE RECORDS

**CORE RECORDS**
(abbreviations based on BS5930:2015)

| | |
|---|---|
| TCR | Total Core Recovery |
| SCR | Solid Core Recovery |
| RQD | Rock Quality Designation |
| If min | Minimum Fracture Spacing |
| If ave | Average Fracture Spacing |
| If max | Maximum Fracture Spacing |
| FI | Fracture Index - number of fractures per metre |
| CRF | Core recovered in the following run given in detailed description |
| AZCL | Assessed zone of core loss |
| NR | No recovery |
| NI | Non-intact |

In inclined boreholes depth is measured along the core axis and dips are given with respect to the normal to the core axis The assessment of SCR, ROD and Fracture Spacing excludes artificial fractures

**FLUSH** Flush type, returns percentage and colour given on Borehole Information Sheet

**GROUNDWATER** Details are given on Borehole Hole Information Sheet



Groundwater strike

Groundwater level after standing period

Groundwater strike where level rise recorded after entry.

**INSTALLATIONS** Type and details of installation and backfill are given on Borehole Hole Information Sheet
(based on AGS 4.0 : 2011)

| | | | |
|---|---|---|---|
| EPIE | Electronic Piezometer | ICM | Inclinometer - Manual |
| ETM | Magnetic Extensometer | PPIE | Pneumatic Piezometer |
| ETR | Rod Extensometer | SLIP | Slip indicator |
| ETT | Tape Extensometer | SP | Standpipe |
| HPIE | Hydraulic piezometer | SPIE | Standpipe piezometer |
| ICE | Inclinometer | | |

**Notes**

Soils and rocks are described in accordance with BS EN ISO 14688-1 : 2002, 14688-2 : 2004, 14689-1 : 2003 and BS 5930 :2015

**References**


AGS: 2011 Electronic Transfer of Geotechnical and Geoenvironmental Data AGS4

BS EN ISO 14688-1 : 2002: Geotechnical investigation and testing - Identification and classification of soil - Part 1 Identification and description. BSI

BS EN ISO 14688-2: 2004: Geotechnical investigation and testing - Identification and classification of soil - Part 2 Principles for a classification. BSI

BS EN ISO 14689-1 : 2003: Geotechnical investigation and testing - dentification and classification of rock - Part 1 Identification and description. BSI

BS EN ISO 22476-3 : 2005 : Geotechnical investigation and testing - Field testing - Part 3 Standard penetration test. BSI

BS 1377-9:1990, Methods of test for soils for civil engineering purposes – Part 9: In-situ tests. BSI

BS 5930 : 2015 Code of Practice for site investigations. British Standards Institution. BSI

The Highways Agency : 2008 : Volume 7 Section 3 Part 2 HD29/08. Testing at Investigation Sites

# BOREHOLE LOG

Borehole No: BH301
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384852.11 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399762.18 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.87 mOD | Scale: | 1:50 |
| Date Started: | 24/02/2022 | | | Log Status: | FINAL |
| Date Completed: | 25/02/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 15.08m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Dark grey gravelly slightly sandy CLAY with black organic matter (<5mm) and occasional rootlets (<20mm). [MADE GROUND] | | 0.10 | 41.77 | | | | | | | | | | | | |
| | | (0.40) | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | 0.50 | 41.37 | 0.30 | ES | | | | | | | | | | |
| MADE GROUND: Black gravelly slightly silty fine to coarse SAND of ash with occasional rootlets (<3mm). Gravel is angular fine to coarse of coal fragments (10-60mm) and high hydrocarbon odour (possible diesel). [MADE GROUND] | | | | 0.50 | B | | | | PID | 3.30 | ppm | | | | |
| | | (0.70) | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | D | | | | PID | 1.40 | ppm | | | | |
| | | 1.20 | 40.67 | 1.00 | ES | | | | PID | 1.20 | ppm | | | | |
| | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| MADE GROUND: Orangish brown slightly gravelly sandy CLAY with frequent rootlets (<100mm). Sand is fine to coarse occasionally of ash. Gravel is angular to sub-angular fine to coarse of coal and brick fragments. [MADE GROUND] | | | | 1.20 - 1.65 | | | | | S | N=5 | | | | | |
| | | | | 1.50 | ES | | | | | | | | | | |
| | | (1.30) | | 1.80 | D | | | | PID | 0.00 | ppm | | | | |
| | | | | 2.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| MADE GROUND: Brown locally black slightly gravelly sandy CLAY with occasional black organic matter (<20mm). Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of coal and sandstone. [MADE GROUND] | | | | 2.00 - 2.45 | | | | | S | N=4 | | | | | |
| | | 2.50 | 39.37 | | | | | | | | | | | | |
| | | | | 2.70 | D | | | | | | | | | | |
| MADE GROUND: Greyish brown locally orangish brown slightly gravelly slightly sandy CLAY with occasional lenses of coarse sand (<50mm). Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of ceramic brick and coal. [MADE GROUND] | | | | 3.20 | ES | | | | | | | | | | |
| | | | | 3.00 - 3.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=6 | | | | | |
| | | | | 3.70 | D | | | | | | | | | | |
| | | | | 4.20 | ES | | | | | | | | | | |
| | | | | 4.00 - 4.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 4.00 - 4.45 | D-NR | | | | | | | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=5 | | | | | |
| | | | | 4.70 | D | | | | | | | | | | |
| | | | | 5.20 | ES | | | | | | | | | | |
| | | | | 5.00 - 5.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 5.00 - 5.45 | D-NR | | | | | | | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=8 | | | | | |
| | | | | 5.70 | D | | | | | | | | | | |
| | | (11.00) | | 6.20 | ES | | | | | | | | | | |
| | | | | 6.00 - 6.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 6.00 - 6.45 | D | | | | | | | | | | |
| | | | | 6.00 - 6.45 | | | | | S | N=8 | | | | | |
| | | | | 7.00 | D | | | | | | | | | | |
| *7.50m : Gravel is fine.* | | | | 7.50 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 7.50 - 7.95 | B | | | | | | | | | | |
| | | | | 7.50 - 7.95 | D | | | | | | | | | | |
| | | | | 7.50 - 7.95 | | | | | S | N=7 | | | | | |
| | | | | 8.50 | D | | | | | | | | | | |
| | | | | 9.20 | ES | | | | | | | | | | |
| | | | | 9.00 - 9.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 9.00 - 9.45 | D | | | | | | | | | | |
| | | | | 9.00 - 9.45 | | | | | S | N=25 | | | | | |
| | | | | 10.00 | D | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

Borehole No: BH301
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384852.11 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399762.18 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.87 mOD | Scale: | 1:50 |
| Date Started: | 24/02/2022 | | | Log Status: | FINAL |
| Date Completed: | 25/02/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 15.08m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Greyish brown locally orangish brown slightly gravelly slightly sandy CLAY with occasional lenses of coarse sand (<50mm). Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of ceramic brick and coal. [MADE GROUND] | | | | 10.50 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 10.50 - 10.95 | B | | | | | | | | | | |
| | | | | 10.50 - 10.95 | D | | | | | | | | | | |
| *10.50 - 13.50m : Sandy.* | | | | 10.50 - 10.95 | | | | | S | N=33 | | | | | |
| | | | | 11.50 | D | | | | | | | | | | |
| | | | | 12.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 12.00 - 12.45 | B | | | | | | | | | | |
| | | | | 12.00 - 12.45 | D | | | | | | | | | | |
| | | | | 12.00 - 12.45 | | | | | S | N=12 | | | | | |
| | | | | 13.00 | D | | | | | | | | | | |
| Extremely weak reddish brown slightly silty fine to coarse SANDSTONE. Recovered as, dense angular to sub-angular fine to coarse gravel sized fragments. [COLLYHURST SANDSTONE] | | 13.50 | 28.37 | 13.50 - 13.74 | | | | | S | 50 / 115 | | | | | |
| | | | | 13.50 - 13.95 | B | | | | | | | | | | |
| | | | | 13.50 - 13.95 | D | | | | | | | | | | |
| | | (1.58) | | | | | | | | | | | | | |
| | | 15.08 | 26.79 | 15.00 - 15.08 | | | | | C | 50 / 30 | | | | | |
| Borehole Terminated at 15.08m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH301
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384852.11 mE | Checked By: | APB |
| Project No: | 326R | | 399762.18 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 41.87 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 24/02/2022 | Orientation: | - - deg. | | |
| Date Completed: | 25/02/2022 | Inclination: | 90 deg. | Final Depth: | 15.08m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 24/02/2022 | 24/02/2022 | Hand tools | | | Chris Hewitt | Omar Coggins | |
| 0.00 | 15.20 | | | | | | | | | |
| 1.20 | 15.00 | CP | | 25/02/2022 | T820-068 | | | Ian Ward | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 24/02/2022 | 13:00 | 0.00 | 0.00 | Dry | Start of shift |
| 24/02/2022 | 16:00 | 2.50 | 2.50 | Dry | End of shift |
| 25/02/2022 | 07:30 | 2.50 | 2.50 | 2.40 | Start of shift |
| 25/02/2022 | 15:14 | 15.00 | 0.00 | 11.00 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 6.00 | 200 | |
| 15.00 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 6.00 | 200 | |
| 15.00 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 14.80 | 15.00 | 00:30 | Chiselling. Casing. |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| 25/02/2022 | 13.50 | 13.00 | 5 | 11.00 | | |
| 25/02/2022 | 13.50 | 13.00 | 10 | 11.00 | | |
| 25/02/2022 | 13.50 | 13.00 | 15 | 11.00 | | |
| 25/02/2022 | 13.50 | 13.00 | 20 | 11.00 | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| ICM | 1 | 0.00 | 15.00 | 70 | Plain | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 15.00 | 904 | Grout |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=5 | 0.00 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | S | N=4 | 1.70 | Dry | | 1 | 75 | 2 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=6 | 2.90 | 2.90 | | 1 | 75 | 0 | 75 | 1 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | N=5 | 3.90 | 3.80 | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 5.00 | S | N=8 | 4.50 | 4.90 | | 1 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | S | N=8 | 5.90 | Dry | | 1 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 7.50 | S | N=7 | 7.40 | Dry | | 1 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 9.00 | S | N=25 | 8.90 | Dry | | 3 | 75 | 3 | 75 | 5 | 75 | 5 | 75 | 7 | 75 | 8 | 75 | BRW02 (AR1150) | 66 |
| 10.50 | S | N=33 | 10.40 | Dry | | 4 | 75 | 6 | 75 | 7 | 75 | 8 | 75 | 8 | 75 | 10 | 75 | BRW02 (AR1150) | 66 |
| 12.00 | S | N=12 | 11.90 | Dry | | 2 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | 3 | 75 | 4 | 75 | BRW02 (AR1150) | 66 |
| 13.50 | S | 50 / 115 | 13.40 | 11.00 | | 12 | 75 | 13 | 50 | 22 | 75 | 28 | 40 | | | | | BRW02 (AR1150) | 66 |
| 15.00 | C | 50 / 30 | 14.90 | 11.00 | | 25 | 50 | | | 50 | 30 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

Borehole No: BH301A
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384858.30 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399760.47 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.61 mOD | Scale: | 1:50 |
| Date Started: | 30/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 30/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 6.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Ash and brick fill (drillers description). [MADE GROUND] | | (1.80) | | | | | | | | | | | | | |
| MADE GROUND: Sand fill (drillers description). [MADE GROUND] | | 1.80 | 39.81 | | | | | | | | | | | | |
| | | (2.10) | | | | | | | | | | | | | |
| MADE GROUND: Clay and brick fill (drillers description). [MADE GROUND] | | 3.90 | 37.71 | 4.00 | | | | | PP | 10 | kPa | | | | |
| | | | | 4.00 | | | | | PP | 10 | kPa | | | | |
| | | | | 4.00 | | | | | PP | 10 | kPa | | | | |
| | | | | 4.00 | | | | | HV | P14,R11 | kPa | | | | |
| | | | | 4.00 | | | | | HV | P17,R17 | kPa | | | | |
| | | | | 4.00 | | | | | HV | P25,R22 | kPa | | | | |
| | | | | 4.00 - 4.45 | UT | 100 | 100 | 22 | | | | | | | |
| | | (2.10) | | 4.45 | | | | | PP | 20 | kPa | | | | |
| | | | | 4.45 | | | | | PP | 20 | kPa | | | | |
| | | | | 4.45 | | | | | PP | 29 | kPa | | | | |
| | | | | 4.45 | | | | | HV | P17,R14 | kPa | | | | |
| | | | | 4.45 | | | | | HV | P22,R17 | kPa | | | | |
| | | | | 4.45 | | | | | HV | P22,R19 | kPa | | | | |
| | | | | 5.00 | | | | | HV | | kPa | | | | |
| | | | | 5.00 - 5.45 | UT | 100 | 60 | 48 | | | | | | | |
| | | | | 5.45 | | | | | PP | 49 | kPa | | | | |
| *5.99m : Oil contamination encountered, borehole terminated / relocated (see log BH301B).* | | 6.00 | 35.61 | 5.45 | | | | | PP | 59 | kPa | | | | |
| | | | | 5.45 | | | | | PP | 69 | kPa | | | | |
| | | | | 5.45 | | | | | HV | P39,R36 | kPa | | | | |
| | | | | 5.45 | | | | | HV | P42,R36 | kPa | | | | |
| | | | | 5.45 | | | | | HV | P42,R39 | kPa | | | | |
| Borehole Terminated at 6.00m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH301A
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384858.30 mE | Checked By: | APB |
| Project No: | 326R | | 399760.47 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 41.61 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 30/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 30/03/2022 | Inclination: | 90 deg. | Final Depth: | 6.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 30/03/2022 | 30/03/2022 | Hand tools | | | Ian Ward | Ethan Richardson | |
| 0.00 | 6.00 | | | | | | | | | |
| 1.20 | 6.00 | CP | 30/03/2022 | 30/03/2022 | T820-068 | | | Ian Ward | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 30/03/2022 | 07:30 | 0.00 | 0.00 | Dry | Start of shift |
| 30/03/2022 | 10:14 | 6.00 | 6.00 | 5.00 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 6.00 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 6.00 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| 30/03/2022 | 5.50 | 4.90 | 5 | 5.00 | | |
| 30/03/2022 | 5.50 | 4.90 | 10 | 5.00 | | |
| 30/03/2022 | 5.50 | 4.90 | 15 | 5.00 | | |
| 30/03/2022 | 5.50 | 4.90 | 20 | 5.00 | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 905 | Arisings |
| 0.50 | 5.50 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Refusal

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

bam ritchies

Borehole No: BH301B
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384853.97 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399765.09 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.96 mOD | Scale: | 1:50 |
| Date Started: | 30/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 30/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 14.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| MADE GROUND: Ash, brick and stone fill (drillers description). [MADE GROUND] | | (2.80) | | | | | | | | | | | | | |
| MADE GROUND: Clay fill (drillers description). [MADE GROUND] | | 2.80 | 39.16 | | | | | | | | | | | | |
| | | | | 3.00 | | | | | PP | 69 | kPa | | | | |
| | | | | 3.00 | | | | | PP | 78 | kPa | | | | |
| | | | | 3.00 | | | | | PP | 78 | kPa | | | | |
| | | | | 3.00 | | | | | HV | P17,R14 | kPa | | | | |
| | | | | 3.00 | | | | | HV | P19,R17 | kPa | | | | |
| | | | | 3.00 | | | | | HV | P33,R22 | kPa | | | | |
| | | | | 3.00 - 3.45 | UT | 100 | 100 | 20 | | | | | | | |
| | | | | 3.45 | | | | | PP | 78 | kPa | | | | |
| | | | | 3.45 | | | | | PP | 78 | kPa | | | | |
| | | | | 3.45 | | | | | PP | 98 | kPa | | | | |
| | | | | 3.45 | | | | | HV | P25,R25 | kPa | | | | |
| | | | | 3.45 | | | | | HV | P28,R22 | kPa | | | | |
| | | | | 3.45 | | | | | HV | P30,R25 | kPa | | | | |
| | | | | 4.00 | | | | | PP | 59 | kPa | | | | |
| | | | | 4.00 | | | | | PP | 98 | kPa | | | | |
| | | | | 4.00 | | | | | PP | 98 | kPa | | | | |
| | | | | 4.00 | | | | | HV | P22,R19 | kPa | | | | |
| | | | | 4.00 | | | | | HV | P22,R19 | kPa | | | | |
| | | | | 4.00 | | | | | HV | P30,R22 | kPa | | | | |
| | | | | 4.00 - 4.45 | UT | 100 | 90 | 23 | | | | | | | |
| | | | | 4.45 | | | | | PP | 78 | kPa | | | | |
| | | | | 4.45 | | | | | PP | 78 | kPa | | | | |
| | | | | 4.45 | | | | | PP | 88 | kPa | | | | |
| | | | | 4.45 | | | | | HV | P53,R44 | kPa | | | | |
| | | | | 4.45 | | | | | HV | P58,R53 | kPa | | | | |
| | | | | 4.45 | | | | | HV | P64,R53 | kPa | | | | |
| | | (11.10) | | 5.00 | | | | | PP | 69 | kPa | | | | |
| | | | | 5.00 | | | | | PP | 88 | kPa | | | | |
| | | | | 5.00 | | | | | PP | 98 | kPa | | | | |
| | | | | 5.00 | | | | | HV | P19,R17 | kPa | | | | |
| | | | | 5.00 | | | | | HV | P22,R22 | kPa | | | | |
| | | | | 5.00 | | | | | HV | P28,R17 | kPa | | | | |
| | | | | 5.00 - 5.45 | UT | 100 | 100 | 30 | | | | | | | |
| | | | | 5.45 | | | | | PP | 59 | kPa | | | | |
| | | | | 5.45 | | | | | PP | 59 | kPa | | | | |
| | | | | 5.45 | | | | | PP | 69 | kPa | | | | |
| | | | | 5.45 | | | | | HV | P47,R33 | kPa | | | | |
| | | | | 5.45 | | | | | HV | P61,R44 | kPa | | | | |
| | | | | 5.45 | | | | | HV | P66,R30 | kPa | | | | |
| | | | | 6.00 | | | | | HV | | kPa | | | | |
| | | | | 6.00 - 6.45 | UT | 100 | 70 | 35 | | | | | | | |
| | | | | 6.45 | | | | | PP | 88 | kPa | | | | |
| | | | | 6.45 | | | | | PP | 88 | kPa | | | | |
| | | | | 6.45 | | | | | PP | 98 | kPa | | | | |
| | | | | 6.45 | | | | | HV | P28,R25 | kPa | | | | |
| | | | | 6.45 | | | | | HV | P28,R28 | kPa | | | | |
| | | | | 6.45 | | | | | HV | P36,R28 | kPa | | | | |
| | | | | 7.50 | | | | | PP | 108 | kPa | | | | |
| | | | | 7.50 | | | | | PP | 88 | kPa | | | | |
| | | | | 7.50 | | | | | PP | 98 | kPa | | | | |
| | | | | 7.50 | | | | | HV | P22,R17 | kPa | | | | |
| | | | | 7.50 | | | | | HV | P25,R22 | kPa | | | | |
| | | | | 7.50 | | | | | HV | P36,R30 | kPa | | | | |
| | | | | 7.50 - 7.95 | UT | 100 | 90 | 42 | | | | | | | |
| | | | | 7.95 | | | | | PP | 147 | kPa | | | | |
| | | | | 7.95 | | | | | PP | 266 | kPa | | | | |
| | | | | 7.95 | | | | | PP | 314 | kPa | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

Borehole No: BH301B
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384853.97 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399765.09 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.96 mOD | Scale: | 1:50 |
| Date Started: | 30/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 30/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 14.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Clay fill (drillers description). [MADE GROUND] | | | | 7.95 | | | | | HV | P105,R86 | kPa | | | | |
| | | | | 7.95 | | | | | HV | P111,R89 | kPa | | | | |
| | | | | 7.95 | | | | | HV | P89,R72 | kPa | | | | |
| | | | | 9.00 | | | | | HV | | kPa | | | | |
| | | | | 9.00 - 9.45 | UT | 100 | 60 | 45 | | | | | | | |
| | | | | 9.45 | | | | | PP | 137 | kPa | | | | |
| | | | | 9.45 | | | | | PP | 158 | kPa | | | | |
| | | | | 9.45 | | | | | PP | 177 | kPa | | | | |
| | | | | 9.45 | | | | | HV | P61,R55 | kPa | | | | |
| | | | | 10.50 - 10.95 | UT | 100 | 100 | 56 | | | | | | | |
| | | | | 12.00 - 12.45 | UT | 100 | 100 | 59 | | | | | | | |
| | | | | 13.50 - 13.95 | UT-NR | 100 | | 100 | | | | | | | |
| Red bunter sandstone (drillers description). [COLLYHURST SANDSTONE] | | 13.90 | 28.06 | | | | | | | | | | | | |
| Borehole Terminated at 14.00m | | 14.00 | 27.96 | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH301B
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384853.97 mE | Checked By: | APB |
| Project No: | 326R | | 399765.09 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 41.96 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 30/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 30/03/2022 | Inclination: | 90 deg. | Final Depth: | 14.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 30/03/2022 | 30/03/2022 | Hand tools | | | Ian Ward | Ethan Richardson | |
| 0.00 | 14.00 | | | | | | | | | |
| 1.20 | 14.00 | CP | 30/03/2022 | 30/03/2022 | T820-068 | | | Ian Ward | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 30/03/2022 | 11:00 | 0.00 | 0.00 | Dry | Start of shift |
| 30/03/2022 | 16:30 | 14.00 | 13.00 | 11.20 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 14.00 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 13.00 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| 30/03/2022 | 13.70 | 13.00 | 5 | 12.50 | | |
| 30/03/2022 | 13.70 | 13.00 | 10 | 12.00 | | |
| 30/03/2022 | 13.70 | 13.00 | 15 | 11.50 | | |
| 30/03/2022 | 13.70 | 13.00 | 20 | 11.20 | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 905 | Arisings |
| 0.50 | 14.00 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

Borehole No: BH301C
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 384851.03 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399758.87 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.83 mOD | Scale: | 1:50 |
| Date Started: | 31/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 31/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 4.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| MADE GROUND: Ash and brick fill (drillers description). [MADE GROUND] | | (1.20) | | | | | | | | | | | | | |
| | | 1.20 | 40.63 | 1.20 | ES | | | | PID | 0.20 | ppm | | | | |
| MADE GROUND: Dark grey gravelly fine to coarse SAND (partially of ash) with medium cobble content and rare woody fragments (<100mm). Gravel is angular fine to coarse of mixed lithologies (brick, concrete and sandstone). Cobbles are angular of brick and concrete. [MADE GROUND] | | (0.80) | | 1.20 - 2.00 | Liner | | | | | | | | | | |
| | | | | 1.70 | ES | | | | | | | | | | |
| | | (0.40) | | 1.80 | D | | | | PID | 0.00 | ppm | | | | |
| *1.69 - 2.00m : very clayey* | | 2.00 | 39.83 | 2.00 | D | | | | | | | | | | |
| MADE GROUND: Dark brown locally mottled light grey and orangish brown slightly gravelly sandy CLAY with occasional pockets of coarse sand (<240mm) and rootlets (<130mm). Sand is fine to coarse occasionally of ash. Gravel is angular to sub-rounded fine to coarse of mixed lithologies (brick, concrete and sandstone). [MADE GROUND] | | | 39.83 | | | | | | PID | 0.20 | ppm | | | | |
| *1.69 - 2.00m : very clayey* | | | | 2.00 - 3.00 | Liner | | | | | | | | | | |
| | | | | 2.50 - 3.00 | B | | | | | | | | | | |
| | | | | 3.40 | D | | | | | | | | | | |
| | | | | 3.00 - 4.00 | Liner | | | | | | | | | | |
| | | | | 3.50 - 3.80 | B | | | | | | | | | | |
| | | | | 3.80 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 10.60 | ppm | | | | |
| Borehole Terminated at 4.00m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH301C
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | WLS |
| | | Co-ordinates: | 384851.03 mE | Checked By: | APB |
| Project No: | 326R | | 399758.87 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 41.83 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 31/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 31/03/2022 | Inclination: | 90 deg. | Final Depth: | 4.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 31/03/2022 | 31/03/2022 | Hand tools | | | Chris Hewitt | | |
| 1.20 | 4.00 | WLS | 31/03/2022 | 31/03/2022 | T830-627 | | | Chris Hewitt | | |
| 1.20 | 2.00 | | | | | | | | Ethan Richardson | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 31/03/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 31/03/2022 | 10:00 | 4.00 | 4.00 | 3.89 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.00 | 87 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.00 | 87 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 905 | Arisings |
| 0.50 | 4.00 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




BH301C: 1.20-4.00m

bam ritchies

# Borehole Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

Borehole No: BH301D
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 384844.51 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399764.94 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.94 mOD | Scale: | 1:50 |
| Date Started: | 31/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 31/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 3.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Ash and brick fill (drillers description). [MADE GROUND] | | (1.20) | | | | | | | | | | | | | |
| MADE GROUND: Dark brown slightly gravelly CLAY with low cobble content and occasional pockets of coarse sand (<135mm). Sand is fine and medium occasionally of ash. Gravel is angular fine to coarse of brick, ash and coal. Cobbles are sub-angular of brick and sandstone. [MADE GROUND] | | 1.20<br>(1.70) | 40.74 | 1.20<br>1.40<br>1.20 - 2.00<br>1.50 - 2.00<br>2.00<br>2.20<br>2.00 - 3.00<br>2.40 - 2.90 | ES<br>D<br>Liner<br>B<br>ES<br>D<br>Liner<br>B | | | | PID<br>PID | 1.20<br>0.20 | ppm<br>ppm | | | | |
| MADE GROUND: Dark grey and black slightly gravelly coarse SAND (very strong hydrocarbon odour noted). Gravel is angular fine and medium of concrete and brick. [MADE GROUND] | | 2.90<br>3.00 | 39.04<br>38.94 | 2.90 - 3.00 | ES | | | | PID | 5.90 | ppm | | | | |
| Borehole Terminated at 3.00m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH301D
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 384844.51 mE 399764.94 mN | Checked By: | APB |
| Client: | BAM Nuttall | Ground Level: | 41.94 mOD | Approved By: | JH |
| Engineer: | ARUP | | | Log Status: | FINAL |
| Date Started: | 31/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| Date Completed: | 31/03/2022 | Inclination: | 90 deg. | Final Depth: | 3.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 31/03/2022 | 31/03/2022 | Hand tools | | | Chris Hewitt | | |
| 1.20 | 3.00 | WLS | 31/03/2022 | 31/03/2022 | T820-627 | | | Chris Hewitt | | |
| 1.20 | 3.00 | | | | | | | | Ethan Richardson | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 31/03/2022 | 10:00 | 0.00 | 0.00 | Dry | Start of shift |
| 31/03/2022 | 11:00 | 3.00 | 3.00 | 2.70 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 3.00 | 87 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 3.00 | 87 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 905 | Arisings |
| 0.50 | 3.00 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

Borehole No: BH302
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384826.90 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399705.60 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.76 mOD | Scale: | 1:50 |
| Date Started: | 01/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 22/02/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 14.08m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOPSOIL: Greyish brown slightly gravelly slightly sandy CLAY. Sand is partially of ash. [TOPSOIL] | | 0.20 | 42.56 | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| MADE GROUND: Brown and reddish brown very gravelly fine to coarse SAND with low to medium cobble content . Gravel is angular and sub angular of brick and concrete. Cobbles are angular of brick including whole bricks. [MADE GROUND] | | (0.70) | | 0.50 | D | | | | PID | 0.00 | ppm | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 5.40 | ppm | | | | |
| | | 0.90 | 41.86 | 1.00 | D | | | | | | | | | | |
| | | (0.30) | | 1.00 | ES | | | | | | | | | | |
| | | 1.20 | 41.56 | 1.20 | B | | | | PID | 0.00 | ppm | | | | |
| MADE GROUND: Brown gravelly silty fine to coarse SAND. Gravel is sub angular and sub rounded fine to coarse of mixed lithology including, brick, slag and concrete. [MADE GROUND ] | | | | 1.20 | D | | | | | | | | | | |
| | | | | 1.20 | ES | | | | | | | | | | |
| | | (0.80) | | | | | | | PID | 4.20 | ppm | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=4 | | | | | |
| | | | | 1.80 | D | | | | PID | 0.00 | ppm | | | | |
| | | 2.00 | 40.76 | 2.00 | B | | | | | | | | | | |
| MADE GROUND: Black gravelly slightly clayey fine to coarse SAND (predominantly of ash). Gravel is sub-angular to sub-rounded fine to coarse of coal brick and concrete with diesel soaking. [MADE GROUND] | | | | 2.00 | D-NR | | | | | | | | | | |
| | | | | 2.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=3 | | | | | |
| MADE GROUND: Soft brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is sub angular to sub-rounded fine to medium of sandstone. [MADE GROUND] | | | | 2.70 | D | | | | | | | | | | |
| | | | | 3.00 | B | | | | | | | | | | |
| | | | | 3.00 | D | | | | | | | | | | |
| | | | | 3.00 | ES | | | | | | | | | | |
| *3.00m : Low to medium cobble content.* | | (2.80) | | | | | | | PID | 0.80 | ppm | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=2 | | | | | |
| | | | | 3.70 | D | | | | | | | | | | |
| *4.00m : Gravel is fine to medium.* | | | | 4.00 | B | | | | | | | | | | |
| | | | | 4.00 | D-NR | | | | | | | | | | |
| | | | | 4.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 2.10 | ppm | | | | |
| | | | | 4.00 - 4.22 | | | | | S | | | | | | |
| | | | | 4.70 | D | | | | PID | 0.00 | ppm | | | | |
| | | 4.80 | 37.96 | | | | | | | | | | | | |
| MADE GROUND: Firm brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone and coal. [MADE GROUND] | | | | 5.00 | UT | 100 | 100 | 48 | | | | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=8 | | | | | |
| | | | | 5.45 | D | | | | | | | | | | |
| | | | | 6.00 | B | | | | | | | | | | |
| | | | | 6.00 | D | | | | | | | | | | |
| | | | | 6.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 6.00 - 6.45 | | | | | S | N=12 | | | | | |
| | | | | 7.00 | D | | | | | | | | | | |
| | | (5.70) | | | | | | | | | | | | | |
| | | | | 7.50 | UT | 100 | 100 | 55 | | | | | | | |
| | | | | 7.50 - 7.95 | | | | | S | N=7 | | | | | |
| | | | | 7.95 | D | | | | | | | | | | |
| | | | | 9.00 | B | | | | | | | | | | |
| | | | | 9.00 | D | | | | | | | | | | |
| | | | | 9.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 9.00 - 9.45 | | | | | S | N=10 | | | | | |
| | | | | 10.00 | D | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

bam ritchies

Borehole No: BH302
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384826.90 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399705.60 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.76 mOD | Scale: | 1:50 |
| Date Started: | 01/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 22/02/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 14.08m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Firm brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is angular fine to coarse of sandstone and coal. [MADE GROUND] | | | | | | | | | | | | | | | |
| | | 10.50 | 32.26 | 10.50 | D | | | | | | | | | | |
| | | | | 10.50 | ES | | | | | | | | | | |
| | | | | 10.50 | UT-NR | 100 | | 42 | | | | | | | |
| MADE GROUND: Brown gravelly slightly sandy CLAY. Sand is predominantly fine. Gravel is sub-angular to rounded fine to coarse of sandstone quartzite and brick. [MADE GROUND] | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 10.50 - 10.95 | | | | | S | N=9 | | | | | |
| | | (1.50) | | | | | | | | | | | | | |
| | | | | 11.50 | D | | | | | | | | | | |
| | | 12.00 | 30.76 | 12.00 | B | | | | | | | | | | |
| | | | | 12.00 | D | | | | | | | | | | |
| Stiff reddish brown slightly sandy CLAY. Sand is fine to coarse. [MANCHESTER MARL] | | | | 12.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 12.00 - 12.45 | | | | | S | N=20 | | | | | |
| | | (2.08) | | 13.00 | D | | | | | | | | | | |
| | | | | 13.50 | B | | | | | | | | | | |
| | | | | 13.50 | D | | | | | | | | | | |
| | | | | 13.50 - 13.78 | | | | | S | 60 / 125 | | | | | |
| | | 14.08 | 28.68 | 14.00 - 14.08 | | | | | C | 50 / 40 | | | | | |
| Borehole Terminated at 14.08m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH302
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384826.90 mE 399705.60 mN | Checked By: | APB |
| Client: | BAM Nuttall | Ground Level: | 42.76 mOD | Approved By: | JH |
| Engineer: | ARUP | | | Log Status: | FINAL |
| Date Started: | 01/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| Date Completed: | 22/02/2022 | Inclination: | 90 deg. | Final Depth: | 14.08m |

## Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 18/02/2022 | 18/02/2022 | Hand tools | | | Chris Hewitt | Ethan Richardson | |
| 0.00 | 15.08 | | | | | | | | | |
| 1.20 | 14.20 | CP | | 22/02/2022 | T820-068 | | | Chris Hewitt | | |
| 1.20 | 15.00 | CP | | 25/02/2022 | T820-068 | | | Ian Ward | | |

## Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 18/02/2022 | 10:00 | 0.00 | 0.00 | Dry | Start of shift |
| 18/02/2022 | 15:00 | 1.20 | 0.00 | Dry | End of shift |
| 21/02/2022 | 06:15 | 1.20 | 0.00 | Dry | Start of shift |
| 21/02/2022 | 16:00 | 13.00 | 13.00 | Dry | End of shift |
| 22/02/2022 | 06:00 | 13.00 | 13.00 | Dry | Start of shift |
| 22/02/2022 | 11:30 | 14.20 | 0.00 | Dry | Hole complete |
| 25/02/2022 | 07:30 | 2.50 | 2.50 | 2.40 | Start of shift |
| 25/02/2022 | 15:14 | 15.00 | 0.00 | 11.00 | Hole complete |

## Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 14.20 | 150 | |

## Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 14.00 | 150 | |

## Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

## Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

## Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 13.60 | 14.00 | 01:00 | Chiselling. Cylinder cutter. Chisel to prove competent bedrock |
| 14.80 | 15.00 | 00:30 | Chiselling. Casing. |

## Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

## Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| 25/02/2022 | 13.50 | 13.00 | 5 | 11.00 | | |
| 25/02/2022 | 13.50 | 13.00 | 10 | 11.00 | | |
| 25/02/2022 | 13.50 | 13.00 | 15 | 11.00 | | |
| 25/02/2022 | 13.50 | 13.00 | 20 | 11.00 | | |

## Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| ICM | 1 | 0.00 | 14.00 | 70 | Plain | |

## Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 14.08 | 904 | Grout |

## Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=4 | 0.00 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | S | N=3 | 1.70 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=2 | 2.90 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | | 3.90 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 5.00 | S | N=8 | 4.50 | 4.90 | | 1 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | S | N=12 | 5.90 | Dry | | 2 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | 3 | 75 | 4 | 75 | BRW02 (AR1150) | 66 |
| 7.50 | S | N=7 | 7.40 | Dry | | 1 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 9.00 | S | N=10 | 8.90 | 7.90 | | 2 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | 2 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 10.50 | S | N=9 | 10.40 | 10.10 | | 1 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 12.00 | S | N=20 | 11.90 | Dry | | 3 | 75 | 4 | 75 | 5 | 75 | 5 | 75 | 5 | 75 | 5 | 75 | BRW02 (AR1150) | 66 |
| 13.50 | S | 60 / 125 | 13.40 | 11 | | 10 | 75 | 14 | 75 | 29 | 75 | 31 | 50 | | | | | BRW02 (AR1150) | 66 |
| 14.00 | C | 50 / 40 | 13.90 | 11.00 | | 25 | 45 | | | 50 | 40 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

bam ritchies

Borehole No: BH303
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384719.84 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399660.22 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.30 mOD | Scale: | 1:50 |
| Date Started: | 15/02/2022 | | | Log Status: | FINAL |
| Date Completed: | 16/02/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 12.55m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Dark grey slightly gravelly silty slightly clayey fine to coarse SAND (partially of ash) with rare fine to coarse gravel sized fragments of timber. Gravel is sub angular of sub rounded fine to coarse of mixed lithology including sandstone, brick and granite. [MADE GROUND] *0.30 - 0.55m : Predominantly brown* | | (1.20) | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 0.00 | ppm | | | | |
| | | 1.20 | 41.10 | 1.00 | D | | | | | | | | | | |
| MADE GROUND: Dark grey slightly gravelly silty slightly clayey fine to coarse SAND (partially of ash). Gravel is sub angular and sub rounded fine to coarse of mixed lithology including brick, clinker, sandstone and granite. [MADE GROUND ] *2.00 - 4.45m : Sub rounded cobbles of brick* | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 - 1.65 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | D-NR | | | | | | | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=7 | | | | | |
| | | | | 1.80 | D | | | | | | | | | | |
| | | | | 2.00 | ES | | | | PID | 11.70 | ppm | | | | |
| | | | | 2.00 - 2.45 | B | | | | | | | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=8 | | | | | |
| | | | | 2.70 | D | | | | | | | | | | |
| | | | | 3.00 | ES | | | | | | | | | | |
| | | (3.80) | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=23 | | | | | |
| | | | | 3.70 | D | | | | | | | | | | |
| | | | | 4.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 4.00 - 4.45 | B | | | | | | | | | | |
| | | | | 4.00 - 4.45 | D | | | | | | | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=10 | | | | | |
| | | | | 4.70 | D | | | | | | | | | | |
| MADE GROUND: Dark brownish grey very sandy very silty slightly clayey sub angular fine to coarse GRAVEL of mixed lithology. [MADE GROUND ] | | 5.00 | 37.30 | 5.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 5.00 - 5.45 | B | | | | | | | | | | |
| | | | | 5.00 - 5.45 | D | | | | | | | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=6 | | | | | |
| | | | | 5.70 | D | | | | | | | | | | |
| | | | | 6.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 6.00 - 6.45 | B | | | | | | | | | | |
| | | | | 6.00 - 6.45 | D | | | | | | | | | | |
| | | | | 6.00 - 6.45 | | | | | S | N=9 | | | | | |
| | | (3.20) | | | | | | | | | | | | | |
| | | | | 7.00 | D | | | | | | | | | | |
| | | | | 7.50 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 7.50 - 7.95 | B | | | | | | | | | | |
| | | | | 7.50 - 7.95 | D | | | | | | | | | | |
| | | | | 7.50 - 7.95 | | | | | S | N=9 | | | | | |
| Soft to firm brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium of sandstone. Sand is fine to coarse. [MADE GROUND (Possible)] | | 8.20 | 34.10 | | | | | | | | | | | | |
| | | | | 8.50 | D | | | | | | | | | | |
| | | | | 9.00 | ES | | | | | | | | | | |
| | | (3.20) | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 9.00 - 9.45 | UT-NR | 100 | | 36 | | | | | | | |
| | | | | 9.00 - 9.50 | B | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

bam ritchies

Borehole No: BH303
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384719.84 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399660.22 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.30 mOD | Scale: | 1:50 |
| Date Started: | 15/02/2022 | | | Log Status: | FINAL |
| Date Completed: | 16/02/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 12.55m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| Soft to firm brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium of sandstone. Sand is fine to coarse. [MADE GROUND (Possible)] | | | | 10.00 - 10.45 | D | | | | | | | | | | |
| | | | | 10.00 - 10.45 | | | | | S | N=12 | | | | | |
| | | | | 10.72 | EW | | | | | | | | | | |
| | | 11.40 | 30.90 | | | | | | | | | | | | |
| Extremely weak to weak thickly laminated reddish brown locally light grey MUDSTONE, recovered as stiff clay. [MANCHESTER MARL ] | | | | 11.50 | D | | | | | | | | | | |
| | | | | 11.50 - 12.00 | B | | | | | | | | | | |
| | | (1.15) | | 12.00 - 12.05 | | | | | S | 50 / 50 | | | | | |
| | | | | 12.00 - 12.45 | D | | | | | | | | | | |
| | | 12.55 | 29.75 | 12.50 - 12.55 | | | | | C | 50 / 20 | | | | | |
| Borehole Terminated at 12.55m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH303
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384719.84 mE | Checked By: | APB |
| Project No: | 326R | | 399660.22 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 42.30 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 15/02/2022 | Orientation: | - - deg. | | |
| Date Completed: | 16/02/2022 | Inclination: | 90 deg. | Final Depth: | 12.55m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | TP | 14/02/2022 | 14/02/2022 | Insulated hand digging tools | | | | Andy Bird | |
| 0.00 | 1.20 | IP | 14/02/2022 | 14/02/2022 | Hand tools | | | Chris Hewitt | | |
| 1.20 | 12.55 | CP | 16/02/2022 | 16/02/2022 | T820-068 | | | Chris Hewitt | | |
| 1.20 | 12.55 | | | | | | | | Andy Bird | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 14/02/2022 | 06:30 | 0.00 | 0.00 | Dry | Start of shift |
| 14/02/2022 | 17:00 | 10.45 | 9.00 | Dry | End of shift |
| 15/02/2022 | 06:00 | 10.45 | 9.00 | Dry | Start of shift |
| 15/02/2022 | 16:30 | 12.55 | 12.00 | Dry | End of shift |
| 16/02/2022 | 06:15 | 12.55 | 12.00 | Dry | Start of shift |
| 16/02/2022 | 13:00 | 12.55 | 0.00 | Dry | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 12.55 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 12.00 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| 2.90 | 3.70 | No sample pushed brick down |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 12.00 | 12.50 | 01:00 | Chiselling. Cylinder cutter. Chisel to prove competent bedrock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 8.50 | 50 | GasValve/ Plain | |
| SP | 1 | 8.50 | 11.00 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 8.50 | 903 | Bentonite |
| 8.50 | 11.00 | 902 | Gravel |
| 11.00 | 12.55 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=7 | 0.00 | Dry | | 1 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | S | N=8 | 1.70 | Dry | | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=23 | 2.90 | Dry | | 4 | 75 | 6 | 75 | 6 | 75 | 7 | 75 | 5 | 75 | 5 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | N=10 | 3.90 | Dry | | 2 | 75 | 2 | 75 | 3 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 5.00 | S | N=6 | 4.79 | Dry | | 2 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | 1 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | S | N=9 | 5.90 | Dry | | 2 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 7.50 | S | N=9 | 7.40 | Dry | | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 10.00 | S | N=12 | 9.00 | Dry | | 2 | 75 | 2 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 12.00 | S | 50 / 50 | 11.90 | Dry | | 25 | | | | 50 | 50 | | | | | | | BRW02 (AR1150) | 66 |
| 12.50 | C | 50 / 20 | 12.00 | Dry | | 25 | 30 | | | 50 | 20 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

Borehole No: BH304
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384618.46 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399600.49 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.18 mOD | Scale: | 1:50 |
| Date Started: | 16/02/2022 | | | Log Status: | FINAL |
| Date Completed: | 18/02/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 16.45m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Dark brown slightly clayey SILT with low rootlet content. [TOPSOIL] | | 0.10 | 41.08 | | | | | | | | | | | | |
| MADE GROUND: Dark grey brown gravelly silty fine to coarse SAND (predominantly of ash). Gravel is angular, sub angular and sub rounded fine to coarse of mixed lithology including clinker, slag, brick and sandstone. [MADE GROUND ] | | (4.40) | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 - 1.65 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=3 | | | | | |
| | | | | 1.80 | D | | | | | | | | | | |
| | | | | 2.00 | ES | | | | | | | | | | |
| | | | | 2.00 - 2.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=4 | | | | | |
| | | | | 2.70 | D | | | | | | | | | | |
| | | | | 3.00 | ES | | | | | | | | | | |
| | | | | 3.00 - 3.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=5 | | | | | |
| | | | | 3.70 | D | | | | | | | | | | |
| | | | | 4.00 | ES | | | | | | | | | | |
| | | | | 4.00 - 4.45 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 4.00 - 4.45 | D | | | | | | | | | | |
| MADE GROUND: Dark grey brown gravelly sandy CLAY. Gravel is sub angular fine to medium of mixed lithology including brick, sandstone and clinker. Sand is fine to coarse (partially of ash). [MADE GROUND] | | 4.50 | 36.68 | 4.00 - 4.45 | | | | | S | N=6 | | | | | |
| | | | | 4.70 | D | | | | | | | | | | |
| | | | | 5.00 | ES | | | | | | | | | | |
| | | | | 5.00 - 5.45 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 5.00 - 5.45 | D | | | | | | | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=5 | | | | | |
| | | (2.50) | | 5.70 | D | | | | | | | | | | |
| | | | | 6.00 | ES | | | | | | | | | | |
| | | | | 6.00 - 6.45 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 6.00 - 6.45 | D | | | | | | | | | | |
| | | | | 6.00 - 6.45 | | | | | S | N=8 | | | | | |
| MADE GROUND: Light brown and black mottled yellow brown slightly gravelly sandy CLAY with rare pockets of yellow brown silt (<20mm). Gravel is sub angular fine of sandstone . Sand is fine to coarse. [MADE GROUND] | | 7.00 | 34.18 | 7.00 | D | | | | | | | | | | |
| | | | | 7.00 | ES | | | | | | | | | | |
| | | (0.50) | | | | | | | PID | 0.10 | ppm | | | | |
| MADE GROUND: Light and reddish brown slightly gravelly silty slightly clayey fine and medium SAND. Gravel is [MADE GROUND] | | 7.50 | 33.68 | 7.50 - 7.95 | B | | | | | | | | | | |
| | | | | 7.50 - 7.95 | D | | | | | | | | | | |
| | | | | 7.50 - 7.95 | | | | | S | N=19 | | | | | |
| | | | | 8.00 | ES | | | | | | | | | | |
| | | (1.50) | | | | | | | PID | 0.10 | ppm | | | | |
| | | | | 8.50 | D | | | | | | | | | | |
| MADE GROUND: Dark grey brown slightly gravelly silty slightly clayey fine to coarse SAND (partially of ash). Gravel is sub angular and angular fine to medium of mixed lithology including clinker, burnt shale, and sandstone. [MADE GROUND] | | 9.00 | 32.18 | 9.00 | ES | | | | | | | | | | |
| | | | | 9.00 - 9.45 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 9.00 - 9.45 | D | | | | | | | | | | |
| | | | | 9.00 - 9.45 | | | | | S | N=14 | | | | | |
| | | | | 10.00 | D | | | | | | | | | | |
| | | | | 10.00 | ES | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

bam ritchies

Borehole No: BH304
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384618.46 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399600.49 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.18 mOD | Scale: | 1:50 |
| Date Started: | 16/02/2022 | | | Log Status: | FINAL |
| Date Completed: | 18/02/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 16.45m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Dark grey brown slightly gravelly silty slightly clayey fine to coarse SAND (partially of ash). Gravel is sub angular and angular fine to medium of mixed lithology including clinker, burnt shale, and sandstone. [MADE GROUND] | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 10.50 - 10.95 | B | | | | | | | | | | |
| | | | | 10.50 - 10.95 | D | | | | | | | | | | |
| | | | | 10.50 - 10.95 | | | | | S | N=11 | | | | | |
| | | | | 11.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 11.50 | D | | | | | | | | | | |
| | | | | 12.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | (5.50) | | 12.00 - 12.45 | B | | | | | | | | | | |
| | | | | 12.00 - 12.45 | D | | | | | | | | | | |
| | | | | 12.00 - 12.45 | | | | | S | N=8 | | | | | |
| | | | | 13.00 | D | | | | | | | | | | |
| | | | | 13.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| *13.50m : Gravel is fine.* | | | | | | | | | | | | | | | |
| | | | | 13.50 - 13.95 | B | | | | | | | | | | |
| | | | | 13.50 - 13.95 | D-NR | | | | | | | | | | |
| | | | | 13.50 - 13.95 | | | | | S | N=2 | | | | | |
| | | | | 14.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | 14.50 | 26.68 | 14.50 | D | | | | | | | | | | |
| Firm brown very gravelly slightly sandy CLAY with tree root remnants (<100x35mm). Gravel is sub angular fine to coarse of sandstone. Sand is fine to coarse. [ALLUVIUM ] | | | | | | | | | | | | | | | |
| | | (1.10) | | 15.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 15.00 - 15.45 | B | | | | | | | | | | |
| | | | | 15.00 - 15.45 | D-NR | | | | | | | | | | |
| | | | | 15.00 - 15.45 | | | | | S | N=14 | | | | | |
| | | 15.60 | 25.58 | 15.70 | D | | | | | | | | | | |
| Extremely weak reddish brown thinly laminated MUDSTONE. Completely weathered recovered as slightly friable gravelly stiff CLAY. Gravel is tabular, angular fine to medium of mudstone. [MANCHESTER MARL] | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | (0.85) | | 16.00 - 16.15 | | | | | S | 50 / 70 | | | | | |
| | | | | 16.00 - 16.30 | B | | | | | | | | | | |
| | | | | 16.00 - 16.30 | D | | | | | | | | | | |
| | | 16.45 | 24.73 | 16.40 - 16.45 | | | | | C | 50 / 30 | | | | | |
| Borehole Terminated at 16.45m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH304
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384618.46 mE | Checked By: | APB |
| Project No: | 326R | | 399600.49 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 41.18 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 16/02/2022 | Orientation: | - - deg. | | |
| Date Completed: | 18/02/2022 | Inclination: | 90 deg. | Final Depth: | 16.45m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 16/02/2022 | 16/02/2022 | Hand tools | | | Chris Hewitt | | |
| 0.00 | 16.45 | | | | | | | | Andy Bird | |
| 1.20 | 16.45 | CP | | 18/02/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 16/02/2022 | 13:00 | 0.00 | 0.00 | Dry | Start of shift |
| 16/02/2022 | 16:00 | 4.50 | 4.50 | Dry | End of shift |
| 17/02/2022 | 06:15 | 4.50 | 4.50 | Dry | Start of shift |
| 17/02/2022 | 15:00 | 16.45 | 16.00 | Dry | End of shift |
| 18/02/2022 | 06:15 | 16.45 | 16.00 | 16.10 | Start of shift |
| 18/02/2022 | 10:00 | 16.45 | 16.00 | Dry | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 16.45 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 16.00 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 16.00 | 16.40 | 01:00 | Chiselling. Cylinder cutter. Chisel to prove competent bedrock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 5.00 | 50 | GasValve/ Plain | |
| SP | 1 | 5.00 | 10.00 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 5.00 | 903 | Bentonite |
| 5.00 | 10.00 | 902 | Gravel |
| 10.00 | 16.45 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=3 | 0.00 | Dry | | 1 | 75 | 0 | 75 | 0 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | S | N=4 | 1.70 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=5 | 2.90 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | N=6 | 3.90 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 5.00 | S | N=5 | 4.70 | Dry | | 1 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | S | N=8 | 5.90 | Dry | | 1 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 7.50 | S | N=19 | 7.40 | Dry | | 3 | 75 | 4 | 75 | 5 | 75 | 5 | 75 | 4 | 75 | 5 | 75 | BRW02 (AR1150) | 66 |
| 9.00 | S | N=14 | 8.90 | Dry | | 2 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | 4 | 75 | 4 | 75 | BRW02 (AR1150) | 66 |
| 10.50 | S | N=11 | 10.40 | Dry | | 2 | 75 | 3 | 75 | 3 | 75 | 2 | 75 | 3 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 12.00 | S | N=8 | 11.90 | Dry | | 3 | 75 | 4 | 75 | 5 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 13.50 | S | N=2 | 13.40 | 13.20 | | 1 | 75 | 0 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 15.00 | S | N=14 | 14.90 | Dry | | 2 | 75 | 3 | 75 | 3 | 75 | 4 | 75 | 3 | 75 | 4 | 75 | BRW02 (AR1150) | 66 |
| 16.00 | S | 50 / 70 | 15.90 | Dry | | 21 | 75 | 4 | 5 | 50 | 70 | | | | | | | BRW02 (AR1150) | 66 |
| 16.40 | C | 50 / 30 | 16.30 | Dry | | 25 | 20 | | | 50 | 30 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

Borehole No: BH305
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384525.98 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399549.39 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 39.77 mOD | Scale: | 1:50 |
| Date Started: | 28/02/2022 | | | Log Status: | FINAL |
| Date Completed: | 02/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 12.03m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Black gravelly medium to coarse SAND (predominantly of ash) with low cobble content. Gravel is angular to sub-angular fine to coarse of brick burnt shale coal and clinker. Cobbles are angular to sub-angular of brick and porcelain. [MADE GROUND] | | | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 | ES | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| | | | | 1.20 - 1.65 | | | | | | N=2 | | | | | |
| | | | | 1.80 | D | | | | | | | | | | |
| | | | | 2.00 | ES | | | | | | | | | | |
| | | | | 2.00 - 2.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=2 | | | | | |
| | | | | 2.70 | D | | | | | | | | | | |
| | | | | 3.00 | ES | | | | | | | | | | |
| | | | | 3.00 - 3.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=2 | | | | | |
| | | | | 3.70 | D | | | | | | | | | | |
| | | | | 4.00 | ES | | | | | | | | | | |
| | | | | 4.00 - 4.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 4.00 - 4.45 | D | | | | | | | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=2 | | | | | |
| | | | | 4.70 | D | | | | | | | | | | |
| | | (9.80) | | 5.00 | ES | | | | | | | | | | |
| | | | | 5.00 - 5.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 5.00 - 5.45 | D | | | | | | | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=2 | | | | | |
| | | | | 5.70 | D | | | | | | | | | | |
| | | | | 6.00 | ES | | | | | | | | | | |
| | | | | 6.00 - 6.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 6.00 - 6.45 | D | | | | | | | | | | |
| | | | | 6.00 - 6.45 | | | | | S | N=3 | | | | | |
| | | | | 7.00 | D | | | | | | | | | | |
| | | | | 7.50 | ES | | | | | | | | | | |
| | | | | 7.50 - 7.95 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 7.50 - 7.95 | D | | | | | | | | | | |
| | | | | 7.50 - 7.95 | | | | | S | N=4 | | | | | |
| | | | | 8.00 | ES | | | | | | | | | | |
| | | | | 8.50 | D | | | | | | | | | | |
| *0.50m : Becoming slightly clayey.* | | | | | | | | | | | | | | | |
| *9.00m : Gravel is fine to medium.* | | | | 9.00 - 9.45 | B | | | | | | | | | | |
| | | | | 9.00 - 9.45 | D | | | | | | | | | | |
| | | | | 9.00 - 9.45 | | | | | S | N=3 | | | | | |
| MADE GROUND: Mottled orangish brown locally black | | 9.80 | 29.97 | 10.00 | D | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

Borehole No: BH305
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384525.98 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399549.39 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 39.77 mOD | Scale: | 1:50 |
| Date Started: | 28/02/2022 | | | Log Status: | FINAL |
| Date Completed: | 02/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 12.03m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| MADE GROUND: Mottled orangish brown locally black slightly gravelly sandy CLAY with rare rootlets (<8mm). Sand is fine to coarse. Gravel is sub-angular fine and medium of coal and sandstone. [MADE GROUND] | | (1.40) | | 10.50 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 10.50 - 10.95 | B | | | | | | | | | | |
| | | | | 10.50 - 10.95 | D | | | | | | | | | | |
| | | | | 10.50 - 10.95 | | | | | S | N=11 | | | | | |
| Dense orange brown slightly clayey silty fine to coarse SAND. [CHESTER PEBBLE BEDS] | | 11.20 (0.30) | 28.57 | | | | | | | | | | | | |
| | | 11.50 | 28.27 | 11.50 | D | | | | | | | | | | |
| Orangish brown medium to coarse SANDSTONE (Highly Weathered). [CHESTER PEBBLE BEDS] | | (0.53) | | 11.70 - 11.78 | | | | | C | 50 / 50 | | | | | |
| | | 12.03 | 27.74 | 12.00 - 12.03 | | | | | C | 50 / 20 | | | | | |
| Borehole Terminated at 12.03m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH305
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384525.98 mE | Checked By: | APB |
| Project No: | 326R | | 399549.39 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 39.77 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 28/02/2022 | Orientation: | - - deg. | | |
| Date Completed: | 02/03/2022 | Inclination: | 90 deg. | Final Depth: | 12.03m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 28/02/2022 | 28/02/2022 | Hand tools | | | Chris Hewitt | | |
| 1.20 | 12.03 | CP | | 01/03/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 28/02/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 28/02/2022 | 16:00 | 11.50 | 11.50 | Dry | End of shift |
| 01/03/2022 | 06:15 | 11.50 | 11.50 | 9.90 | Start of shift |
| 01/03/2022 | 11:00 | 12.03 | 12.00 | 8.50 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 12.20 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 12.00 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 11.70 | 12.00 | 01:00 | Chiselling. Shell. Chisel to prove competent bedrock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 1.00 | 50 | Plain | |
| SP | 1 | 1.00 | 10.00 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 1.00 | 903 | Bentonite |
| 1.00 | 10.00 | 902 | Gravel |
| 10.00 | 12.03 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | | N=2 | 0.00 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | S | N=2 | 1.70 | Dry | | 1 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 1 | 75 | 0 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=2 | 2.90 | Dry | | 1 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | N=2 | 3.90 | Dry | | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | BRW02 (AR1150) | 66 |
| 5.00 | S | N=2 | 4.70 | Dry | | 1 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | S | N=3 | 5.90 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 7.50 | S | N=4 | 7.40 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 9.00 | S | N=3 | 8.90 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 10.50 | S | N=11 | 10.40 | Dry | | 2 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 11.70 | C | 50 / 50 | 12.60 | 8.50 | | 25 | 30 | | | 50 | 50 | | | | | | | BRW02 (AR1150) | 66 |
| 12.00 | C | 50 / 20 | 12.00 | 8.50 | | 25 | 10 | | | 50 | 20 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

bam ritchies

Borehole No: BH306
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384520.14 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399490.63 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 31.45 mOD | Scale: | 1:50 |
| Date Started: | 15/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 15/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 6.30m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Light grey gravelly slightly sandy silty slightly clayey fine to coarse SAND of brick concrete and occasional ash with low cobble content and rare soft plastics (<40mm) ceramics (<30mm) and polystyrene (<20mm). Gravel is sub-angular to rounded fine to coarse of mixed lithologies (brick concrete and sandstone). Cobbles are sub-angular of brick (<95mm). [MADE GROUND ] | | (1.80) | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.30 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 17.20 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 | ES | | | | PID | 16.90 | ppm | | | | |
| | | | | 1.20 - 1.65 | B | | | | PID | 1.30 | ppm | | | | |
| | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| MADE GROUND: Black gravelly silty slightly clayey fine to coarse SAND (predominantly of ash) with low cobble content frequent slag (<35mm) and clods of soft clay (<60mm) (strong hydrocarbon odour noted). Gravel is angular to sub-angular fine to coarse of mixed lithologies (ash brick ad coal). Cobbles are sub-angular of brick (<75mm). [MADE GROUND ] | | 1.80 | 29.65 | 1.20 - 1.65 | | | | | S | N=4 | | | | | |
| | | | | 1.80 | D | | | | | | | | | | |
| | | | | 2.00 | ES | | | | | | | | | | |
| | | | | 2.00 - 2.45 | B | | | | PID | 2.50 | ppm | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=4 | | | | | |
| | | | | 2.70 | D | | | | | | | | | | |
| | | (2.10) | | | | | | | | | | | | | |
| | | | | 3.00 | ES | | | | | | | | | | |
| | | | | 3.00 - 3.45 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=3 | | | | | |
| | | | | 3.70 | D | | | | | | | | | | |
| Dark grey mottled orangish brown slightly gravelly sandy CLAY with fine to medium sand pockets (<40mm). Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of sandstone and mudstone. [ALLUVIUM] | | 3.90 | 27.55 | | | | | | | | | | | | |
| | | | | 4.00 | ES | | | | | | | | | | |
| | | | | 4.00 - 4.45 | B | | | | PID | 0.60 | ppm | | | | |
| | | | | 4.00 - 4.45 | D | | | | | | | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=5 | | | | | |
| | | (1.70) | | 4.70 | D | | | | | | | | | | |
| *5.00 - 5.45m : mottled black with frequent plant fragments (<30mm) (strong organic odour)* | | | | 4.91 | EW | | | | | | | | | | |
| | | | | 5.00 | ES | | | | | | | | | | |
| | | | | 5.03 | EW | | | | PID | 0.50 | ppm | | | | |
| | | | | 5.00 - 5.45 | B | | | | | | | | | | |
| | | | | 5.00 - 5.45 | D | | | | | | | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=4 | | | | | |
| Extremely weak reddish brown SANDSTONE recovered as, sub angular fine to coarse gravel. [CHESTER PEBBLE BEDS] | | 5.60 | 25.85 | | | | | | | | | | | | |
| | | (0.70) | | 6.00 | D | | | | | | | | | | |
| | | | | 6.00 - 6.02 | | | | | C | 50 / 15 | | | | | |
| Borehole Terminated at 6.30m | | 6.30 | 25.15 | 6.30 - 6.31 | | | | | C | 59 / 10 | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH306
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384520.14 mE | Checked By: | APB |
| Project No: | 326R | | 399490.63 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 31.45 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 15/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 15/03/2022 | Inclination: | 90 deg. | Final Depth: | 6.30m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 15/03/2022 | 15/03/2022 | Hand tools | | | Chris Hewitt | Ethan Richardson | |
| 0.00 | 6.50 | | | | | | | | | |
| 1.20 | 6.30 | CP | 15/03/2022 | 15/03/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 15/03/2022 | 11:40 | 0.00 | 0.00 | Dry | Start of shift |
| 15/03/2022 | 17:00 | 6.30 | 0.00 | 4.50 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 6.30 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 6.00 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 6.00 | 6.30 | 01:00 | Chiselling. Shell. Chisel to prove competent bedrock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 3.90 | 50 | Plain | |
| SP | 1 | 3.90 | 5.60 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 3.90 | 903 | Bentonite |
| 3.90 | 5.60 | 902 | Gravel |
| 5.60 | 6.30 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=4 | 0.00 | Dry | | 1 | 75 | 2 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | S | N=4 | 1.70 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=3 | 2.90 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | N=5 | 3.90 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 5.00 | S | N=4 | 4.70 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | C | 50 / 15 | 5.90 | 4.50 | | 25 | 10 | | | 50 | 15 | | | | | | | BRW02 (AR1150) | 66 |
| 6.30 | C | 59 / 10 | 6.00 | 4.50 | | 25 | 0 | | | 59 | 10 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

Borehole No: BH307
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384461.01 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399430.12 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 30.61 mOD | Scale: | 1:50 |
| Date Started: | 15/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 15/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 5.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Dark grey gravelly fine to coarse SAND of mixed lithologies (ash brick and concrete) with medium cobble content low boulder content and frequent bright green and brown ferrous slag. Gravel is angular to sub-angular fine to coarse of mixed lithologies (brick concrete and ceramics). Cobbles are angular of mixed lithologies (brick concrete and ceramics) (<150mm). Boulders are angular of concrete (<230mm). [MADE GROUND ] | | (0.50) | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | 0.50 | 30.11 | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 2.10 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 0.50 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 | ES | | | | PID | 0.30 | ppm | | | | |
| MADE GROUND: Dark grey mottled orangish brown gravelly very sandy CLAY with low cobble content and frequent coarse sand pockets (<50mm) and occasional bright green ferrous slag. Sand is fine to coarse of mixed lithologies (ash brick and concrete) Gravel is sub-angular to rounded fine to coarse of mixed lithologies (brick concrete and coal). Cobbles are sub-angular to rounded of brick and sandstone (<140mm). [MADE GROUND ] | | | | 1.20 - 1.65 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=6 | | | | | |
| | | | | 1.80 | D | | | | | | | | | | |
| | | (3.20) | | 2.00 | ES | | | | | | | | | | |
| | | | | 2.00 - 2.45 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=6 | | | | | |
| | | | | 2.70 | D | | | | | | | | | | |
| | | | | 3.00 | ES | | | | | | | | | | |
| | | | | 3.00 - 3.45 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=10 | | | | | |
| | | 3.70 | 26.91 | 3.70 | D | | | | | | | | | | |
| Extremely weak reddish brown coarse SANDSTONE., recovered as sub angular fine to coarse gravel. [CHESTER PEBBLE BEDS] | | | | 4.00 - 4.22 | | | | | S | 50 / 70 | | | | | |
| | | | | 4.00 - 4.30 | D | | | | | | | | | | |
| | | (1.30) | | | | | | | | | | | | | |
| | | | | 4.70 | D | | | | | | | | | | |
| | | | | 4.70 - 4.74 | | | | | C | 50 / 20 | | | | | |
| | | 5.00 | 25.61 | 5.00 - 5.03 | | | | | C | 50 / 20 | | | | | |
| Borehole Terminated at 5.00m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH307
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384461.01 mE | Checked By: | APB |
| Project No: | 326R | | 399430.12 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 30.61 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 15/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 15/03/2022 | Inclination: | 90 deg. | Final Depth: | 5.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 14/03/2022 | 14/03/2022 | Hand tools | | | Chris Hewitt | Ethan Richardson | |
| 0.00 | 5.00 | | | | | | | | | |
| 1.20 | 5.00 | CP | | 15/03/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 14/03/2022 | 14:00 | 0.00 | 0.00 | Dry | Start of shift |
| 14/03/2022 | 17:00 | 3.50 | 3.50 | Dry | End of shift |
| 15/03/2022 | 06:15 | 3.50 | 3.50 | Dry | Start of shift |
| 15/03/2022 | 11:30 | 5.00 | 0.00 | 3.00 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.70 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 4.70 | 5.00 | 01:00 | Chiselling. Shell. Chisel to prove competent bed rock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 0.50 | 50 | Plain | |
| SP | 1 | 0.50 | 2.50 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.20 | 910 | Flush cover |
| 0.20 | 0.50 | 903 | Bentonite |
| 0.50 | 2.50 | 902 | Gravel |
| 2.50 | 5.00 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=6 | 0.00 | Dry | | 1 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | 1 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | S | N=6 | 1.70 | Dry | | 1 | 75 | 2 | 75 | 1 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=10 | 2.90 | Dry | | 2 | 75 | 2 | 75 | 3 | 75 | 2 | 75 | 3 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | 50 / 70 | 3.90 | | | 6 | 75 | 8 | 75 | 50 | 70 | | | | | | | BRW02 (AR1150) | 66 |
| 4.70 | C | 50 / 20 | 4.70 | 3.00 | | 25 | 20 | | | 50 | 20 | | | | | | | BRW02 (AR1150) | 66 |
| 5.00 | C | 50 / 20 | 4.70 | 3.00 | | 25 | 10 | | | 50 | 20 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

bam ritchies

Borehole No: BH308
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384473.67 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399399.76 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 30.20 mOD | Scale: | 1:50 |
| Date Started: | 14/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 14/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 7.40m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| MADE GROUND: Light brown very gravelly coarse SAND of brick and concrete with high cobble content and hard and soft plastics (<320mm). Gravel is angular to sub-angular fine to coarse of mixed lithologies (brick concrete and sandstone mortar). Cobbles are angular of mixed lithologies (brick concrete and slag) (<120mm). [MADE GROUND ] | | (0.50) | | 0.30 | B | | | | | | | | | | |
| | | 0.50 | 29.70 | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.20 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| MADE GROUND: Black gravelly fine to coarse SAND (predominantly of ash) with low cobble content. Gravel is sub-angular to sub-rounded fine to coarse of ash coal and sandstone. Cobbles are sub-rounded of sandstone. [MADE GROUND ] | | (1.12) | | 1.00 | B | | | | PID | 0.80 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 - 1.62 | | | | | PID C | 9.30 N=32 | ppm | | | | |
| | | 1.62 | 28.58 | | | | | | | | | | | ▼ | |
| Void: Disused former brick lined chamber. | | | | | | | | | | | | | | | |
| | | (5.78) | | | | | | | | | | | | | |
| Borehole Terminated at 7.40m | | 7.40 | 22.80 | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH308
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384473.67 mE | Checked By: | APB |
| Project No: | 326R | | 399399.76 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 30.20 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 14/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 14/03/2022 | Inclination: | 90 deg. | Final Depth: | 7.40m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 14/03/2022 | 14/03/2022 | Hand tools | | | Chris Hewitt | Ethan Richardson | BH terminated upon exposing former brick lined chamber. |
| 0.00 | 7.40 | | | | | | | | | |
| 1.20 | 7.40 | CP | 14/03/2022 | 14/03/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 14/03/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 14/03/2022 | 13:00 | 7.40 | 1.50 | 3.10 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 7.40 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 1.50 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | C | N=32 | 0.00 | Dry | | 14 | 75 | 11 | 45 | 17 | 75 | 15 | 75 | 0 | 75 | 0 | 75 | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Disused former brick lined chamber

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

Borehole No: BH309
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | RC |
| Project No: | 326R | Co-ordinates: | 384863.87 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399641.32 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 30.50 mOD | Scale: | 1:50 |
| Date Started: | 29/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 30/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 11.50m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tarmac (drillers description). [MADE GROUND] | | (0.30) | | | | | | | | | | | | | |
| MADE GROUND: Dark brown gravelly slightly clayey fine to coarse SAND with low cobble content and clods of clay (<55mm). Gravel is angular to sub-rounded fine to coarse of mixed lithologies (brick, porcelain and sandstone). Cobbles are sub-angular to sub-rounded of sandstone (<125mm). [MADE GROUND] | | 0.30 | 30.20 | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | | | | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | (1.50) | | 1.00 | B | | | | PID | 0.40 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 | ES | | | | PID | 0.10 | ppm | | | | |
| *0.30 - 0.40m : York stone (drillers description)* | | | | 1.20 - 1.65 | B | | | | PID | 0.00 | ppm | | | | |
| *1.00m : Gravel is fine to medium. No cobble content noted.* | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=7 | | | | | |
| | | 1.80 | 28.70 | 1.80 | D | | | | | | | | | | |
| MADE GROUND: Dark brown slightly gravelly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of mixed lithologies (brick, sandstone and coal). Cobbles are sub-rounded of sandstone (<110mm). [MADE GROUND] | | | | 2.00 | ES | | | | | | | | | | |
| | | | | 2.00 - 2.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=4 | | | | | |
| | | | | 2.70 | D | | | | | | | | | | |
| | | (2.10) | | | | | | | | | | | | | |
| *3.00 - 3.90m : high cobble content* | | | | 3.00 | ES | | | | | | | | | | |
| | | | | 3.00 - 3.45 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 3.00 - 3.45 | D-NR | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=1 | | | | | |
| | | | | 3.70 | D | | | | | | | | | | |
| Extremely weak reddish brown coarse grained SANDSTONE. Highly weathered occasionally recovered as loose to medium dense sand. Bedding: 0-15Â° closely to widely spaced planar rough. Joints: 35-55Â° closely to widely spaced planar rough. [COLLYHURST SANDSTONE] | | 3.90 | 26.60 | | | | | | | | | | | | |
| | | | | 4.00 - 4.23 | | | | | S | 51 / 80 | | | | | |
| | | | | 4.00 - 4.40 | D | | | | | | | | | | |
| | | | | 5.00 - 5.01 | | | | | C | 50 / 10 | | | | | |
| *5.00 - 7.00m : Frequently recovered as loose sand.* | | | | | | | | | | | | 100 | | | |
| | | | | 5.00 - 5.50 | C | | | | | | | 80 | | | |
| | | | | 5.00 - 5.50 | RC | 146 | | | | | | 0 | | | |
| | | | | | | | | | | | | | NI 25 70 | | |
| | | | | | | | | | | | | 66 | | | |
| | | | | 5.50 - 7.00 | C | | | | | | | 50 | | | |
| | | | | 5.50 - 7.00 | RC | 146 | | | | | | 0 | | | |
| | | (7.60) | | 7.00 - 7.02 | | | | | C | 50 / 10 | | | | | |
| | | | | | | | | | | | | 100 | | | |
| | | | | 7.00 - 7.75 | C | | | | | | | 100 | | | |
| | | | | 7.00 - 7.75 | RC | 146 | | | | | | 86 | | | |
| | | | | | | | | | | | | 100 | | | |
| | | | | 7.75 - 8.50 | C | | | | | | | 66 | | | |
| | | | | 7.75 - 8.50 | RC | 146 | | | | | | 54 | | | |
| | | | | | | | | | | | | | NI 18 61 | | |
| | | | | | | | | | | | | 100 | | | |
| | | | | 8.50 - 10.00 | C | | | | | | | 96 | | | |
| | | | | 8.50 - 10.00 | RC | 146 | | | | | | 75 | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

Borehole No: BH309
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | RC |
| Project No: | 326R | Co-ordinates: | 384863.87 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399641.32 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 30.50 mOD | Scale: | 1:50 |
| Date Started: | 29/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 30/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 11.50m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Extremely weak reddish brown coarse grained SANDSTONE. Highly weathered occasionally recovered as loose to medium dense sand. Bedding: 0-15Â° closely to widely spaced planar rough. Joints: 35-55Â° closely to widely spaced planar rough.<br>[COLLYHURST SANDSTONE] | | | | 10.00 - 11.50<br>10.00 - 11.50 | C<br>RC | 146 | | | | | | 100<br>83<br>26 | | | |
| | | 11.50 | 19.00 | | | | | | | | | | | | |
| Borehole Terminated at 11.50m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH309
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | RC |
| | | Co-ordinates: | 384863.87 mE | Checked By: | APB |
| Project No: | 326R | | 399641.32 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 30.50 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 29/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 30/03/2022 | Inclination: | 90 deg. | Final Depth: | 11.50m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 29/03/2022 | 29/03/2022 | Hand tools | | | Chris Hewitt | | |
| 0.00 | 11.50 | | | | | | | | Ethan Richardson | |
| 1.20 | 11.50 | RC | | 30/03/2022 | 1121 | Geobore S | PCD | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 29/03/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 29/03/2022 | 14:00 | 5.00 | 4.70 | 3.50 | Start of shift |
| 29/03/2022 | 15:00 | 5.00 | 4.70 | 3.50 | End of shift |
| 29/03/2022 | 16:30 | 5.00 | 4.70 | 3.50 | End of shift |
| 30/03/2022 | 06:15 | 5.00 | 4.70 | 4.50 | Start of shift |
| 30/03/2022 | 16:00 | 11.50 | 0.00 | 4.00 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 200 | |
| 11.50 | 146 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.70 | 200 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 4.70 | 5.00 | 01:00 | Chiselling. Shell. Chisel to prove competent bedrock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 5.00 | 5.50 | 100 - 100 | Polymer | Red |
| 5.50 | 7.00 | 100 - 100 | Polymer | Red |
| 7.00 | 7.75 | 100 - 100 | Polymer | Red |
| 7.75 | 8.50 | 100 - 100 | Polymer | Red |
| 8.50 | 10.00 | 100 - 100 | Polymer | Red |
| 10.00 | 11.50 | 100 - 100 | Polymer | Red |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 7.00 | 50 | Plain | |
| SP | 1 | 7.00 | 11.50 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 7.00 | 903 | Bentonite |
| 7.00 | 11.50 | 902 | Gravel |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=7 | 0.00 | Dry | | 2 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | S | N=4 | 1.70 | Dry | | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=1 | 2.90 | Dry | | 1 | 75 | 3 | 75 | 1 | 75 | 0 | 75 | 0 | 75 | 0 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | 51 / 80 | 3.90 | Dry | | 10 | 75 | 15 | 75 | 32 | 75 | 19 | 5 | | | | | BRW02 (AR1150) | 66 |
| 5.00 | C | 50 / 10 | 4.70 | 3.50 | | 25 | 5 | | | 50 | 10 | | | | | | | BRW02 (AR1150) | 66 |
| 7.00 | C | 50 / 10 | 6.80 | 4.00 | | 25 | 5 | | | 50 | 10 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




BH309: 5.00-8.50m

bam ritchies

# Borehole Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI




BH309_8.50-11.50m

# BOREHOLE LOG

bam ritchies

Borehole No: BH310
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | RC |
| Project No: | 326R | Co-ordinates: | 384838.09 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399638.18 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 32.60 mOD | Scale: | 1:50 |
| Date Started: | 22/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 23/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 16.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Topsoil (drillers description). [TOPSOIL] | | 0.10 | 32.50 | | | | | | | | | | | | |
| MADE GROUND: Orangish brown slightly gravelly fine to coarse SAND (locally of ash) with occasional rootlets (<25mm). Gravel is sub-angular to rounded fine to coarse of sandstone locally of coal and brick. Cobbles are localised sub-rounded of sandstone (<115mm). [MADE GROUND] | | (1.60) | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 | ES | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | D | | | | PID | 0.40 | ppm | | | | |
| MADE GROUND: Dark grey gravelly silty slightly clayey fine to coarse SAND (predominantly of ash) with occasional woody fragments (<60mm). Gravel is angular to sub-angular fine to coarse of mixed lithologies (brick, mudstone and coal). [MADE GROUND] | | 1.70 | 30.90 | 1.20 - 1.65 | | | | | S | N=2 | | | | | |
| | | | | 1.50 | D | | | | | | | | | | |
| | | | | 1.20 - 2.00 | Liner | | | | | | | | | | |
| | | | | 1.80 | ES | | | | | | | | | | |
| | | | | 1.90 | D | | | | PID | 0.90 | ppm | | | | |
| | | (1.20) | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=2 | | | | | |
| | | | | 2.00 - 2.50 | B | | | | | | | | | | |
| | | | | 2.00 - 3.00 | Liner | | | | | | | | | | |
| | | | | 2.50 | ES | | | | | | | | | | |
| MADE GROUND: Orangish brown slightly gravelly fine to coarse SAND. Gravel is angular to sub-rounded fine to coarse of brick, concrete and sandstone. [MADE GROUND] | | 2.90 | 29.70 | 2.60 | D | | | | PID | 2.80 | ppm | | | | |
| | | (0.45) | | 3.00 | ES | | | | | | | | | | |
| | | | | 3.00 - 3.45 | D | | | | PID | 1.20 | ppm | | | | |
| | | 3.35 | 29.25 | 3.00 - 3.45 | | | | | S | N=0 | | | | | |
| MADE GROUND: Orangish brown slightly gravelly sandy CLAY with occasional tree root remnants (<130mm). Sand is fine to coarse. Gravel is sub-angular fine and medium of coal brick coal and sandstone. [MADE GROUND] | | (0.55) | | 3.40 | ES | | | | | | | | | | |
| | | | | 3.00 - 4.00 | Liner | | | | PID | 0.80 | ppm | | | | |
| | | | | 3.50 | D | | | | | | | | | | |
| | | 3.90 | 28.70 | 2.30 - 4.90 | | | | | Falling Head | 3.3E-005 | m/s | | | | |
| Medium dense orangish brown slightly clayey fine to coarse SAND (weak hydrocarbon odour noted). [ALLUVIUM] | | | | 3.60 - 3.90 | B | | | | | | | | | | |
| | | | | 4.20 | ES | | | | | | | | | | |
| | | | | 4.00 - 4.45 | D | | | | PID | 132.40 | ppm | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=0 | | | | | |
| | | | | 4.30 | EW | | | | | | | | | | |
| | | (1.65) | | 4.40 | D | | | | | | | | | | |
| | | | | 4.43 | EW | | | | | | | | | | |
| | | | | 4.00 - 5.00 | Liner | | | | | | | | | | |
| | | | | 4.50 | | | | | HV | P36,R30 | kPa | | | | |
| | | | | 4.70 | | | | | HV | P22,R10 | kPa | | | | |
| | | | | 4.60 - 4.90 | B | | | | | | | | | | |
| | | | | 4.90 | | | | | HV | P38,R22 | kPa | | | | |
| Orangish brown fine to coarse SAND and sub-angular to sub-rounded medium to coarse GRAVEL of sandstone. [ALLUVIUM] | | 5.55 | 27.05 | 5.20 | ES | | | | | | | | | | |
| | | (0.45) | | | | | | | PID | 137.90 | ppm | | | | |
| | | | | 5.00 - 5.45 | | | | | C | N=27 | | | | | |
| | | 6.00 | 26.60 | 5.40 | D | | | | | | | | | | |
| Extremely weak reddish brown medium grained SANDSTONE. Bedding 10 to 20 degrees closely locally widely spaced planar smooth. [COLLYHURST SANDSTONE] | | | | 5.00 - 6.00 | Liner | | | | | | | | | | |
| | | | | 5.60 | D | | | | | | | | | | |
| | | | | 6.00 - 7.00 | RC | 146 | | | | | | 0<br>0<br>0 | | | |
| *6.00 - 10.00m : Distinctly weathered recovered as, fine to coarse sand.* | | | | 7.00 - 7.06 | | | | | C | 50 / 30 | | | | | |
| | | | | 7.00 - 7.75 | RC | 146 | | | | | | 13<br>13<br>13 | | | |
| | | | | 7.75 - 8.50 | C | | | | | | | 100<br>100 | | | |
| | | | | 7.75 - 8.50 | RC | 146 | | | | | | 100 | | | |
| | | | | 8.50 - 8.52 | | | | | C | 50 / 10 | | | | | |
| | | | | 8.50 - 9.25 | RC | 146 | | | | | | 53<br>53<br>53 | | | |
| | | | | 9.25 - 10.00 | C | | | | | | | 100<br>100 | | | |
| | | | | 9.25 - 10.00 | RC | 146 | | | | | | 100 | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

bam ritchies

Borehole No: BH310
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | RC |
| | | Co-ordinates: | 384838.09 mE | Checked By: | APB |
| Project No: | 326R | | 399638.18 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 32.60 mOD | Scale: | 1:50 |
| Engineer: | ARUP | | | Log Status: | FINAL |
| Date Started: | 22/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| Date Completed: | 23/03/2022 | Inclination: | 90 deg. | Final Depth: | 16.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Extremely weak reddish brown medium grained SANDSTONE. Bedding 10 to 20 degrees closely locally widely spaced planar smooth. [COLLYHURST SANDSTONE] | | | | 10.00 - 10.02 | | | | | C | 50 / 10 | | 100 | | | |
| | | | | 10.00 - 10.75 | C | | | | | | | 100 | | | |
| | | | | 10.00 - 10.75 | RC | 146 | | | | | | 100 | | | |
| | | | | 10.75 - 11.50 | C | | | | | | | 86 | | | |
| | | | | 10.75 - 11.50 | RC | 146 | | | | | | 86 | | | |
| | | | | 11.50 - 13.00 | RC | 146 | | | | | | 0 | | | |
| | | | | | | | | | | | | 0 | | | |
| | | (10.00) | | 13.00 - 13.00 | | | | | C | 50 / 5 | | 0 | | | |
| | | | | 13.00 - 14.50 | C | | | | | | | 100 | | | |
| | | | | 13.00 - 14.50 | RC | 146 | | | | | | 100 | | | |
| | | | | 14.50 - 16.00 | C | | | | | | | 100 | | | |
| | | | | 14.50 - 16.00 | RC | 146 | | | | | | 100 | | | |
| Borehole Terminated at 16.00m | | 16.00 | 16.60 | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH310
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | RC |
| | | Co-ordinates: | 384838.09 mE | Checked By: | APB |
| Project No: | 326R | | 399638.18 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 32.60 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 22/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 23/03/2022 | Inclination: | 90 deg. | Final Depth: | 16.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 22/03/2022 | 22/03/2022 | Hand tools | | | Chris Hewitt | Ethan Richardson | |
| 0.00 | 16.00 | | | | | | | | | |
| 1.20 | 16.00 | RC | | 23/03/2022 | 1121 | Geobore | PDC | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 22/03/2022 | 13:00 | 0.00 | 0.00 | Dry | Start of shift |
| 22/03/2022 | 16:15 | 6.00 | 0.00 | 4.50 | End of shift |
| 23/03/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 23/03/2022 | 16:30 | 16.00 | 0.00 | 0.50 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 87 | |
| 6.00 | 78 | |
| 6.00 | 150 | |
| 16.00 | 146 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.00 | 78 | |
| 4.00 | 87 | |
| 5.50 | 150 | |
| 16.00 | 146 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 6.00 | 7.00 | 100 - 100 | Polymer | Red |
| 7.00 | 7.75 | 100 - 100 | Polymer | Red |
| 7.75 | 8.50 | 100 - 100 | Polymer | Red |
| 8.50 | 9.25 | 100 - 100 | Polymer | Red |
| 9.25 | 10.00 | 100 - 100 | Polymer | Red |
| 10.00 | 10.75 | 100 - 100 | Polymer | Red |
| 10.75 | 11.50 | 100 - 100 | Polymer | Red |
| 11.50 | 13.00 | 100 - 100 | Polymer | Red |
| 13.00 | 14.50 | 100 - 100 | Polymer | Red |
| 14.50 | 16.00 | 100 - 100 | Polymer | Red |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| 22/03/2022 | 4.90 | 4.00 | 5 | 4.70 | | |
| 22/03/2022 | 4.90 | 4.00 | 10 | 4.60 | | |
| 22/03/2022 | 4.90 | 4.00 | 15 | 4.50 | | |
| 22/03/2022 | 4.90 | 4.00 | 20 | 4.50 | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 8.00 | 50 | Plain | |
| SP | 1 | 8.00 | 16.00 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 8.00 | 903 | Bentonite |
| 8.00 | 16.00 | 902 | Gravel |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=2 | 0.00 | Dry | | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 0 | 75 | 1 | 75 | T820-773 (DART457) | 63 |
| 2.00 | S | N=2 | 2.00 | Dry | | 1 | 75 | 0 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | T820-773 (DART457) | 63 |
| 3.00 | S | N=0 | 3.00 | Dry | | 1 | 75 | 2 | 75 | 0 | 75 | 0 | 75 | 0 | 75 | 0 | 75 | T820-773 (DART457) | 63 |
| 4.00 | S | N=0 | 4.00 | Dry | | 1 | 75 | 0 | 75 | 0 | 75 | 0 | 75 | 0 | 75 | 0 | 75 | T820-773 (DART457) | 63 |
| 5.00 | C | N=27 | 4.00 | Dry | | 5 | 75 | 7 | 75 | 8 | 75 | 9 | 75 | 9 | 75 | 1 | 75 | T820-773 (DART457) | 63 |
| 7.00 | C | 50 / 30 | 7.00 | 0.50 | | 25 | 30 | | | 50 | 30 | | | | | | | BRW02 (AR1150) | 66 |
| 8.50 | C | 50 / 10 | 8.30 | 0.50 | | 25 | 10 | | | 50 | 10 | | | | | | | BRW02 (AR1150) | 66 |
| 10.00 | C | 50 / 10 | 9.80 | 0.50 | | 25 | 15 | | | 50 | 10 | | | | | | | BRW02 (AR1150) | 66 |
| 13.00 | C | 50 / 5 | 12.80 | 0.50 | | 25 | 0 | | | 50 | 5 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# Water permeability test in a borehole using open systems

Carried out in accordance with BS EN ISO 22282-2:2012. Permeability calculated using the Velocity Graph Method.

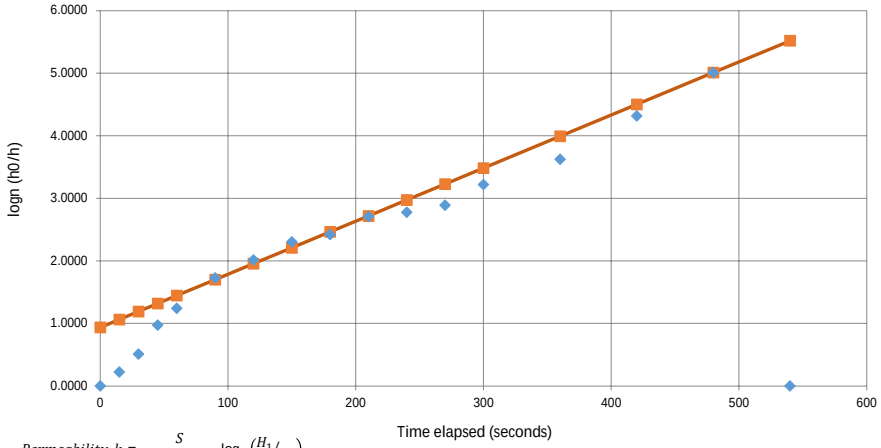
Borehole number: **BH310**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project name: | Victoria north | | Survey grid system: | OSGB | | Hole type: | CP |
| Project number: | 326R | | Co-ordinates: | 384838.09 | mE | Checked by: | APB |
| Client: | BAM Nuttall | | | 399638.18 | mN | Approved by: | JH |
| Engineer: | Andy Bird | | Ground level: | 32.60 | mOD | | |
| Date of test: | 22/03/2022 14:45 | | Test reference: | 1 | | Weather: | Sunny |
| Test type: | Falling Head | | L/D Ratio | 17.33 | | Groundwater before: | 4.50 m bgl |
| Response zone top: | 2.30 | m bgl | Test Condition: | Cylindrical cavity with: L/D > 10 | | Assumed groundwater level: | 4.50 m bgl |
| Reponse zone base: | 4.90 | m bgl | Intake Factor (F): | 4.61 | | Water added: | 50 l |
| Test section diameter: | 150 | mm | Casing above GL: | 0.00 | m agl | Filter material: | None |
| | | | Hole depth after test: | 4.50 | m bgl | Water level start of test: | 0.00 m bgl |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| Seconds, s | m bgl | m | - |
| 0 | 0.00 | 4.50 | 1.000 |
| 15 | 0.90 | 3.60 | 1.250 |
| 30 | 1.80 | 2.70 | 1.667 |
| 45 | 2.80 | 1.70 | 2.647 |
| 60 | 3.20 | 1.30 | 3.462 |
| 90 | 3.70 | 0.80 | 5.625 |
| 120 | 3.90 | 0.60 | 7.500 |
| 150 | 4.05 | 0.45 | 10.000 |
| 180 | 4.10 | 0.40 | 11.250 |
| 210 | 4.20 | 0.30 | 15.000 |
| 240 | 4.22 | 0.28 | 16.071 |
| 270 | 4.25 | 0.25 | 18.000 |
| 300 | 4.32 | 0.18 | 25.000 |
| 360 | 4.38 | 0.12 | 37.500 |
| 420 | 4.44 | 0.06 | 75.000 |
| 480 | 4.47 | 0.03 | 150.000 |
| 540 | 4.50 | 0.00 | |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| s | m bgl | m | - |




$$Permeability, k = \frac{S}{F\,(t_2 - t_1)} \log_e \left({}^{H_1}/_{H_2}\right)$$

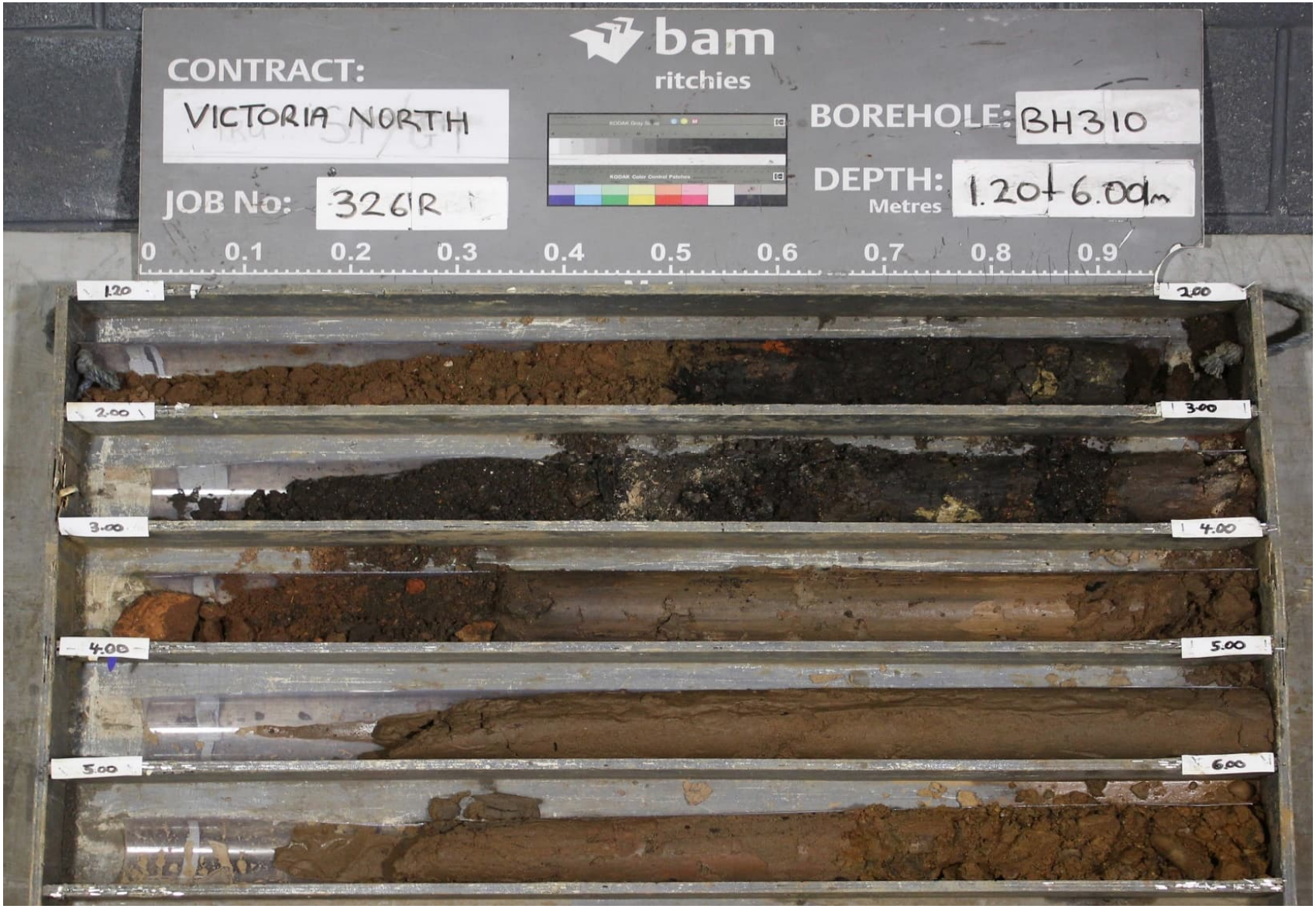
$$k = \alpha \frac{S}{F}$$

**S=** 0.017671 m2

**k =** **3.26E-05** m/s

Comments:

Partially saturated response zone, results should be used with caution.




BH310: 1.20-6.00m

bam ritchies

# Borehole Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI




BH310_6.00-10.00m




BH310_10.00-13.00m




BH310_13.00-16.00m

# BOREHOLE LOG

Borehole No: BH311
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384411.70 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399557.68 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 46.20 mOD | Scale: | 1:50 |
| Date Started: | 08/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 09/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 17.32m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tarmac (Drillers description) [MADE GROUND] | | 0.20 | 46.00 | 0.30 | B | | | | | | | | | | |
| MADE GROUND: Light grey very sandy subrounded coarse GRAVEL of limestone. Sand is coarse. [TYPE 1 SUB BASE] | | 0.45 | 45.75 | 0.30 | D | | | | | | | | | | |
| | | (0.55) | | 0.30 | ES | | | | | | | | | | |
| MADE GROUND: Multicoloured slightly gravelly slightly sandy CLAY with medium cobble content. Sand is fine and medium. Gravel sized fragments are angular to subrounded fine to coarse of sandstone carbonaceous mudstone coal brick concrete and ceramic. Cobbles are angular of brick . [MADE GROUND] | | 1.00 | 45.20 | 0.50 | B | | | | | | | | | | |
| | | 1.20 | 45.00 | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | | | | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 | ES | | | | | | | | | | |
| | | | | 1.20 - 1.65 | B | | | | | | | | | | |
| | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| MADE GROUND: Black slightly sandy gravelly CLAY with medium cobble content. Sand is fine to coarse. Gravel is angular to sub-rounded of sandstone carbonaceous mudstone coal brick concrete and glass. Cobbles are angular of sandstone and brick. [MADE GROUND] | | | | 1.20 - 1.65 | | | | | S | N=10 | | | | | |
| | | | | 1.80 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | UT | 100 | 90 | 95 | | | | | | | |
| | | | | 2.45 - 2.50 | D | | | | | | | | | | |
| MADE GROUND: Very closely fissured brown mottled black and reddish brown slightly gravelly slightly sandy CLAY with pockets of light grey coarse grained sand (<35mm). Sand is fine to coarse. Gravel sized fragments are fine to coarse of sandstone mudstone coal and brick. [MADE GROUND] | | (3.25) | | 3.00 | ES | | | | | | | | | | |
| | | | | 3.00 - 3.45 | B | | | | | | | | | | |
| | | | | 3.00 - 3.45 | D-NR | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=12 | | | | | |
| | | | | 3.70 | D | | | | | | | | | | |
| | | | | 4.00 - 4.45 | UT | 100 | 90 | 86 | | | | | | | |
| Very stiff dark brown slightly gravelly slightly sandy CLAY. Gravel is subangular fine and medium of sandstone mudstone and coal. Sand is fine to coarse. [GLACIAL TILL] | | 4.45 | 41.75 | 4.45 - 4.50 | D | | | | | | | | | | |
| | | | | 5.00 | ES | | | | | | | | | | |
| | | | | 5.00 - 5.45 | B | | | | | | | | | | |
| | | | | 5.00 - 5.45 | D | | | | | | | | | | |
| | | (2.00) | | 5.00 - 5.45 | | | | | S | N=22 | | | | | |
| | | | | 5.70 | D | | | | | | | | | | |
| | | | | 6.00 | | | | | PP | 286 | kPa | | | | |
| | | | | 6.00 | | | | | PP | 312 | kPa | | | | |
| | | | | 6.00 | | | | | PP | 320 | kPa | | | | |
| | | | | 6.00 - 6.45 | UT | 100 | 80 | 85 | | | | | | | |
| Very stiff orangish brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular fine and medium of sandstone mudstone and coal. [GLACIAL TILL] | | 6.45 | 39.75 | 6.45 - 6.50 | D | | | | | | | | | | |
| | | (1.95) | | 7.50 | ES | | | | | | | | | | |
| | | | | 7.50 - 7.85 | | | | | S | 50 / 200 | | | | | |
| | | | | 7.50 - 7.95 | B | | | | | | | | | | |
| | | | | 7.50 - 7.95 | D | | | | | | | | | | |
| Very dense orangish brown slightly gravelly medium and coarse grained SAND. Gravel is fine and medium of coal. [GLACIAL TILL] | | 8.40 | 37.80 | 8.50 | D | | | | | | | | | | |
| | | (3.00) | | 9.00 - 9.45 | B | | | | | | | | | | |
| | | | | 9.00 - 9.45 | D | | | | | | | | | | |
| | | | | 9.00 - 9.45 | | | | | S | N=33 | | | | | |
| | | | | 10.00 | D | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

bam ritchies

Borehole No: BH311
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384411.70 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399557.68 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 46.20 mOD | Scale: | 1:50 |
| Date Started: | 08/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 09/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 17.32m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Very dense orangish brown slightly gravelly medium and coarse grained SAND. Gravel is fine and medium of coal. [GLACIAL TILL] | | | | 10.50 - 10.95 | B | | | | | | | | | | |
| | | | | 10.50 - 10.95 | D | | | | | | | | | | |
| | | | | 10.50 - 10.95 | | | | | S | N=25 | | | | | |
| | | 11.40 | 34.80 | | | | | | | | | | | | |
| Dark brownish grey sandy slightly clayey SILT. [GLACIAL TILL] | | | | 11.50 | D | | | | | | | | | | |
| | | | | 12.00 - 12.45 | B | | | | | | | | | | |
| | | | | 12.00 - 12.45 | D-NR | | | | | | | | | | |
| | | | | 12.00 - 12.45 | | | | | S | N=25 | | | | | |
| | | (3.30) | | 13.00 | D | | | | | | | | | | |
| | | | | 13.50 - 13.95 | B | | | | | | | | | | |
| | | | | 13.50 - 13.95 | D | | | | | | | | | | |
| | | | | 13.50 - 13.95 | | | | | S | N=40 | | | | | |
| | | | | 14.50 | D | | | | | | | | | | |
| | | 14.70 | 31.50 | | | | | | | | | | | | |
| Multicoloured very sandy subangular to subrounded fine to coarse GRAVEL of sandstone and quartzite with high cobble content. Sand is fine to coarse. Cobbles are subrounded of sandstone. [GLACIAL TILL] | | | | 15.00 - 15.45 | B | | | | | | | | | | |
| | | | | 15.00 - 15.45 | | | | | C | N=42 | | | | | |
| | | (2.10) | | 16.00 | D | | | | | | | | | | |
| | | | | 16.50 - 16.92 | | | | | C | 50 / 265 | | | | | |
| | | 16.80 | 29.40 | 16.50 - 16.95 | B | | | | | | | | | | |
| Extremely weak highly weathered reddish brown coarse grained SANDSTONE. [CHESTER PEBBLE BEDS] | | | | 17.00 | D | | | | | | | | | | |
| | | (0.52) | | 17.00 - 17.07 | | | | | C | 50 / 40 | | | | | |
| | | 17.32 | 28.88 | 17.30 - 17.32 | | | | | C | 50 / 10 | | | | | |
| Borehole Terminated at 17.32m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH311
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384411.70 mE | Checked By: | APB |
| Project No: | 326R | | 399557.68 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 46.20 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 08/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 09/03/2022 | Inclination: | 90 deg. | Final Depth: | 17.32m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 08/03/2022 | 08/03/2022 | Hand tools | | | Chris Hewitt | Ethan Richardson | |
| 0.00 | 17.50 | | | | | | | | | |
| 1.20 | 17.32 | CP | | 09/03/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 08/03/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 08/03/2022 | 17:00 | 9.50 | 9.00 | Dry | End of shift |
| 09/03/2022 | 06:15 | 9.50 | 9.00 | 7.20 | Start of shift |
| 09/03/2022 | 17:00 | 17.32 | 0.00 | 12.20 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 200 | |
| 27.50 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.70 | 200 | |
| 17.30 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 17.00 | 17.30 | 01:00 | Chiselling. Shell. Chisel to prove competent bedrock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 9.00 | 50 | Plain | |
| SP | 1 | 9.00 | 16.00 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 9.00 | 903 | Bentonite |
| 9.00 | 16.00 | 902 | Gravel |
| 16.00 | 17.32 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=10 | 0.00 | Dry | | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=12 | 2.90 | Dry | | 2 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 5.00 | S | N=22 | 4.70 | Dry | | 1 | 75 | 4 | 75 | 4 | 75 | 5 | 75 | 6 | 75 | 7 | 75 | BRW02 (AR1150) | 66 |
| 7.50 | S | 50 / 200 | 7.40 | Dry | | 10 | 75 | 11 | 75 | 14 | 75 | 17 | 75 | 19 | 50 | | | BRW02 (AR1150) | 66 |
| 9.00 | S | N=33 | 8.90 | Dry | | 5 | 75 | 6 | 75 | 8 | 75 | 8 | 75 | 8 | 75 | 9 | 75 | BRW02 (AR1150) | 66 |
| 10.50 | S | N=25 | 10.40 | 8.00 | | 2 | 75 | 4 | 75 | 5 | 75 | 5 | 75 | 7 | 75 | 8 | 75 | BRW02 (AR1150) | 66 |
| 12.00 | S | N=25 | 11.90 | 8.30 | | 3 | 75 | 4 | 75 | 5 | 75 | 5 | 75 | 7 | 75 | 8 | 75 | BRW02 (AR1150) | 66 |
| 13.50 | S | N=40 | 13.40 | 8.90 | | 4 | 75 | 5 | 75 | 7 | 75 | 7 | 75 | 11 | 75 | 15 | 75 | BRW02 (AR1150) | 66 |
| 15.00 | C | N=42 | 14.90 | 10.70 | | 5 | 75 | 6 | 75 | 8 | 75 | 10 | 75 | 11 | 75 | 13 | 75 | BRW02 (AR1150) | 66 |
| 16.50 | C | 50 / 265 | 16.40 | 11.10 | | 5 | 75 | 7 | 75 | 10 | 75 | 11 | 75 | 15 | 75 | 14 | 40 | BRW02 (AR1150) | 66 |
| 17.00 | C | 50 / 40 | 16.90 | 11.20 | | 25 | 25 | | | 50 | 40 | | | | | | | BRW02 (AR1150) | 66 |
| 17.30 | C | 50 / 10 | 17.30 | 12.20 | | 25 | 10 | | | 50 | 10 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

Borehole No: BH311A
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384415.00 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399556.82 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 45.89 mOD | Scale: | 1:50 |
| Date Started: | 05/07/2022 | | | Log Status: | FINAL |
| Date Completed: | 05/07/2022 | Orientation: | deg. | Print Date: | 31/10/2022 |
| | | Inclination: | deg. | Final Depth: | 6.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| Sand brick rubble fill (Drillers description)<br><br>[MADE GROUND] | | (1.10) | | | | | | | | | | | | | |
| | | 1.10 | 45.89 | | | | | | | | | | | | |
| Sandy brown clay (Drillers description)<br><br>[MADE GROUND] | | (4.80) | | | | | | | | | | | | | |
| | | 5.90 | 45.89 | | | | | | | | | | | | |
| Obstruction possibly concrete structure (Drillers description)<br><br>[MADE GROUND] | | 6.00 | 45.89 | | | | | | | | | | | | |
| Borehole Terminated at 6.00m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH311A
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384415.00 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399556.82 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 45.89 mOD | Log Status: | FINAL |
| Date Started: | 05/07/2022 | | | Print Date: | 31/10/2022 |
| Date Completed: | 05/07/2022 | Orientation: | deg. | | |
| | | Inclination: | deg. | Final Depth: | 6.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 05/07/2022 | 05/07/2022 | Hand tools | | | Richard McCormick | | BH terminated due to obstruction. |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 05/07/2022 | 07:30 | 0.00 | 0.00 | Dry | Start of shift |
| 05/07/2022 | 17:30 | 6.00 | 6.00 | Dry | End of shift |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| | | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| | | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 5.90 | 6.00 | 01:00 | Chiselling.<br>Cross chisel. |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 905 | Arisings |
| 0.50 | 6.00 | 902 | Gravel |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | |

Reason for Hole Termination: Refusal

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

Borehole No: BH311B
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384417.39 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399555.73 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 45.31 mOD | Scale: | 1:50 |
| Date Started: | 06/07/2022 | | | Log Status: | FINAL |
| Date Completed: | 06/07/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 16.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| Clay brick rubble fill (Drillers description)<br><br>[MADE GROUND] | | (1.20) | | | | | | | | | | | | | |
| | | 1.20 | 44.11 | | | | | | | | | | | | |
| Sandy brown clay (Drillers description)<br><br>[MADE GROUND] | | (7.90) | | | | | | | | | | | | | |
| | | 9.10 | 36.21 | | | | | | | | | | | | |
| Clayey brown sand (Driller description)<br><br>[MADE GROUND] | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

bam ritchies

Borehole No: BH311B
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384417.39 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399555.73 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 45.31 mOD | Scale: | 1:50 |
| Date Started: | 06/07/2022 | | | Log Status: | FINAL |
| Date Completed: | 06/07/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 16.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| Clayey brown sand (Driller description)<br><br>[MADE GROUND] | | (5.90) | | | | | | | | | | | | | |
| SAND & GRAVEL (Drillers description)<br>[ALLUVIUM (Possible)] | | 15.00<br>(1.00) | 30.31 | | | | | | | | | | | | |
| Borehole Terminated at 16.00m | | 16.00 | 29.31 | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH311B
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384417.39 mE | Checked By: | APB |
| Project No: | 326R | | 399555.73 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 45.31 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 06/07/2022 | Orientation: | - - deg. | | |
| Date Completed: | 06/07/2022 | Inclination: | 90 deg. | Final Depth: | 16.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 06/07/2022 | 06/07/2022 | Hand tools | | | Richard McCormick | | |
| 1.20 | 16.00 | CP | 06/07/2022 | 06/07/2022 | T820-627 | | | Richard McCormick | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 06/07/2022 | 07:30 | 0.00 | 0.00 | Dry | Start of shift |
| 06/07/2022 | 17:00 | 16.00 | 16.00 | Dry | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 16.00 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 16.00 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| | | | |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| | 1 | 0.00 | 9.00 | 50 | Plain | |
| | 1 | 9.00 | 16.00 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 906 | Concrete |
| 0.50 | 9.00 | 903 | Bentonite |
| 9.00 | 16.00 | 902 | Gravel |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | |

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

Borehole No: BH312
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384382.83 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399519.93 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 45.60 mOD | Scale: | 1:50 |
| Date Started: | 10/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 11/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 16.82m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tarmac (Drillers description) [MADE GROUND] | | 0.20 | 45.40 | 0.30 | B | | | | | | | | | | |
| MADE GROUND: Light grey gravelly slightly clayey fine to coarse SAND. Gravel is subangular medium to coarse of sandstone. [MADE GROUND] | | (0.70) | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.20 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| MADE GROUND: Black gravelly slightly clayey SAND (predominantly of ash). Gravel is to angular to subangular of brick and sandstone. Sand is fine to coarse [MADE GROUND] | | 0.90 | 44.70 | 0.50 | ES | | | | | | | | | | |
| | | 1.10 | 44.50 | 1.00 | B | | | | PID | 0.40 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 - 1.65 | UT | 100 | 60 | 41 | PID | 0.00 | ppm | | | | |
| | | | | 1.65 - 1.70 | D | | | | | | | | | | |
| MADE GROUND: Dark brown mottled light brown and reddish brown slightly sandy gravelly CLAY with medium cobble content. Sand is fine to coarse occasionally of ash. Gravel is angular to subangular fine to coarse of brick sandstone mudstone and coal. Cobbles are angular of brick (<110mm). [MADE GROUND] | | | | 2.00 | ES | | | | | | | | | | |
| | | | | 2.00 - 2.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | (2.90) | | 2.00 - 2.45 | | | | | S | N=6 | | | | | |
| | | | | 2.70 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | UT | 100 | 100 | 31 | | | | | | | |
| | | | | 3.45 - 3.50 | D | | | | | | | | | | |
| Firm very closely fissured dark brown mottled light grey slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine and medium of sandstone mudstone and coal. [GLACIAL TILL] | | 4.00 | 41.60 | 4.00 | ES | | | | | | | | | | |
| | | | | 4.00 - 4.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 4.00 - 4.45 | D | | | | | | | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=14 | | | | | |
| | | | | 4.00 - 5.00 | | | | | Falling Head | 4.7E-008 | m/s | | | | |
| | | | | 4.70 | D | | | | | | | | | | |
| | | | | 5.00 | | | | | HV | P72,R66 | kPa | | | | |
| | | | | 5.00 | | | | | HV | P77,R66 | kPa | | | | |
| | | (2.45) | | 5.00 | | | | | HV | P80,R77 | kPa | | | | |
| | | | | 5.00 - 5.45 | UT | 100 | 100 | 85 | | | | | | | |
| | | | | 5.45 | | | | | HV | P84,R80 | kPa | | | | |
| | | | | 5.45 | | | | | HV | P91,R86 | kPa | | | | |
| | | | | 5.45 | | | | | HV | P94,R86 | kPa | | | | |
| *6.00 - 6.45m : very sandy* | | | | 5.45 - 5.50 | D | | | | | | | | | | |
| | | | | 6.00 - 6.30 | | | | | S | 50 / 155 | | | | | |
| | | | | 6.00 - 6.45 | B | | | | | | | | | | |
| | | | | 6.00 - 6.45 | D | | | | | | | | | | |
| Dark yellowish brown slightly gravelly very clayey fine to coarse SAND. Gravel is medium to coarse of sandstone mudstone and coal. [GLACIAL TILL] | | 6.45 | 39.15 | | | | | | | | | | | | |
| | | (0.85) | | 7.00 | D | | | | | | | | | | |
| Firm to stiff brown slightly gravelly silty slightly sandy CLAY. Gravel is fine to medium of sandstone mudstone and coal. Sand is fine to coarse. [GLACIAL TILL] | | 7.30 | 38.30 | | | | | | | | | | | | |
| | | | | 7.50 - 7.95 | UT-NR | 100 | | 86 | | | | | | | |
| | | | | 7.50 - 8.00 | B | | | | | | | | | | |
| | | (1.30) | | | | | | | | | | | | | |
| | | | | 8.50 | D | | | | | | | | | | |
| Dense Multicoloured Fine to coarse grained SAND and subangular to rounded fine to coarse (<63mm) GRAVEL of sandstone and quartzite with high cobble content. Cobbles are subrounded to rounded of sandstone and quartzite (<100mm). [GLACIAL TILL] | | 8.60 | 37.00 | | | | | | | | | | | | |
| | | | | 9.00 - 9.45 | B | | | | | | | | | | |
| | | | | 9.00 - 9.45 | | | | | S | N=31 | | | | | |
| | | | | 9.00 - 9.46 | D-NR | | | | | | | | | | |
| | | | | 10.00 | D | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

bam ritchies

Borehole No: BH312
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384382.83 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399519.93 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 45.60 mOD | Scale: | 1:50 |
| Date Started: | 10/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 11/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 16.82m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dense Multicoloured Fine to coarse grained SAND and subangular to rounded fine to coarse (<63mm) GRAVEL of sandstone and quartzite with high cobble content. Cobbles are subrounded to rounded of sandstone and quartzite (<100mm). [GLACIAL TILL] | | (3.00) | | 10.50 - 10.95 | B | | | | | | | | | | |
| | | | | 10.50 - 10.95 | | | | | C | N=38 | | | | | |
| | | | | 11.50 | D | | | | | | | | | | |
| Dense Reddish brown slightly silty fine to medium SAND. [GLACIAL TILL] | | 11.60 | 34.00 | | | | | | | | | | | | |
| | | | | 12.00 - 12.18 | | | | | S | 50 / 70 | | | | | |
| | | | | 12.00 - 12.45 | B | | | | | | | | | | |
| | | | | 12.00 - 12.45 | D | | | | | | | | | | |
| | | (3.00) | | 13.00 | D | | | | | | | | | | |
| | | | | 13.50 - 13.70 | | | | | S | 50 / 50 | | | | | |
| | | | | 13.50 - 13.80 | B | | | | | | | | | | |
| | | | | 13.50 - 13.80 | D | | | | | | | | | | |
| | | | | 14.50 | D | | | | | | | | | | |
| Multicoloured fine to coarse grained SAND and subangular to rounded fine coarse (<63mm) GRAVEL of sandstone and quartzite with medium cobble content. Cobbles are subrounded to rounded of sandstone and quartzite (<75mm). [GLACIAL TILL] | | 14.60 | 31.00 | | | | | | | | | | | | |
| | | | | 15.00 - 15.24 | | | | | C | 50 / 115 | | | | | |
| | | (1.40) | | 15.00 - 15.45 | B | | | | | | | | | | |
| Extremely weak reddish brown coarse grained SANDSTONE. [CHESTER PEBBLE BEDS] | | 16.00 | 29.60 | 16.00 | D | | | | | | | | | | |
| | | (0.82) | | 16.50 - 16.53 | | | | | C | 50 / 30 | | | | | |
| | | | | 16.50 - 16.80 | D | | | | | | | | | | |
| | | 16.82 | 28.78 | 16.80 - 16.82 | | | | | C | 50 / 15 | | | | | |
| Borehole Terminated at 16.82m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH312
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384382.83 mE | Checked By: | APB |
| Project No: | 326R | | 399519.93 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 45.60 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 10/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 11/03/2022 | Inclination: | 90 deg. | Final Depth: | 16.82m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 10/03/2022 | 10/03/2022 | Hand tools | | | Chris Hewitt | | |
| 0.00 | 17.00 | | | | | | | | Ethan Richardson | |
| 1.20 | 16.82 | CP | | 11/03/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 10/03/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 10/03/2022 | 17:00 | 7.00 | 7.00 | Dry | End of shift |
| 11/03/2022 | 06:15 | 7.00 | 7.00 | Dry | Start of shift |
| 11/03/2022 | 14:30 | 16.82 | 0.00 | 7.50 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.00 | 200 | |
| 17.00 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 3.00 | 200 | |
| 16.70 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 16.50 | 16.80 | 01:00 | Chiselling. Shell. Chisel to prove competent bed rock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 0.50 | 50 | Plain | |
| SP | 1 | 0.50 | 4.00 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 4.00 | 902 | Gravel |
| 4.00 | 16.82 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.00 | S | N=6 | 1.70 | Dry | | 1 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | N=14 | 3.90 | Dry | | 12 | 75 | 2 | 75 | 3 | 75 | 3 | 75 | 4 | 75 | 4 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | S | 50 / 155 | 5.90 | Dry | | 4 | 75 | 8 | 75 | 13 | 75 | 30 | 75 | 7 | 5 | | | BRW02 (AR1150) | 66 |
| 9.00 | S | N=31 | 8.90 | 6.90 | | 5 | 75 | 5 | 75 | 6 | 75 | 7 | 75 | 8 | 75 | 10 | 75 | BRW02 (AR1150) | 66 |
| 10.50 | C | N=38 | 10.40 | 7.00 | | 5 | 75 | 7 | 75 | 8 | 75 | 9 | 75 | 9 | 75 | 12 | 75 | BRW02 (AR1150) | 66 |
| 12.00 | S | 50 / 70 | 11.90 | 7.00 | | 12 | 75 | 13 | 40 | 50 | 70 | | | | | | | BRW02 (AR1150) | 66 |
| 13.50 | S | 50 / 50 | 13.40 | 7.30 | | 10 | 75 | 15 | 75 | 50 | 50 | | | | | | | BRW02 (AR1150) | 66 |
| 15.00 | C | 50 / 115 | 14.90 | 7.50 | | 12 | 75 | 13 | 55 | 25 | 75 | 25 | 40 | | | | | BRW02 (AR1150) | 66 |
| 16.50 | C | 50 / 30 | 16.40 | 7.50 | | 25 | | | | | | 50 | 30 | | | | | BRW02 (AR1150) | 66 |
| 16.80 | C | 50 / 15 | 16.70 | 7.50 | | 25 | 10 | | | 50 | 15 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# Water permeability test in a borehole using open systems

Carried out in accordance with BS EN ISO 22282-2:2012. Permeability calculated using the Velocity Graph Method.

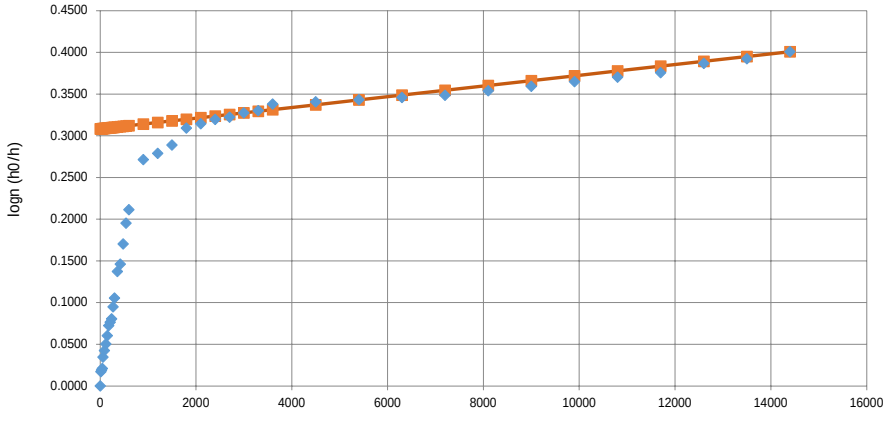
Borehole number: **BH312**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project name: | Victoria North | | Survey grid system: | OSGB | | Hole type: | CP |
| Project number: | 326R | | Co-ordinates: | 384382.83 | mE | Checked by: | APB |
| Client: | BAM Nuttall | | | 399519.93 | mN | Approved by: | JH |
| Engineer: | Andy Bird | | Ground level: | 45.60 | mOD | | |
| Date of test: | 10/03/2022 12:15 | | Test reference: | 1 | | Weather: | Dry, cloudy |
| Test type: | Falling Head | | L/D Ratio | 6.67 | | Groundwater before: | Dry |
| Response zone top: | 4.00 | m bgl | Test Condition: | Cylindrical cavity with: 1.2 < L/D < 10 | | Assumed groundwater level: | 5.00 m bgl |
| Reponse zone base: | 5.00 | m bgl | Intake Factor (F): | 2.42 | | Water added: | 500 l |
| Test section diameter: | 150 | mm | Casing above GL: | 0.30 | m agl | Filter material: | None |
| | | | Hole depth after test: | | m bgl | Water level start of test: | 0.00 m bgl |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| Seconds, s | m bgl | m | - |
| 0 | -0.30 | 5.30 | 1.000 |
| 15 | -0.21 | 5.21 | 1.017 |
| 30 | -0.20 | 5.20 | 1.019 |
| 45 | -0.19 | 5.19 | 1.021 |
| 60 | -0.12 | 5.12 | 1.035 |
| 90 | -0.08 | 5.08 | 1.043 |
| 120 | -0.04 | 5.04 | 1.052 |
| 150 | 0.01 | 4.99 | 1.062 |
| 180 | 0.07 | 4.93 | 1.075 |
| 210 | 0.09 | 4.91 | 1.079 |
| 240 | 0.11 | 4.89 | 1.084 |
| 270 | 0.18 | 4.82 | 1.100 |
| 300 | 0.23 | 4.77 | 1.111 |
| 360 | 0.38 | 4.62 | 1.147 |
| 420 | 0.42 | 4.58 | 1.157 |
| 480 | 0.53 | 4.47 | 1.186 |
| 540 | 0.64 | 4.36 | 1.216 |
| 600 | 0.71 | 4.29 | 1.235 |
| 900 | 0.96 | 4.04 | 1.312 |
| 1200 | 0.99 | 4.01 | 1.322 |
| 1500 | 1.03 | 3.97 | 1.335 |
| 1800 | 1.11 | 3.89 | 1.362 |
| 2100 | 1.13 | 3.87 | 1.370 |
| 2400 | 1.15 | 3.85 | 1.377 |
| 2700 | 1.16 | 3.84 | 1.380 |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| s | m bgl | m | - |
| 3000 | 1.18 | 3.82 | 1.387 |
| 3300 | 1.19 | 3.81 | 1.391 |
| 3600 | 1.22 | 3.78 | 1.402 |
| 4500 | 1.23 | 3.77 | 1.406 |
| 5400 | 1.24 | 3.76 | 1.410 |
| 6300 | 1.25 | 3.75 | 1.413 |
| 7200 | 1.26 | 3.74 | 1.417 |
| 8100 | 1.28 | 3.72 | 1.425 |
| 9000 | 1.30 | 3.70 | 1.432 |
| 9900 | 1.32 | 3.68 | 1.440 |
| 10800 | 1.34 | 3.66 | 1.448 |
| 11700 | 1.36 | 3.64 | 1.456 |
| 12600 | 1.40 | 3.60 | 1.472 |
| 13500 | 1.42 | 3.58 | 1.480 |
| 14400 | 1.45 | 3.55 | 1.493 |




$$Permeability, k = \frac{S}{F\,(t_2 - t_1)} \log_e \left({}^{H_1}/_{H_2}\right)$$

$$k = \alpha \frac{S}{F}$$

**S=** 0.017671 m2

**k =** **4.69E-08** m/s

Comments:

Partially saturated response zone, results to be used with caution.

# BOREHOLE LOG

Borehole No: BH312A
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384386.55 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399517.61 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 44.99 mOD | Scale: | 1:50 |
| Date Started: | 07/07/2022 | | | Log Status: | FINAL |
| Date Completed: | 07/07/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 5.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| Sand gravely clay brick rubble fill (Drillers description)<br><br>[MADE GROUND] | | (2.10) | | | | | | | | | | | | | |
| | | 2.10 | 42.89 | | | | | | | | | | | | |
| Sandy brown clay (Drillers description)<br><br>[MADE GROUND] | | (2.90) | | | | | | | | | | | | | |
| | | 5.00 | 39.99 | | | | | | | | | | | | |
| Borehole Terminated at 5.00m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH312A
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384386.55 mE 399517.61 mN | Checked By: | APB |
| Client: | BAM Nuttall | Ground Level: | 44.99 mOD | Approved By: | JH |
| Engineer: | ARUP | | | Log Status: | FINAL |
| Date Started: | 07/07/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| Date Completed: | 07/07/2022 | Inclination: | 90 deg. | Final Depth: | 5.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 07/07/2022 | 07/07/2022 | Hand tools | | | Richard McCormick | | |
| 1.20 | 5.00 | CP | 07/07/2022 | 07/07/2022 | T820-627 | | | Richard McCormick | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 07/07/2022 | 07:30 | 0.00 | 0.00 | Dry | Start of shift |
| 07/07/2022 | 11:15 | 5.00 | 4.50 | Dry | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.50 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| | 1 | 0.00 | 0.50 | 50 | Plain | |
| | 1 | 0.50 | 4.00 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.25 | 906 | Concrete |
| 0.25 | 0.50 | 903 | Bentonite |
| 0.50 | 4.00 | 902 | Gravel |
| 4.00 | 5.00 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

bam ritchies

Borehole No: BH313
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384395.83 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399507.84 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 39.81 mOD | Scale: | 1:50 |
| Date Started: | 22/02/2022 | | | Log Status: | FINAL |
| Date Completed: | 24/02/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 12.22m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Dark grey very sandy angular fine to coarse (2-90mm) GRAVEL of clinker and brick. Sand is predominantly of ash. [MADE GROUND] | | (1.10) | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| MADE GROUND: Reddish brown silty slightly clayey fine to coarse SAND and GRAVEL. Gravel is angular to sub-angular fine to coarse of brick (<70mm). [MADE GROUND] | | 1.10 | 38.71 | 1.00 | B | | | | PID | 0.60 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | (0.55) | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 - 1.65 | B | | | | PID | 2.30 | ppm | | | | |
| | | | | 1.20 - 1.65 | | | | | C | N=27 | | | | | |
| MADE GROUND: Brown slightly silty fine to coarse SAND and GRAVEL. Gravel is angular fine to coarse (2-90mm) of brick and sandstone. [MADE GROUND] | | 1.65 | 38.16 | 1.80 | D | | | | | | | | | | |
| | | (0.95) | | 2.00 - 2.45 | B | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | C | N=23 | | | | | |
| Medium dense orangish brown slightly silty slightly clayey SAND and GRAVEL. Sand is fine to coarse. Gravel is sub-rounded to sub-angular fine to coarse (2-70mm) of quartzite and sandstone. [GLACIAL TILL] | | 2.60 | 37.21 | 2.70 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | B | | | | | | | | | | |
| | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=12 | | | | | |
| | | | | 3.70 | D | | | | | | | | | | |
| *4.00m : Slightly gravelly. Gravel is fine.* | | | | 4.00 - 4.45 | B | | | | | | | | | | |
| | | | | 4.00 - 4.45 | D | | | | | | | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=16 | | | | | |
| | | | | 4.70 | D | | | | | | | | | | |
| *5.00m : No gravel content noted.* | | | | 5.00 - 5.45 | B | | | | | | | | | | |
| | | | | 5.00 - 5.45 | D | | | | | | | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=17 | | | | | |
| | | | | 5.70 | D | | | | | | | | | | |
| *6.00m : Gravelly. Gravel is fine to coarse.* | | (6.80) | | 6.00 - 6.45 | B | | | | | | | | | | |
| | | | | 6.00 - 6.45 | D | | | | | | | | | | |
| | | | | 6.00 - 6.45 | | | | | S | N=24 | | | | | |
| | | | | 7.00 | D | | | | | | | | | | |
| *7.50m : Gravel is fine to medium.* | | | | 7.50 - 7.95 | B | | | | | | | | | | |
| | | | | 7.50 - 7.95 | D | | | | | | | | | | |
| | | | | 7.50 - 7.95 | | | | | S | N=27 | | | | | |
| | | | | 8.50 | D | | | | | | | | | | |
| *9.00m : Gravel is fine.* | | | | 9.00 - 9.45 | B | | | | | | | | | | |
| | | | | 9.00 - 9.45 | D | | | | | | | | | | |
| | | 9.40 | 30.41 | 9.00 - 9.45 | | | | | S | N=43 | | | | | |
| Brown slightly silty sandy CLAY. Sand is fine to coarse. [GLACIAL TILL] | | (1.10) | | | | | | | | | | | | | |
| | | | | 10.00 | D | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

bam ritchies

Borehole No: BH313
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384395.83 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399507.84 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 39.81 mOD | Scale: | 1:50 |
| Date Started: | 22/02/2022 | | | Log Status: | FINAL |
| Date Completed: | 24/02/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 12.22m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| Brown slightly silty sandy CLAY. Sand is fine to coarse. [GLACIAL TILL] | | | | | | | | | | | | | | | |
| | | 10.50 | 29.31 | | | | | | | | | | | | |
| Orangish brown slightly silty fine to coarse SAND and GRAVEL. Gravel is sub-angular to sub-rounded fine to coarse of quartzite and sandstone (2-40mm). [CHESTER PEBBLE BEDS] | | (0.60) | | 10.50 - 10.95 | UT | 100 | 100 | 89 | | | | | | | |
| | | | | 10.95 - 11.00 | D | | | | | | | | | | |
| | | 11.10 | 28.71 | | | | | | | | | | | | |
| Extremely weak orangish brown slightly silty SANDSTONE. Recovered as, sandy angular and sub angular fine to coarse GRAVEL sized fragments. [CHESTER PEBBLE BEDS] | | | | 11.50 | D | | | | | | | | | | |
| | | (1.12) | | | | | | | | | | | | | |
| | | | | 12.00 - 12.04 | | | | | S | 50 / 40 | | | | | |
| | | | | 12.00 - 12.20 | D | | | | | | | | | | |
| | | 12.22 | 27.59 | 12.20 - 12.22 | | | | | | 50 / 10 | | | | | |
| Borehole Terminated at 12.22m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH313
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384395.83 mE | Checked By: | APB |
| Project No: | 326R | | 399507.84 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 39.81 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 22/02/2022 | Orientation: | - - deg. | | |
| Date Completed: | 24/02/2022 | Inclination: | 90 deg. | Final Depth: | 12.22m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 22/02/2022 | 22/02/2022 | Hand tools | | | Chris Hewitt | Omar Coggins | |
| 0.00 | 12.22 | CP | 28/02/2022 | 28/02/2022 | | | | | | |
| 1.20 | 12.22 | CP | | 24/02/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 22/02/2022 | 11:30 | 0.00 | 0.00 | Dry | Start of shift |
| 22/02/2022 | 16:00 | 1.65 | 1.65 | Dry | End of shift |
| 23/02/2022 | 06:15 | 1.65 | 1.65 | Dry | Start of shift |
| 23/02/2022 | 16:30 | 12.40 | 12.00 | 8.90 | End of shift |
| 24/02/2022 | 06:15 | 12.40 | 12.00 | 9.50 | Start of shift |
| 24/02/2022 | 12:00 | 12.40 | 0.00 | 9.50 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 12.00 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 12.00 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| 2.60 | 12.00 | 500 | Water added to aid drilling threw sand and gravels |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 12.00 | 12.20 | 01:00 | Chiselling. Shell. Chisel to prove competent bed rock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 3.00 | 50 | GasValve/ Plain | |
| SP | 1 | 3.00 | 8.00 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 3.00 | 903 | Bentonite |
| 3.00 | 8.00 | 902 | Gravel |
| 8.00 | 12.22 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | C | N=27 | 0.00 | Dry | | 7 | 75 | 7 | 75 | 6 | 75 | 8 | 75 | 5 | 75 | 8 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | C | N=23 | 1.70 | Dry | | 6 | 75 | 5 | 75 | 6 | 75 | 7 | 75 | 4 | 75 | 6 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=12 | 2.90 | Dry | | 2 | 75 | 3 | 75 | 3 | 75 | 2 | 75 | 3 | 75 | 4 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | N=16 | 3.90 | 2.00 | | 3 | 75 | 3 | 75 | 3 | 75 | 4 | 75 | 4 | 75 | 5 | 75 | BRW02 (AR1150) | 66 |
| 5.00 | S | N=17 | 4.79 | 2.70 | | 3 | 75 | 4 | 75 | 4 | 75 | 4 | 75 | 4 | 75 | 5 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | S | N=24 | 5.90 | 2.10 | | 3 | 75 | 5 | 75 | 5 | 75 | 6 | 75 | 6 | 75 | 7 | 75 | BRW02 (AR1150) | 66 |
| 7.50 | S | N=27 | 7.40 | 2.50 | | 3 | 75 | 5 | 75 | 5 | 75 | 6 | 75 | 8 | 75 | 8 | 75 | BRW02 (AR1150) | 66 |
| 9.00 | S | N=43 | 8.90 | 4.10 | | 3 | 75 | 6 | 75 | 6 | 75 | 8 | 75 | 14 | 75 | 15 | 75 | BRW02 (AR1150) | 66 |
| 12.00 | S | 50 / 40 | 11.90 | 8.50 | | 25 | | | | 50 | 40 | | | | | | | BRW02 (AR1150) | 66 |
| 12.20 | | 50 / 10 | 12.00 | 8.90 | | 25 | 10 | | | 50 | 10 | | | | | | | | |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

bam ritchies

Borehole No: BH314
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384439.70 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399502.02 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 43.11 mOD | Scale: | 1:50 |
| Date Started: | 01/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 03/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 12.45m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Black slightly gravelly slightly sandy CLAY. Sand is fine to coarse (predominantly of ash) with rare rootlets (<20mm). Gravel is angular to sub angular fine of coarse of brick and sandstone. [MADE GROUND] | | 0.10 | 43.01 | | | | | | | | | | | | |
| MADE GROUND: Black slightly gravelly slightly silty fine to coarse SAND (predominantly of ash) with low to medium rootlets content (<30mm). Gravel is angular to sub rounded fine to coarse of sandstone coal brick burnt shale and clinker. [MADE GROUND] | | (3.90) | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 | ES | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=2 | | | | | |
| | | | | 1.80 | D | | | | | | | | | | |
| | | | | 2.00 | ES | | | | | | | | | | |
| | | | | 2.00 - 2.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=4 | | | | | |
| | | | | 2.70 | D | | | | | | | | | | |
| | | | | 3.00 | ES | | | | | | | | | | |
| | | | | 3.00 - 3.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=2 | | | | | |
| | | | | 3.70 | D | | | | | | | | | | |
| MADE GROUND: Dark grey locally mottled brown gravelly slightly sandy CLAY with low rootlet content (<30mm). Sand is fine to coarse. Gravel is angular of sub-rounded of sandstone coal slag and clinker. [MADE GROUND] | | 4.00 | 39.11 | 4.00 | ES | | | | | | | | | | |
| | | | | 4.00 - 4.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 4.00 - 4.45 | D | | | | | | | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=7 | | | | | |
| | | | | 4.70 | D | | | | | | | | | | |
| | | | | 5.00 | ES | | | | | | | | | | |
| | | | | 5.00 - 5.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 5.00 - 5.45 | D | | | | | | | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=11 | | | | | |
| | | (3.50) | | 5.70 | D | | | | | | | | | | |
| | | | | 6.00 | ES | | | | | | | | | | |
| | | | | 6.00 - 6.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 6.00 - 6.45 | D | | | | | | | | | | |
| | | | | 6.00 - 6.45 | | | | | S | N=12 | | | | | |
| | | | | 7.00 | D | | | | | | | | | | |
| MADE GROUND: Black slightly gravelly medium to coarse SAND (predominantly of ash) low cobble content and low rootlet content (<15mm). Gravel is angular to sub-rounded medium to coarse of sandstone brick coal burnt shale and clinker. [MADE GROUND] | | 7.50 | 35.61 | 7.50 | ES | | | | | | | | | | |
| | | | | 7.50 - 7.95 | B | | | | PID | 0.00 | ppm | | | | |
| | | (0.70) | | 7.50 - 7.95 | D-NR | | | | | | | | | | |
| MADE GROUND: Dark grey locally mottled black slightly gravelly CLAY with high carbon content. Gravel is sub-angular fine and medium of coal and sandstone. Strong hydrocarbon odour noted. [MADE GROUND] | | 8.20 | 34.91 | | | | | | | | | | | | |
| | | | | 8.50 | D | | | | | | | | | | |
| | | (1.10) | | | | | | | | | | | | | |
| Brown sub-angular to rounded fine to coarse SAND and GRAVEL with medium cobble content. Cobbles are sub-rounded to rounded of sandstone. [GLACIAL TILL] | | 9.30 | 33.81 | 9.00 - 9.45 | UT | 100 | | 33 | | | | | | | |
| | | | | 9.45 - 9.50 | D | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

Borehole No: BH314
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384439.70 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399502.02 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 43.11 mOD | Scale: | 1:50 |
| Date Started: | 01/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 03/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 12.45m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| Brown sub-angular to rounded fine to coarse SAND and GRAVEL with medium cobble content. Cobbles are sub-rounded to rounded of sandstone. [GLACIAL TILL] | | (1.45) | | 10.50 | ES | | | | | | | | | | |
| | | 10.75 | 32.36 | 10.50 - 10.95 | B | | | | | | | | | | |
| Extremely weak orangish brown SANDSTONE with occasional rounded fine to coarse pebbles of quartzite. [CHESTER PEBBLE BEDS] | | | | 10.50 - 10.95 | | | | | C | N=17 | | | | | |
| | | | | 11.10 | EW | | | | | | | | | | |
| | | (1.70) | | 11.50 | D | | | | | | | | | | |
| | | | | 12.00 | ES | | | | | | | | | | |
| | | | | 12.00 - 12.14 | | | | | C | 50 / 80 | | | | | |
| | | | | 12.00 - 12.40 | B | | | | | | | | | | |
| | | 12.45 | 30.66 | 12.40 - 12.45 | | | | | C | 50 / 35 | | | | | |
| Borehole Terminated at 12.45m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH314
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384439.70 mE | Checked By: | APB |
| Project No: | 326R | | 399502.02 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 43.11 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 01/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 03/03/2022 | Inclination: | 90 deg. | Final Depth: | 12.45m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 01/03/2022 | 01/03/2022 | Hand tools | | | Chris Hewitt | Ethan Richardson | |
| 0.00 | 12.45 | | | | | | | | | |
| 1.20 | 12.45 | CP | | 03/03/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 01/03/2022 | 11:00 | 0.00 | 0.00 | Dry | Start of shift |
| 01/03/2022 | 16:00 | 8.50 | 8.50 | 8.00 | End of shift |
| 03/03/2022 | 06:15 | 0.00 | 0.00 | 6.80 | Start of shift |
| 03/03/2022 | 13:00 | 12.45 | 12.40 | 9.00 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 12.60 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 12.40 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 12.00 | 12.40 | 01:00 | Chiselling. Shell. Chisel to prove competent bedrock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 9.50 | 50 | Plain | |
| SP | 1 | 9.50 | 12.00 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 9.50 | 903 | Bentonite |
| 9.50 | 12.00 | 902 | Gravel |
| 12.00 | 12.45 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=2 | 0.00 | Dry | | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | S | N=4 | 1.70 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=2 | 2.90 | Dry | | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | N=7 | 3.90 | Dry | | 2 | 75 | 2 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 5.00 | S | N=11 | 4.70 | Dry | | 2 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | S | N=12 | 5.90 | Dry | | 2 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 10.50 | C | N=17 | 10.40 | 8.60 | | 3 | 75 | 3 | 75 | 3 | 75 | 4 | 75 | 5 | 75 | 5 | 75 | BRW02 (AR1150) | 66 |
| 12.00 | C | 50 / 80 | 12.90 | 8.90 | | 25 | 55 | | | 39 | 75 | 11 | 5 | | | | | BRW02 (AR1150) | 66 |
| 12.40 | C | 50 / 35 | 12.40 | 9.00 | | 25 | 15 | | | 50 | 35 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

bam ritchies

Borehole No: BH315
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384852.04 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399729.30 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 39.26 mOD | Scale: | 1:50 |
| Date Started: | 03/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 07/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 13.52m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOPSOIL: Dark grey slightly gravelly slightly sandy CLAY with frequent rootlets (<50mm) and rare wood fragments (<30mm). Gravel is sub angular to sub rounded fine to coarse of sandstone and siltstone. Sand is fine to coarse. [TOPSOIL] | | (0.30) | | | | | | | | | | | | | |
| | | 0.30 | 38.96 | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | (0.70) | | 0.50 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| Orangish brown locally grey slightly gravelly sandy CLAY. Gravel is angular to sub angular fine to coarse of diesel soaked coal. Sand is fine to coarse. [MADE GROUND] | | 1.00 | 38.26 | 1.00 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 | ES | | | | PID | 0.00 | ppm | | | | |
| Dark brown slightly gravelly slightly silty CLAY with local lenses of organic matter (<120mm). Gravel is angular to sub-angular fine to medium of brick and siltstone. [MADE GROUND] | | | | 1.20 - 1.65 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | D-NR | | | | | | | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=8 | | | | | |
| | | | | 1.80 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | UT | 100 | 100 | 25 | | | | | | | |
| | | | | 2.45 - 2.50 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | UT | 100 | 100 | 55 | | | | | | | |
| | | | | 3.45 - 3.50 | D | | | | | | | | | | |
| *4.00 - 4.45m : Early stage peat formation.* | | | | 4.00 | ES | | | | | | | | | | |
| | | | | 4.00 - 4.45 | UT | 100 | 75 | 31 | PID | 0.00 | ppm | | | | |
| | | | | 4.45 - 4.50 | D | | | | | | | | | | |
| | | (8.00) | | 5.00 - 5.45 | UT | 100 | 40 | 59 | | | | | | | |
| | | | | 5.45 - 5.50 | D | | | | | | | | | | |
| | | | | 6.00 | ES | | | | | | | | | | |
| | | | | 6.00 - 6.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 6.00 - 6.45 | D | | | | | | | | | | |
| | | | | 6.00 - 6.45 | | | | | S | N=10 | | | | | |
| | | | | 7.00 | D | | | | | | | | | | |
| | | | | 7.00 | | | | | PP | 202 | kPa | | | | |
| | | | | 7.00 | | | | | PP | 207 | kPa | | | | |
| | | | | 7.00 | | | | | PP | 208 | kPa | | | | |
| | | | | 7.50 - 7.95 | UT | 100 | 90 | 76 | | | | | | | |
| | | | | 7.95 - 8.00 | D | | | | | | | | | | |
| Dark grey slightly silty slightly sandy CLAY. Sand is fine to coarse. [ALLUVIUM] | | 9.00 | 30.26 | 9.00 | ES | | | | | | | | | | |
| | | | | 9.00 - 9.45 | D | | | | | | | | | | |
| | | | | 9.00 - 9.45 | | | | | S | N=9 | | | | | |
| | | (1.00) | | | | | | | | | | | | | |
| | | 10.00 | 29.26 | 10.00 | D | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

bam ritchies

Borehole No: BH315
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384852.04 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399729.30 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 39.26 mOD | Scale: | 1:50 |
| Date Started: | 03/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 07/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 13.52m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 10.50 | ES | | | | | | | | | | |
| Dark grey locally mottled brown slightly silty SAND. Sand is predominantly fine to medium with a little coarse. [ALLUVIUM] | | | | 10.50 - 10.95 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 10.50 - 10.95 | D-NR | | | | | | | | | | |
| *10.50 - 12.00m :* | | | | 10.50 - 10.95 | | | | | S | N=15 | | | | | |
| | | | | 11.44 | EW | | | | | | | | | | |
| | | | | 11.50 | D | | | | | | | | | | |
| *12.00m : Medium cobble content well rounded sandstone and quartzite* | | (3.00) | | 12.00 | ES | | | | | | | | | | |
| | | | | 12.00 | EW | | | | | | | | | | |
| | | | | 12.00 - 12.45 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 12.00 - 12.45 | | | | | C | N=17 | | | | | |
| | | | | 13.20 - 13.30 | | | | | C | 50 / 65 | | | | | |
| Very dense grey mottled brown slightly silty fine and medium SAND. Possible extremely weak SANDSTONE. [COLLYHURST SANDSTONE] | | 13.50 13.52 | 25.76 25.74 | 13.50 - 13.52 | | | | | C | 50 / 15 | | | | | |
| Borehole Terminated at 13.52m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH315
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384852.04 mE | Checked By: | APB |
| Project No: | 326R | | 399729.30 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 39.26 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 03/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 07/03/2022 | Inclination: | 90 deg. | Final Depth: | 13.52m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 03/03/2022 | 03/03/2022 | Hand tools | | | Chris Hewitt | | |
| 0.00 | 13.52 | CP | 10/03/2022 | 10/03/2022 | | | | | Omar Coggins | |
| 1.20 | 13.52 | CP | | 07/03/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 03/03/2022 | 14:00 | 0.00 | 0.00 | Dry | Start of shift |
| 03/03/2022 | 16:00 | 1.20 | 0.00 | 0.80 | End of shift |
| 04/03/2022 | 06:15 | 1.20 | 0.00 | 0.80 | Start of shift |
| 04/03/2022 | 15:30 | 13.70 | 13.50 | 9.10 | End of shift |
| 07/03/2022 | 06:15 | 13.70 | 13.50 | 9.80 | Start of shift |
| 07/03/2022 | 16:00 | 13.70 | 0.00 | 9.80 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 13.70 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 13.50 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| 9.00 | 13.50 | 150 | Water added to aid drilling |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| 2.00 | 2.45 | Ut shoe damaged |
| 3.00 | 3.45 | Ut shoe damaged |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 13.20 | 13.50 | 01:00 | Chiselling. Shell. Chisel to prove competent bedrock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 9.00 | 50 | Plain | |
| SP | 1 | 9.00 | 12.50 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 909 | Upstanding cover |
| 0.50 | 9.00 | 903 | Bentonite |
| 9.00 | 12.50 | 902 | Gravel |
| 12.50 | 13.52 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=8 | 0.00 | 0.80 | | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | S | N=10 | 5.90 | Dry | | 2 | 75 | 2 | 75 | 3 | 75 | 2 | 75 | 3 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 9.00 | S | N=9 | 8.90 | Dry | | 2 | 75 | 3 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | 2 | 75 | BRW02 (AR1150) | 66 |
| 10.50 | S | N=15 | 10.40 | 8.60 | | 3 | 75 | 3 | 75 | 3 | 75 | 4 | 75 | 4 | 75 | 4 | 75 | BRW02 (AR1150) | 66 |
| 12.00 | C | N=17 | 12.90 | 8.70 | | 3 | 75 | 3 | 75 | 3 | 75 | 4 | 75 | 5 | 75 | 5 | 75 | BRW02 (AR1150) | 66 |
| 13.20 | C | 50 / 65 | 13.20 | 9.20 | | 25 | 40 | | | 50 | 65 | | | | | | | BRW02 (AR1150) | 66 |
| 13.50 | C | 50 / 15 | 13.50 | 9.10 | | 25 | 10 | | | 50 | 15 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

bam ritchies

Borehole No: BH320
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 384889.76 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399761.36 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 34.26 mOD | Scale: | 1:50 |
| Date Started: | 10/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 11/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 6.70m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Black MACADAM matrix (14-40mm gravel). [MACADAM] | | 0.10 | 34.16 | | | | | | | | | | | | |
| MADE GROUND: Light brown slightly silty sandy sub angular fine to coarse GRAVEL of limestone [TYPE 1 SUB BASE] | | 0.30 | 33.96 | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 1.00 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 1.00 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| MADE GROUND: Orange and reddish brown slightly clayey very gravelly SAND (partially of ash) with localised high cobble content (<190mm) and rare fragments of timber (<30mm). Sand is medium to coarse. Gravel is angular to subangular fine to coarse of brick mortar concrete sandstone and coal. Cobbles are subangular of brick and concrete (<100mm). Weak hydrocarbon odour noted. [MADE GROUND] | | (2.70) | | 1.20 - 1.65 | D | | | | PID | 1.60 | ppm | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=32 | | | | | |
| | | | | 1.45 - 1.60 | ES | | | | PID | 4.10 | ppm | | | | |
| | | | | 1.20 - 2.00 | L | | | | | | | | | | |
| | | | | 1.60 - 1.70 | D | | | | | | | | | | |
| | | | | 1.70 - 2.00 | B | | | | | | | | | | |
| | | | | 2.00 - 2.45 | D | | | | PID | 5.30 | ppm | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=28 | | | | | |
| | | | | 2.20 - 2.35 | ES | | | | | | | | | | |
| | | | | 2.35 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 3.00 | L | | | | | | | | | | |
| | | | | 2.45 - 2.95 | B | | | | | | | | | | |
| *2.75 - 2.95m : Dark brown slightly gravelly slightly sandy clay* | | | | | | | | | | | | | | | |
| *2.95 - 3.45m : Reddish pink very gravelly coarse grained sand* | | 3.00 | 31.26 | | | | | | | | | | | | |
| | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=25 | | | | | |
| MADE GROUND: Dark greyish brown slightly clayey gravelly SAND (partially of ash). Sand is medium to coarse. Gravel is fine to coarse angular to subangular of brick concrete coal and probable slag. Strong hydrocarbon odour noted. [MADE GROUND] | | (1.25) | | 3.00 - 4.00 | L | | | | PID | 35.80 | ppm | | | | |
| | | | | 3.00 - 4.00 | L | | | | | | | | | | |
| | | | | 3.45 - 3.60 | ES | | | | | | | | | | |
| | | | | 3.60 - 3.70 | D | | | | | | | | | | |
| | | | | 3.50 - 4.20 | | | | | Falling Head | 2.1E-006 | m/s | | | | |
| | | | | 3.70 - 4.25 | B | | | | | | | | | | |
| MADE GROUND: Yellowish light brown frequently stained black silty slightly gravelly fine to coarse SAND. Strong hydrocarbon odour noted. [MADE GROUND] | | 4.25 | 30.01 | 4.00 - 4.45 | D | | | | | | | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=2 | | | | | |
| | | | | 4.35 - 4.50 | ES | | | | PID | 30.20 | ppm | | | | |
| | | | | 4.00 - 5.00 | L | | | | | | | | | | |
| | | | | 4.50 - 4.60 | D | | | | | | | | | | |
| | | | | 4.60 - 5.00 | B | | | | | | | | | | |
| *4.44 - 4.54m : 1nr Band of angular medium to coarse gravel of ash and coal* | | | | | | | | | | | | | | | |
| *4.74 - 4.90m : 1nr Band of slightly gravelly clay. Gravel is angular coarse of mudstone* | | | | 5.00 - 5.15 | ES | | | | PID | 40.20 | ppm | | | | |
| | | | | 5.15 - 5.25 | D | | | | | | | | | | |
| | | | | 5.00 - 5.45 | D | | | | | | | | | | |
| | | (2.45) | | 5.00 - 5.45 | | | | | S | N=4 | | | | | |
| | | | | 5.00 - 6.00 | L | | | | | | | | | | |
| | | | | 5.25 - 6.00 | B | | | | | | | | | | |
| | | | | | | | | | PID | 59.80 | ppm | | | | |
| | | | | 6.00 - 6.40 | ES | | | | | | | | | | |
| | | | | 6.00 - 6.45 | D | | | | | | | | | | |
| | | | | 6.00 - 6.45 | | | | | S | N=3 | | | | | |
| | | | | 6.00 - 6.70 | L | | | | | | | | | | |
| Borehole Terminated at 6.70m | | 6.70 | 27.56 | 6.40 - 6.70 | D | | | | | | | | | | |
| | | | | 6.50 - 6.70 | | | | | S | 50 / 125 | | | | | |
| | | | | 6.60 - 6.70 | B | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH320
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | WLS |
| | | Co-ordinates: | 384889.76 mE | Checked By: | APB |
| Project No: | 326R | | 399761.36 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 34.26 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 10/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 11/03/2022 | Inclination: | 90 deg. | Final Depth: | 6.70m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 10/03/2022 | 10/03/2022 | Hand tools and coring equipment | | | Lee Garbett | | |
| 0.00 | 1.20 | TP | 10/03/2022 | 10/03/2022 | Insulated hand digging tools | | | | Andy Bird | Very dense made ground between 0.2 and 1.2m |
| 0.00 | 6.70 | | | | | | | | Ethan Richardson | |
| 0.00 | 6.00 | | | | | | | | Ethan Richardson | |
| 1.20 | 6.70 | WLS | | 11/03/2022 | T820-774 | | | Ryan Beal | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 10/03/2022 | 12:26 | 0.00 | 0.00 | Dry | Start of shift |
| 10/03/2022 | 16:30 | 1.20 | 0.00 | Dry | End of shift |
| 11/03/2022 | 08:36 | 1.20 | 0.00 | Dry | Start of shift |
| 11/03/2022 | 14:33 | 6.80 | 4.00 | 4.70 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 2.00 | 115 | |
| 5.00 | 87 | |
| 6.70 | 78 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 0.00 | 1.20 | 03:15 | Slow progress. . Hard digging, compacted brick |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| 11/03/2022 | 4.60 | 4.00 | 5 | 4.60 | | |
| 11/03/2022 | 4.60 | 4.00 | 10 | 4.60 | | |
| 11/03/2022 | 4.60 | 4.00 | 15 | 4.70 | | |
| 11/03/2022 | 4.60 | 4.00 | 20 | 4.70 | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 3.50 | 50 | Plain | |
| SP | 1 | 3.50 | 4.20 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.05 | 910 | Flush cover |
| 0.05 | 0.50 | 906 | Concrete |
| 0.50 | 3.50 | 903 | Bentonite |
| 3.50 | 4.20 | 902 | Gravel |
| 4.20 | 6.70 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=32 | 0.00 | Dry | 0 | 2 | 75 | 3 | 75 | 9 | 75 | 7 | 75 | 6 | 75 | 10 | 75 | T820-774 | 67 |
| 2.00 | S | N=28 | 2.00 | Dry | 0 | 10 | 75 | 12 | 75 | 12 | 75 | 6 | 75 | 5 | 75 | 5 | 75 | T820-774 | 67 |
| 3.00 | S | N=25 | 3.00 | Dry | 0 | 6 | 75 | 7 | 75 | 6 | 75 | 6 | 75 | 6 | 75 | 7 | 75 | T820-774 | 67 |
| 4.00 | S | N=2 | 3.00 | Dry | 0 | 0 | 75 | 1 | 75 | 0 | 75 | 0 | 75 | 0 | 75 | 2 | 75 | T820-774 | 67 |
| 5.00 | S | N=4 | 4.00 | 4.70 | 0 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | T820-774 | 67 |
| 6.00 | S | N=3 | 4.00 | 4.70 | 0 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | T820-774 | 67 |
| 6.50 | S | 50 / 125 | 4.00 | 4.70 | | 22 | 75 | 3 | 0 | 28 | 75 | 22 | 50 | | | | | | |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# Water permeability test in a borehole using open systems

Carried out in accordance with BS EN ISO 22282-2:2012. Permeability calculated using the Velocity Graph Method.

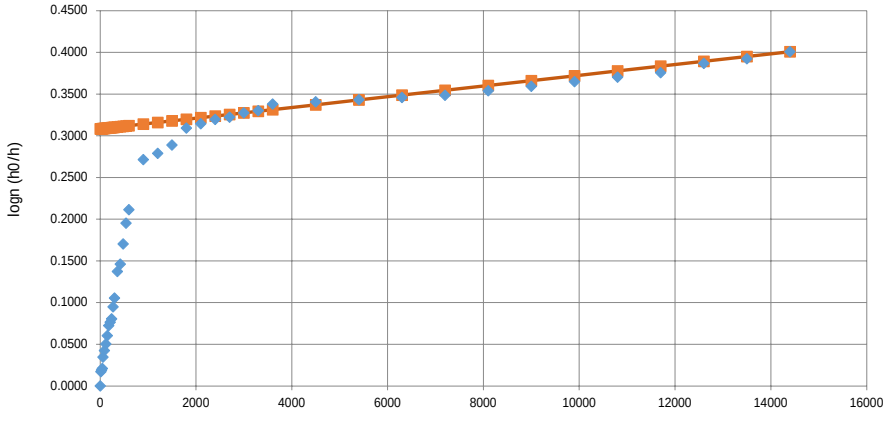
Borehole number: **BH312**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project name: | Victoria North | | Survey grid system: | OSGB | | Hole type: | CP |
| Project number: | 326R | | Co-ordinates: | 384382.83 | mE | Checked by: | APB |
| Client: | BAM Nuttall | | | 399519.93 | mN | Approved by: | JH |
| Engineer: | Andy Bird | | Ground level: | 45.60 | mOD | | |
| Date of test: | 10/03/2022 12:15 | | Test reference: | 1 | | Weather: | Dry, cloudy |
| Test type: | Falling Head | | L/D Ratio | 6.67 | | Groundwater before: | Dry |
| Response zone top: | 4.00 | m bgl | Test Condition: | Cylindrical cavity with: 1.2 < L/D < 10 | | Assumed groundwater level: | 5.00 m bgl |
| Reponse zone base: | 5.00 | m bgl | Intake Factor (F): | 2.42 | | Water added: | 500 l |
| Test section diameter: | 150 | mm | Casing above GL: | 0.30 | m agl | Filter material: | None |
| | | | Hole depth after test: | | m bgl | Water level start of test: | 0.00 m bgl |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| Seconds, s | m bgl | m | - |
| 0 | -0.30 | 5.30 | 1.000 |
| 15 | -0.21 | 5.21 | 1.017 |
| 30 | -0.20 | 5.20 | 1.019 |
| 45 | -0.19 | 5.19 | 1.021 |
| 60 | -0.12 | 5.12 | 1.035 |
| 90 | -0.08 | 5.08 | 1.043 |
| 120 | -0.04 | 5.04 | 1.052 |
| 150 | 0.01 | 4.99 | 1.062 |
| 180 | 0.07 | 4.93 | 1.075 |
| 210 | 0.09 | 4.91 | 1.079 |
| 240 | 0.11 | 4.89 | 1.084 |
| 270 | 0.18 | 4.82 | 1.100 |
| 300 | 0.23 | 4.77 | 1.111 |
| 360 | 0.38 | 4.62 | 1.147 |
| 420 | 0.42 | 4.58 | 1.157 |
| 480 | 0.53 | 4.47 | 1.186 |
| 540 | 0.64 | 4.36 | 1.216 |
| 600 | 0.71 | 4.29 | 1.235 |
| 900 | 0.96 | 4.04 | 1.312 |
| 1200 | 0.99 | 4.01 | 1.322 |
| 1500 | 1.03 | 3.97 | 1.335 |
| 1800 | 1.11 | 3.89 | 1.362 |
| 2100 | 1.13 | 3.87 | 1.370 |
| 2400 | 1.15 | 3.85 | 1.377 |
| 2700 | 1.16 | 3.84 | 1.380 |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| s | m bgl | m | - |
| 3000 | 1.18 | 3.82 | 1.387 |
| 3300 | 1.19 | 3.81 | 1.391 |
| 3600 | 1.22 | 3.78 | 1.402 |
| 4500 | 1.23 | 3.77 | 1.406 |
| 5400 | 1.24 | 3.76 | 1.410 |
| 6300 | 1.25 | 3.75 | 1.413 |
| 7200 | 1.26 | 3.74 | 1.417 |
| 8100 | 1.28 | 3.72 | 1.425 |
| 9000 | 1.30 | 3.70 | 1.432 |
| 9900 | 1.32 | 3.68 | 1.440 |
| 10800 | 1.34 | 3.66 | 1.448 |
| 11700 | 1.36 | 3.64 | 1.456 |
| 12600 | 1.40 | 3.60 | 1.472 |
| 13500 | 1.42 | 3.58 | 1.480 |
| 14400 | 1.45 | 3.55 | 1.493 |




$$Permeability, k = \frac{S}{F\,(t_2 - t_1)} \log_e \left({}^{H_1}/_{H_2}\right)$$

$$k = \alpha \frac{S}{F}$$

**S=** 0.017671 m2

**k =** **4.69E-08** m/s

Comments:

Partially saturated response zone, results to be used with caution.




BH320: 1.20-6.80m

bam ritchies

# Borehole Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

bam ritchies

Borehole No: BH321
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 384770.34 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399639.02 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 34.20 mOD | Scale: | 1:50 |
| Date Started: | 18/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 18/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 6.34m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Dark brown mottled light grey and orangish brown slightly gravelly slightly sandy CLAY with low cobble content occasional rootlets (<30mm) and rare soft plastics (<60mm). Sand is fine to coarse. Gravel angular to sub-rounded fine to coarse of mixed lithologies (brick coal and mudstone). Cobbles are angular of brick and sandstone(<120mm). [MADE GROUND] | | (1.00) | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | 1.00 | 33.20 | 1.00 | B | | | | PID | 0.60 | ppm | | | | |
| *0.50m : Orangish brown slightly gravelly coarse sand. Gravel is sub-angular to rounded of sandstone and coal* | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| MADE GROUND: Dark grey slightly clayey gravelly fine to coarse SAND with medium cobble content and frequent clods of clay (<50mm) occasional wire insulation (<45mm) and woody fragments (<20mm). Gravel is angular to sub-angular fine to coarse of mixed lithologies (brick clinker and coal). Cobbles are angular of brick (<50mm). [MADE GROUND] | | | | 1.20 | ES | | | | PID | 0.20 | ppm | | | | |
| | | | | 1.40 | ES | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | D | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=6 | | | | | |
| | | | | 1.50 - 1.60 | D | | | | | | | | | | |
| | | | | 1.20 - 2.00 | Liner | | | | | | | | | | |
| | | | | 1.60 - 2.40 | B | | | | | | | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=1 | | | | | |
| | | | | 2.40 | ES | | | | | | | | | | |
| | | (3.40) | | 2.00 - 3.00 | Liner | | | | PID | 0.00 | ppm | | | | |
| | | | | 2.50 - 2.60 | D | | | | | | | | | | |
| | | | | 2.60 - 3.40 | B | | | | | | | | | | |
| *3.30 - 3.75m : Frequent ash slag clinker and coal* | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=4 | | | | | |
| | | | | 3.40 | ES | | | | | | | | | | |
| | | | | 3.00 - 4.00 | Liner | | | | PID | 0.50 | ppm | | | | |
| | | | | 3.50 - 3.60 | D | | | | | | | | | | |
| | | | | 3.60 - 4.30 | B | | | | | | | | | | |
| | | | | 4.00 - 4.45 | D | | | | | | | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=8 | | | | | |
| | | 4.40 | 29.80 | 4.30 | ES | | | | | | | | | | |
| MADE GROUND: Dark grey slightly gravelly sandy CLAY (strong hydrocarbon odour noted). Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of brick mudstone and coal. [MADE GROUND] | | (0.45) | | 4.00 - 5.00 | Liner | | | | PID | 0.20 | ppm | | | | |
| | | | | 4.50 | ES | | | | | | | | | | |
| | | 4.85 | 29.35 | 4.60 - 4.70 | D | | | | PID | 0.50 | ppm | | | | |
| MADE GROUND: Reddish brown mottled dark grey slightly gravelly CLAY (weak putrid odour noted). Gravel is angular fine to coarse of sandstone. [MADE GROUND] | | (0.75) | | 5.20 | ES | | | | | | | | | | |
| | | | | 5.00 - 5.45 | D | | | | PID | 0.00 | ppm | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=12 | | | | | |
| | | 5.60 | 28.60 | 5.40 - 5.50 | D | | | | | | | | | | |
| | | | | 5.00 - 6.00 | Liner | | | | | | | | | | |
| Extremely weak reddish brown MUDSTONE. Highly weathered, recovered as, sub angular fine to coarse gravel. [MANCHESTER MARL ] | | | | 5.00 - 6.00 | | | | | Falling Head | 1.4E-007 | m/s | | | | |
| | | (0.74) | | 5.70 | ES | | | | | | | | | | |
| | | | | 5.80 - 5.90 | D | | | | | | | | | | |
| | | | | 6.00 - 6.34 | | | | | C | 50 / 210 | | | | | |
| | | 6.34 | 27.86 | | | | | | | | | | | | |
| Borehole Terminated at 6.34m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH321
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 384770.34 mE 399639.02 mN | Checked By: | APB |
| Client: | BAM Nuttall | Ground Level: | 34.20 mOD | Approved By: | JH |
| Engineer: | ARUP | | | Log Status: | FINAL |
| Date Started: | 18/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| Date Completed: | 18/03/2022 | Inclination: | 90 deg. | Final Depth: | 6.34m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.50 | IP | 18/03/2022 | 18/03/2022 | Hand tools | | | Chris Hewitt | Ethan Richardson | |
| 0.00 | 6.00 | | | | | | | | | |
| 1.20 | 6.34 | WLS | 18/03/2022 | 18/03/2022 | T820-627 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 18/03/2022 | 06:00 | 0.00 | 0.00 | Dry | Start of shift |
| 18/03/2022 | 15:00 | 6.34 | 0.00 | 4.31 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 87 | |
| 6.00 | 78 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 78 | |
| 5.00 | 87 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 0.50 | 50 | Plain | |
| SP | 1 | 0.50 | 4.50 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.20 | 910 | Flush cover |
| 0.20 | 0.50 | 903 | Bentonite |
| 0.50 | 4.50 | 902 | Gravel |
| 4.50 | 6.34 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=6 | 0.00 | Dry | | 1 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | T820-627 | 57 |
| 2.00 | S | N=1 | 2.00 | Dry | | 1 | 75 | 0 | 75 | 0 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | T820-627 | 57 |
| 3.00 | S | N=4 | 3.00 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | T820-627 | 57 |
| 4.00 | S | N=8 | 4.00 | Dry | | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | T820-627 | 57 |
| 5.00 | S | N=12 | 5.00 | Dry | | 2 | 75 | 2 | 75 | 2 | 75 | 3 | 75 | 3 | 75 | 4 | 75 | T820-627 | 57 |
| 6.00 | C | 50 / 210 | 5.00 | Dry | | 14 | 75 | 11 | 60 | 14 | 75 | 17 | 75 | 19 | 60 | | | T820-627 | 57 |

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# Water permeability test in a borehole using open systems

Carried out in accordance with BS EN ISO 22282-2:2012. Permeability calculated using the Velocity Graph Method.

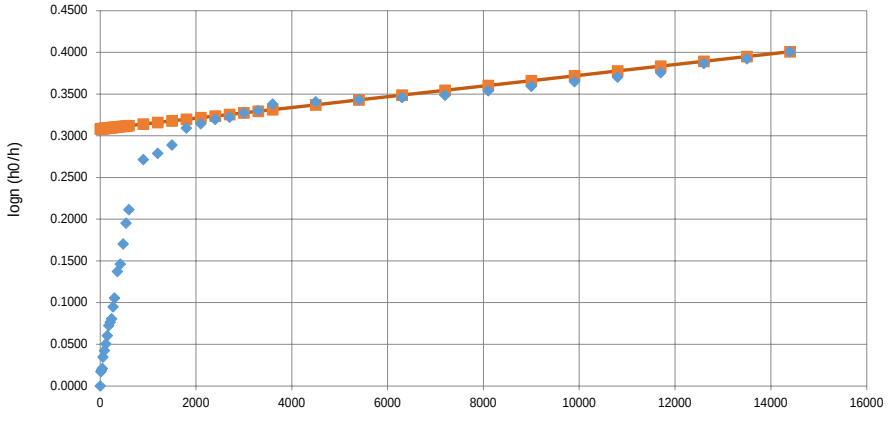
Borehole number: **BH312**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project name: | Victoria North | | Survey grid system: | OSGB | | Hole type: | CP |
| Project number: | 326R | | Co-ordinates: | 384382.83 | mE | Checked by: | APB |
| Client: | BAM Nuttall | | | 399519.93 | mN | Approved by: | JH |
| Engineer: | Andy Bird | | Ground level: | 45.60 | mOD | | |
| Date of test: | 10/03/2022 12:15 | | Test reference: | 1 | | Weather: | Dry, cloudy |
| Test type: | Falling Head | | L/D Ratio | 6.67 | | Groundwater before: | Dry |
| Response zone top: | 4.00 | m bgl | Test Condition: | Cylindrical cavity with: 1.2 < L/D < 10 | | Assumed groundwater level: | 5.00 m bgl |
| Reponse zone base: | 5.00 | m bgl | Intake Factor (F): | 2.42 | | Water added: | 500 l |
| Test section diameter: | 150 | mm | Casing above GL: | 0.30 | m agl | Filter material: | None |
| | | | Hole depth after test: | | m bgl | Water level start of test: | 0.00 m bgl |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| Seconds, s | m bgl | m | - |
| 0 | -0.30 | 5.30 | 1.000 |
| 15 | -0.21 | 5.21 | 1.017 |
| 30 | -0.20 | 5.20 | 1.019 |
| 45 | -0.19 | 5.19 | 1.021 |
| 60 | -0.12 | 5.12 | 1.035 |
| 90 | -0.08 | 5.08 | 1.043 |
| 120 | -0.04 | 5.04 | 1.052 |
| 150 | 0.01 | 4.99 | 1.062 |
| 180 | 0.07 | 4.93 | 1.075 |
| 210 | 0.09 | 4.91 | 1.079 |
| 240 | 0.11 | 4.89 | 1.084 |
| 270 | 0.18 | 4.82 | 1.100 |
| 300 | 0.23 | 4.77 | 1.111 |
| 360 | 0.38 | 4.62 | 1.147 |
| 420 | 0.42 | 4.58 | 1.157 |
| 480 | 0.53 | 4.47 | 1.186 |
| 540 | 0.64 | 4.36 | 1.216 |
| 600 | 0.71 | 4.29 | 1.235 |
| 900 | 0.96 | 4.04 | 1.312 |
| 1200 | 0.99 | 4.01 | 1.322 |
| 1500 | 1.03 | 3.97 | 1.335 |
| 1800 | 1.11 | 3.89 | 1.362 |
| 2100 | 1.13 | 3.87 | 1.370 |
| 2400 | 1.15 | 3.85 | 1.377 |
| 2700 | 1.16 | 3.84 | 1.380 |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| s | m bgl | m | - |
| 3000 | 1.18 | 3.82 | 1.387 |
| 3300 | 1.19 | 3.81 | 1.391 |
| 3600 | 1.22 | 3.78 | 1.402 |
| 4500 | 1.23 | 3.77 | 1.406 |
| 5400 | 1.24 | 3.76 | 1.410 |
| 6300 | 1.25 | 3.75 | 1.413 |
| 7200 | 1.26 | 3.74 | 1.417 |
| 8100 | 1.28 | 3.72 | 1.425 |
| 9000 | 1.30 | 3.70 | 1.432 |
| 9900 | 1.32 | 3.68 | 1.440 |
| 10800 | 1.34 | 3.66 | 1.448 |
| 11700 | 1.36 | 3.64 | 1.456 |
| 12600 | 1.40 | 3.60 | 1.472 |
| 13500 | 1.42 | 3.58 | 1.480 |
| 14400 | 1.45 | 3.55 | 1.493 |




$$Permeability, k = \frac{S}{F\,(t_2 - t_1)} \log_e \left({}^{H_1}/_{H_2}\right)$$

$$k = \alpha \frac{S}{F}$$

**S=** 0.017671 m2

**k =** **4.69E-08** m/s

Comments:

Partially saturated response zone, results to be used with caution.

# BOREHOLE LOG

bam ritchies

Borehole No: BH322
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 384715.20 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399587.28 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 32.49 mOD | Scale: | 1:50 |
| Date Started: | 21/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 21/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 6.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Soil and brick fill (drillers description). [MADE GROUND] | | 0.20 | 32.29 | 0.30 | B | | | | | | | | | | |
| MADE GROUND: Orangish dark brown slightly gravelly coarse SAND with occasional soft plastics (<150mm) and rare fine to coarse gravel sized fragments of ceramics. Gravel is sub-angular to sub-rounded fine to coarse of mixed lithologies (concrete, brick and sandstone). [MADE GROUND] | | (0.70) | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.10 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | 0.90 | 31.59 | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| MADE GROUND: Dark grey gravelly fine to coarse SAND (predominantly of of ash) with low cobble content and rare fine to medium gravel sized fragments of glass and slag (strong hydrocarbon odour noted). Gravel is angular fine to coarse of mixed lithologies (coal, burnt shale and brick). Cobbles are sub-angular of brick. [MADE GROUND] | | | | 1.20 | ES | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.40 | D | | | | PID | 0.60 | ppm | | | | |
| | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=8 | | | | | |
| | | (2.35) | | 1.20 - 2.00 | Liner | | | | | | | | | | |
| | | | | 1.60 - 2.00 | B | | | | | | | | | | |
| | | | | 2.00 | ES | | | | | | | | | | |
| | | | | 2.20 | D | | | | PID | 2.90 | ppm | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=3 | | | | | |
| *2.60 - 2.90m : very clayey* | | | | 2.00 - 3.00 | Liner | | | | | | | | | | |
| *2.70 - 2.90m : frequent coarse gravel sized fragments of glass and hard plastic* | | | | 2.40 - 3.00 | B | | | | | | | | | | |
| *3.05 - 3.20m : dark grey slightly sandy clay (weak organic odour noted)* | | | | 3.00 | ES | | | | | | | | | | |
| *3.20 - 4.75m : slightly clayey (weak organic odour noted)* | | 3.25 | 29.24 | 3.20 | D | | | | PID | 27.90 | ppm | | | | |
| Very loose orangish brown locally dark brown silty slightly clayey fine to coarse SAND. [ALLUVIUM] | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=3 | | | | | |
| | | | | 3.00 - 4.00 | Liner | | | | | | | | | | |
| | | | | 3.40 - 4.00 | B | | | | | | | | | | |
| | | | | 4.00 | ES | | | | | | | | | | |
| | | | | 4.20 | D | | | | PID | 2.00 | ppm | | | | |
| | | | | 4.00 - 4.45 | D | | | | | | | | | | |
| | | | | 4.00 - 4.45 | | | | | S | N=2 | | | | | |
| | | (2.50) | | 4.00 - 5.00 | Liner | | | | | | | | | | |
| | | | | 4.40 - 5.00 | B | | | | | | | | | | |
| | | | | 4.70 | EW | | | | | | | | | | |
| | | | | 5.20 | D | | | | | | | | | | |
| | | | | 5.00 - 5.45 | D | | | | | | | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=4 | | | | | |
| | | | | 5.00 - 6.00 | Liner | | | | | | | | | | |
| | | 5.75 | 26.74 | 5.40 - 5.75 | B | | | | | | | | | | |
| Very dense orangish brown fine to coarse SAND and sub-angular to rounded fine to coarse GRAVEL of sandstone and mudstone. [ALLUVIUM] | | 6.00 | 26.49 | 5.40 - 5.80 | | | | | Falling Head | 7.5E-009 | m/s | | | | |
| | | | | 5.80 | D | | | | | | | | | | |
| | | | | 6.00 - 6.09 | | | | | C | 50 / 50 | | | | | |
| Borehole Terminated at 6.00m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH322
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | WLS |
| | | Co-ordinates: | 384715.20 mE | Checked By: | APB |
| Project No: | 326R | | 399587.28 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 32.49 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 21/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 21/03/2022 | Inclination: | 90 deg. | Final Depth: | 6.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 21/03/2022 | 21/03/2022 | Hand tools | | | Chris Hewitt | | |
| 0.00 | 6.00 | | | | | | | | Omar Coggins (TRU) | |
| 1.20 | 6.00 | WLS | 21/03/2022 | 21/03/2022 | T820-627 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 21/03/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 21/03/2022 | 16:00 | 6.00 | 0.00 | 0.20 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 6.00 | 87 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 87 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| 21/03/2022 | 5.40 | 5.40 | 5 | 4.90 | | |
| 21/03/2022 | 5.40 | 5.40 | 10 | 4.50 | | |
| 21/03/2022 | 5.40 | 5.40 | 15 | 4.10 | | |
| 21/03/2022 | 5.40 | 5.40 | 20 | 4.00 | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 5.40 | 50 | Plain | |
| SP | 1 | 5.40 | 5.80 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 5.40 | 903 | Bentonite |
| 5.40 | 5.80 | 902 | Gravel |
| 5.80 | 6.00 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=8 | 0.00 | Dry | | 1 | 75 | 1 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | 2 | 75 | T820-773 (DART457) | 63 |
| 2.00 | S | N=3 | 2.00 | Dry | | 1 | 75 | 0 | 75 | 0 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | T820-773 (DART457) | 63 |
| 3.00 | S | N=3 | 3.00 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 0 | 75 | T820-773 (DART457) | 63 |
| 4.00 | S | N=2 | 4.00 | Dry | | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 0 | 75 | 1 | 75 | T820-773 (DART457) | 63 |
| 5.00 | S | N=4 | 5.00 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | T820-773 (DART457) | 63 |
| 6.00 | C | 50 / 50 | 5.00 | Dry | | 25 | 40 | | | 50 | 50 | | | | | | | T820-773 (DART457) | 63 |

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# Water permeability test in a borehole using open systems

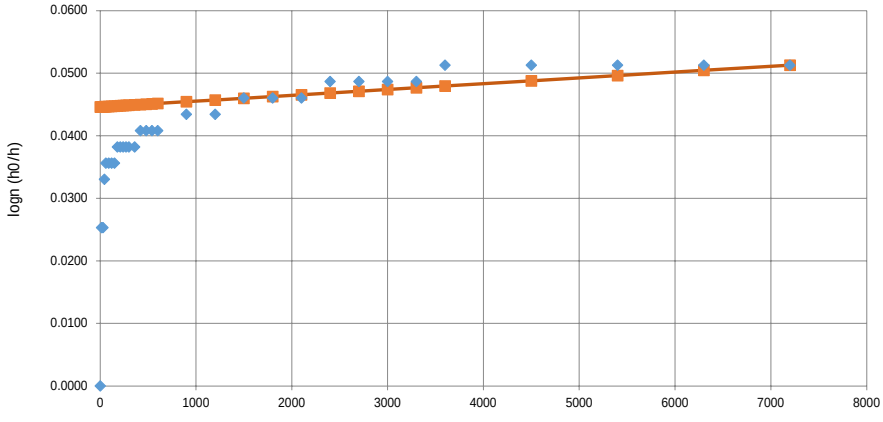
Carried out in accordance with BS EN ISO 22282-2:2012. Permeability calculated using the Velocity Graph Method.

| Borehole number: |
|---|
| **BH322** |
| Page 1 of 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project name: | Victoria north | | Survey grid system: | OSGB | | Hole type: | WS |
| Project number: | 326R | | Co-ordinates: | 384715.20 | mE | Checked by: | APB |
| Client: | BAM Nuttall | | | 399587.28 | mN | Approved by: | |
| Engineer: | Andy Bird | | Ground level: | 32.49 | mOD | | |
| Date of test: | 21/03/2022 11:00 | | Test reference: | 1 | | Weather: | Sunny |
| Test type: | Falling Head | | L/D Ratio | 3.48 | | Groundwater before: | 4.00 m bgl |
| Response zone top: | 5.40 | m bgl | Test Condition: | Cylindrical cavity with: 1.2 < L/D < 10 | | Assumed groundwater level: | 4.00 m bgl |
| Reponse zone base: | 5.80 | m bgl | Intake Factor (F): | 1.28 | | Water added: | 50 l |
| Test section diameter: | 115 | mm | Casing above GL: | 0.00 | m agl | Filter material: | None |
| | | | Hole depth after test: | 5.80 | m bgl | Water level start of test: | 0.00 m bgl |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| Seconds, s | m bgl | m | - |
| 0 | 0.00 | 4.00 | 1.000 |
| 15 | 0.10 | 3.90 | 1.026 |
| 30 | 0.10 | 3.90 | 1.026 |
| 45 | 0.13 | 3.87 | 1.034 |
| 60 | 0.14 | 3.86 | 1.036 |
| 90 | 0.14 | 3.86 | 1.036 |
| 120 | 0.14 | 3.86 | 1.036 |
| 150 | 0.14 | 3.86 | 1.036 |
| 180 | 0.15 | 3.85 | 1.039 |
| 210 | 0.15 | 3.85 | 1.039 |
| 240 | 0.15 | 3.85 | 1.039 |
| 270 | 0.15 | 3.85 | 1.039 |
| 300 | 0.15 | 3.85 | 1.039 |
| 360 | 0.15 | 3.85 | 1.039 |
| 420 | 0.16 | 3.84 | 1.042 |
| 480 | 0.16 | 3.84 | 1.042 |
| 540 | 0.16 | 3.84 | 1.042 |
| 600 | 0.16 | 3.84 | 1.042 |
| 900 | 0.17 | 3.83 | 1.044 |
| 1200 | 0.17 | 3.83 | 1.044 |
| 1500 | 0.18 | 3.82 | 1.047 |
| 1800 | 0.18 | 3.82 | 1.047 |
| 2100 | 0.18 | 3.82 | 1.047 |
| 2400 | 0.19 | 3.81 | 1.050 |
| 2700 | 0.19 | 3.81 | 1.050 |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| s | m bgl | m | - |
| 3000 | 0.19 | 3.81 | 1.050 |
| 3300 | 0.19 | 3.81 | 1.050 |
| 3600 | 0.20 | 3.80 | 1.053 |
| 4500 | 0.20 | 3.80 | 1.053 |
| 5400 | 0.20 | 3.80 | 1.053 |
| 6300 | 0.20 | 3.80 | 1.053 |
| 7200 | 0.20 | 3.80 | 1.053 |




$$Permeability, k = \frac{S}{F\,(t_2 - t_1)} \log_e \left({}^{H_1}/_{H_2}\right)$$

$$k = \alpha \frac{S}{F}$$

**S=** 0.010387 m2

**k =** **7.53E-09** m/s

Comments:

Partially saturated response zone, use results with caution.




BH322: 1.20-6.00m

bam ritchies

# Borehole Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

Borehole No: BH323
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 384658.40 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399576.88 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 30.21 mOD | Scale: | 1:50 |
| Date Started: | 22/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 22/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 2.65m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| MADE GROUND: Dark greyish brown slightly sandy slightly gravelly CLAY with low cobble content and frequent roots (<200mm), occasional fabrics (<160mm), rare soft plastics (<25mm) and coarse gravel sized fragments of glass. Sand is fine to coarse. Gravel is angular to sub-angular of sandstone, slate and brick. Cobbles are angular of slate and brick. [MADE GROUND] | | (0.40) | | 0.30 | B | | | | | | | | | | |
| | | 0.40 | 29.81 | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | (1.50) | | 1.00 | B | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 | ES | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.40 | D | | | | PID | 0.00 | ppm | | | | |
| MADE GROUND: Dark grey and orangish brown slightly gravelly silty fine to coarse SAND with frequent soft plastics (<300mm), occasional fabrics (<250mm) and rare cobble sized fragments of roofing tiles (<170mm). Gravel is angular fine to coarse of mixed lithologies including sandstone mudstone and brick. [MADE GROUND] | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=4 | | | | | |
| | | 1.90 | 28.31 | 1.20 - 2.00 | Liner | | | | | | | | | | |
| | | | | 1.50 - 1.90 | B | | | | | | | | | | |
| *1.00 - 1.20m : 1nr Cobble of sandstone* | | | | 1.95 | | | | | PP | 147 | kPa | | | | |
| | | | | 1.95 | | | | | PP | 147 | kPa | | | | |
| | | | | 1.95 | | | | | PP | 147 | kPa | | | | |
| | | | | 2.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.00 | ppm | | | | |
| | | | | 1.70 - 2.60 | | | | | Falling Head | 5.7E-008 | m/s | | | | |
| | | | | 2.20 | D | | | | | | | | | | |
| | | | | 2.21 | | | | | PP | 252 | kPa | | | | |
| | | | | 2.21 | | | | | PP | 275 | kPa | | | | |
| | | | | 2.21 | | | | | PP | 294 | kPa | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=37 | | | | | |
| | | | | 2.00 - 2.60 | Liner | | | | | | | | | | |
| | | | | 2.30 - 2.60 | B | | | | | | | | | | |
| | | | | 2.50 | | | | | PP | 245 | kPa | | | | |
| | | | | 2.50 | | | | | PP | 265 | kPa | | | | |
| | | | | 2.50 | | | | | PP | 265 | kPa | | | | |
| | | | | 2.60 - 2.65 | | | | | C | 50 / 30 | | | | | |
| [MANCHESTER MARL] Very weak reddish brown MUDSTONE. Locally weathered recovered as, clay. | | 2.65 | 27.56 | | | | | | | | | | | | |
| Borehole Terminated at 2.65m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH323
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | WLS |
| | | Co-ordinates: | 384658.40 mE | Checked By: | APB |
| Project No: | 326R | | 399576.88 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 30.21 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 22/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 22/03/2022 | Inclination: | 90 deg. | Final Depth: | 2.65m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 22/03/2022 | 22/03/2022 | Hand tools | | | Chris Hewitt | Ethan Richardson | |
| 0.00 | 2.65 | | | | | | | | | |
| 1.20 | 2.65 | WLS | 22/03/2022 | 22/03/2022 | T820-627 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 22/03/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 22/03/2022 | 13:00 | 2.65 | 2.00 | 0.20 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 2.60 | 87 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 2.00 | 87 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| | | | |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 0.50 | 50 | Plain | |
| SP | 1 | 0.50 | 1.70 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.20 | 910 | Flush cover |
| 0.20 | 0.50 | 903 | Bentonite |
| 0.50 | 1.70 | 902 | Gravel |
| 1.70 | 2.65 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=4 | 0.00 | Dry | | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | 1 | 75 | T820-773 (DART457) | 63 |
| 2.00 | S | N=37 | 2.00 | Dry | | 5 | 75 | 5 | 75 | 7 | 75 | 10 | 75 | 10 | 75 | 10 | 75 | T820-773 (DART457) | 63 |
| 2.60 | C | 50 / 30 | 2.00 | Dry | | 25 | 20 | | | 50 | 30 | | | | | | | T820-773 (DART457) | 63 |

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# Water permeability test in a borehole using open systems

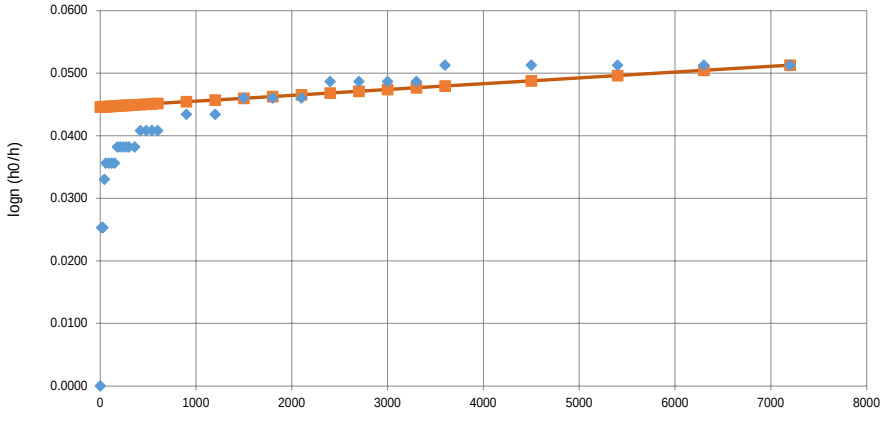
Carried out in accordance with BS EN ISO 22282-2:2012. Permeability calculated using the Velocity Graph Method.

| Borehole number: |
|---|
| **BH322** |
| Page 1 of 1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project name: | Victoria north | | Survey grid system: | OSGB | | Hole type: | WS |
| Project number: | 326R | | Co-ordinates: | 384715.20 | mE | Checked by: | APB |
| Client: | BAM Nuttall | | | 399587.28 | mN | Approved by: | |
| Engineer: | Andy Bird | | Ground level: | 32.49 | mOD | | |
| Date of test: | 21/03/2022 11:00 | | Test reference: | 1 | | Weather: | Sunny |
| Test type: | Falling Head | | L/D Ratio | 3.48 | | Groundwater before: | 4.00 m bgl |
| Response zone top: | 5.40 | m bgl | Test Condition: | Cylindrical cavity with: 1.2 < L/D < 10 | | Assumed groundwater level: | 4.00 m bgl |
| Reponse zone base: | 5.80 | m bgl | Intake Factor (F): | 1.28 | | Water added: | 50 l |
| Test section diameter: | 115 | mm | Casing above GL: | 0.00 | m agl | Filter material: | None |
| | | | Hole depth after test: | 5.80 | m bgl | Water level start of test: | 0.00 m bgl |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| Seconds, s | m bgl | m | - |
| 0 | 0.00 | 4.00 | 1.000 |
| 15 | 0.10 | 3.90 | 1.026 |
| 30 | 0.10 | 3.90 | 1.026 |
| 45 | 0.13 | 3.87 | 1.034 |
| 60 | 0.14 | 3.86 | 1.036 |
| 90 | 0.14 | 3.86 | 1.036 |
| 120 | 0.14 | 3.86 | 1.036 |
| 150 | 0.14 | 3.86 | 1.036 |
| 180 | 0.15 | 3.85 | 1.039 |
| 210 | 0.15 | 3.85 | 1.039 |
| 240 | 0.15 | 3.85 | 1.039 |
| 270 | 0.15 | 3.85 | 1.039 |
| 300 | 0.15 | 3.85 | 1.039 |
| 360 | 0.15 | 3.85 | 1.039 |
| 420 | 0.16 | 3.84 | 1.042 |
| 480 | 0.16 | 3.84 | 1.042 |
| 540 | 0.16 | 3.84 | 1.042 |
| 600 | 0.16 | 3.84 | 1.042 |
| 900 | 0.17 | 3.83 | 1.044 |
| 1200 | 0.17 | 3.83 | 1.044 |
| 1500 | 0.18 | 3.82 | 1.047 |
| 1800 | 0.18 | 3.82 | 1.047 |
| 2100 | 0.18 | 3.82 | 1.047 |
| 2400 | 0.19 | 3.81 | 1.050 |
| 2700 | 0.19 | 3.81 | 1.050 |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| s | m bgl | m | - |
| 3000 | 0.19 | 3.81 | 1.050 |
| 3300 | 0.19 | 3.81 | 1.050 |
| 3600 | 0.20 | 3.80 | 1.053 |
| 4500 | 0.20 | 3.80 | 1.053 |
| 5400 | 0.20 | 3.80 | 1.053 |
| 6300 | 0.20 | 3.80 | 1.053 |
| 7200 | 0.20 | 3.80 | 1.053 |




$$Permeability, k = \frac{S}{F\,(t_2 - t_1)} \log_e \left({}^{H_1}/_{H_2}\right)$$

$$k = \alpha \frac{S}{F}$$

**S=** 0.010387 m2

**k =** **7.53E-09** m/s

Comments:

Partially saturated response zone, use results with caution.




BH323: 1.20-2.60m

bam ritchies

# Borehole Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# DYNAMIC CONE PENETRATION TEST

Test Location:
**BH323**


| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384658.40 | mE | Checked by: | APB |
| Project No: | 326R | | 399576.88 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 30.21 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 04/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 65 | | 0 | 0 |
| 1 | 1 | 132 | | 67 | 67 |
| 1 | 2 | 185 | | 53 | 120 |
| 1 | 3 | 226 | | 41 | 161 |
| 1 | 4 | 330 | | 104 | 265 |
| 1 | 5 | 355 | | 25 | 290 |
| 1 | 6 | 394 | | 39 | 329 |
| 1 | 7 | 460 | | 66 | 395 |
| 1 | 8 | 540 | | 80 | 475 |
| 1 | 9 | 710 | | 170 | 645 |
| 1 | 10 | 750 | | 40 | 685 |
| 1 | 11 | 780 | | 30 | 715 |
| 1 | 12 | 815 | | 35 | 750 |
| 1 | 13 | 860 | | 45 | 795 |
| 1 | 14 | 900 | 115 | 40 | 835 |
| 1 | 15 | 145 | | 30 | 865 |
| 1 | 16 | 165 | | 20 | 885 |
| 1 | 17 | 230 | | 65 | 950 |
| 1 | 18 | 270 | | 40 | 990 |
| 1 | 19 | 304 | | 34 | 1024 |
| 1 | 20 | 345 | | 41 | 1065 |
| 1 | 21 | 380 | | 35 | 1100 |
| 1 | 22 | 412 | | 32 | 1132 |
| 1 | 23 | 450 | | 38 | 1170 |
| 1 | 24 | 494 | | 44 | 1214 |
| 1 | 25 | 540 | | 46 | 1260 |
| 1 | 26 | 610 | | 70 | 1330 |
| 1 | 27 | 666 | | 56 | 1386 |
| 1 | 28 | 732 | | 66 | 1452 |
| 1 | 29 | 800 | | 68 | 1520 |
| 1 | 30 | 851 | | 51 | 1571 |
| 1 | 31 | 882 | 90 | 31 | 1602 |
| 1 | 32 | 105 | | 15 | 1617 |
| 1 | 33 | 115 | | 10 | 1627 |
| 1 | 34 | 122 | | 7 | 1634 |
| 1 | 35 | 130 | | 8 | 1642 |
| 1 | 36 | 136 | | 6 | 1648 |
| 1 | 37 | 145 | | 9 | 1657 |
| 1 | 38 | 160 | | 15 | 1672 |
| 1 | 39 | 167 | | 7 | 1679 |
| 1 | 40 | 170 | | 3 | 1682 |
| 1 | 41 | 174 | | 4 | 1686 |
| 1 | 42 | 182 | | 8 | 1694 |
| 1 | 43 | 184 | | 2 | 1696 |
| 2 | 45 | 205 | | 21 | 1717 |
| 2 | 47 | 210 | | 5 | 1722 |
| 2 | 49 | 220 | | 10 | 1732 |
| 5 | 54 | 264 | | 44 | 1776 |
| 5 | 59 | 290 | | 26 | 1802 |
| 5 | 64 | 320 | | 30 | 1832 |

Comments:
TRL carried out adjacent to inspection pit. DCP TRL test terminated due to refusal at 2375mm.

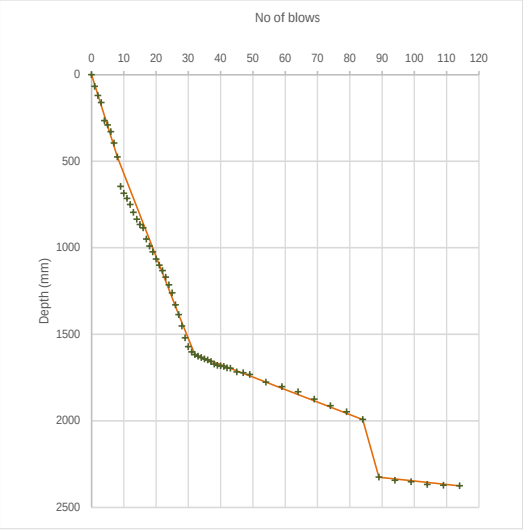
# DYNAMIC CONE PENETRATION TEST

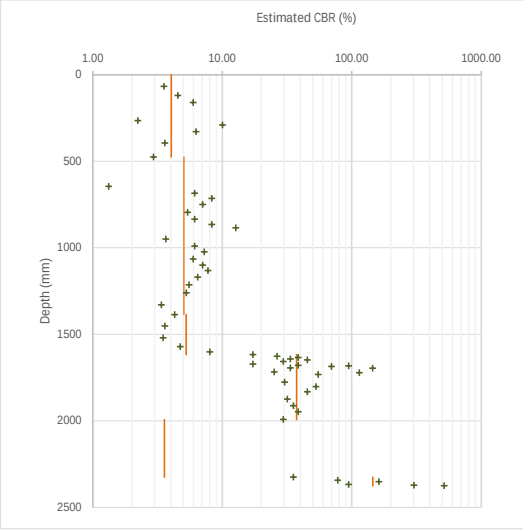
Test Location: **BH323**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384658.40 | mE | Checked by: | APB |
| Project No: | 326R | | 399576.88 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 30.21 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 04/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 5 | 69 | 362 | | 42 | 1874 |
| 5 | 74 | 400 | | 38 | 1912 |
| 5 | 79 | 435 | | 35 | 1947 |
| 5 | 84 | 480 | | 45 | 1992 |
| 5 | 89 | 518 | | 38 | 2325 |
| 5 | 94 | 536 | | 18 | 2343 |
| 5 | 99 | 545 | | 9 | 2352 |
| 5 | 104 | 560 | | 15 | 2367 |
| 5 | 109 | 565 | | 5 | 2372 |
| 5 | 114 | 568 | | 3 | 2375 |




| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 475 | 4 |
| 2 | 475 | 1386 | 5.1 |
| 3 | 1386 | 1617 | 5.3 |
| 4 | 1617 | 1992 | 37 |
| 5 | 1992 | 2325 | 3.6 |
| 6 | 2325 | 2375 | 150 |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out adjacent to inspection pit. DCP TRL test terminated due to refusal at 2375mm.

# BOREHOLE LOG

Borehole No: BH324
Sheet 1 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384593.99 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399584.60 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 44.07 mOD | Scale: | 1:50 |
| Date Started: | 04/04/2022 | | | Log Status: | FINAL |
| Date Completed: | 06/04/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 15.30m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Dark grey brown silty gravelly fine to coarse SAND (partially of ash) with low rootlet content (<5mm) and rare medium and coarse gravel sized pockets of grey black mottled clay. Gravel is sub angular fine of mixed lithology including clinker, slag and brick. [MADE GROUND] | | | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 6.10 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 4.10 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | (3.00) | | 1.20 - 1.65 | B | | | | PID | 1.00 | ppm | | | | |
| | | | | 1.20 - 1.65 | D | | | | | | | | | | |
| | | | | 1.20 - 1.65 | | | | | S | N=2 | | | | | |
| *1.80m : Rare angular fine gravel sized fragments of Ironstone* | | | | 1.80 | D | | | | | | | | | | |
| *2.00 - 2.70m : Rare angular fine gravel sized fragments of shale and coal.* | | | | 2.00 | ES | | | | | | | | | | |
| | | | | 2.00 - 2.45 | B | | | | PID | 0.30 | ppm | | | | |
| | | | | 2.00 - 2.45 | D | | | | | | | | | | |
| | | | | 2.00 - 2.45 | | | | | S | N=2 | | | | | |
| MADE GROUND: Brown locally greyish black mottled sandy gravelly CLAY with low rootlet content (<5mm). Gravel is sub angular fine to coarse of mixed lithology including clinker, slag and brick. [MADE GROUND] | | | | 2.70 | D | | | | | | | | | | |
| | | (3.00) | 41.07 | 3.00 | ES | | | | | | | | | | |
| *1.80m : Rare angular fine gravel sized fragments of Ironstone* | | | | | | | | | PID | 0.20 | ppm | | | | |
| *2.00 - 2.70m : Rare angular fine gravel sized fragments of shale and coal.* | | | | 3.00 - 3.45 | B | | | | | | | | | | |
| | | | | 3.00 - 3.45 | D | | | | | | | | | | |
| | | | | 3.00 - 3.45 | | | | | S | N=5 | | | | | |
| MADE GROUND: Brown locally greyish black mottled sandy gravelly CLAY with low rootlet content (<5mm). Gravel is sub angular fine to medium of mixed lithology including clinker, slag and brick. [MADE GROUND] | | (2.00) | | 4.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.10 | ppm | | | | |
| | | | | 4.00 - 4.45 | UT-NR | 100 | | 12 | | | | | | | |
| | | | | 4.00 - 4.50 | B | | | | | | | | | | |
| MADE GROUND: Dark grey black silty gravelly fine to coarse SAND (predominantly of ash). Gravel is sub angular fine to coarse of mixed lithology including brick, sandstone and clinker. [MADE GROUND] | | 5.00 | 39.07 | 5.00 | ES | | | | | | | | | | |
| | | | 39.07 | | | | | | PID | 0.20 | ppm | | | | |
| | | | | 5.00 - 5.45 | B | | | | | | | | | | |
| | | | | 5.00 - 5.45 | D | | | | | | | | | | |
| | | | | 5.00 - 5.45 | | | | | S | N=3 | | | | | |
| | | | | 5.70 | D | | | | | | | | | | |
| | | | | 6.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.20 | ppm | | | | |
| | | | | 6.00 - 6.45 | B | | | | | | | | | | |
| | | | | 6.00 - 6.45 | D | | | | | | | | | | |
| | | | | 6.00 - 6.45 | | | | | S | N=16 | | | | | |
| | | (3.50) | | | | | | | | | | | | | |
| | | | | 7.00 | D | | | | | | | | | | |
| | | | | 7.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.20 | ppm | | | | |
| | | | | 7.50 - 7.95 | B | | | | | | | | | | |
| | | | | 7.50 - 7.95 | D | | | | | | | | | | |
| | | | | 7.50 - 7.95 | | | | | S | N=4 | | | | | |
| MADE GROUND: Reddish brown slightly silty slightly gravelly fine to coarse SAND with localised medium to coarse gravel pockets of firm brown grey mottled clay. Gravel is sub angular fine to coarse of sandstone. [MADE GROUND] | | 8.50 | 35.57 | 8.50 | D | | | | | | | | | | |
| | | | | 9.00 | ES | | | | | | | | | | |
| | | | | | | | | | PID | 0.10 | ppm | | | | |
| *8.50m : Rare fine gravel sized pockets of white fine and medium sand.* | | | | 9.00 - 9.45 | B | | | | | | | | | | |
| | | | | 9.00 - 9.45 | D | | | | | | | | | | |
| | | | | 9.00 - 9.45 | | | | | S | N=9 | | | | | |
| | | | | 10.00 | D | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE LOG

bam ritchies

Borehole No: BH324
Sheet 2 of 2

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384593.99 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399584.60 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 44.07 mOD | Scale: | 1:50 |
| Date Started: | 04/04/2022 | | | Log Status: | FINAL |
| Date Completed: | 06/04/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 15.30m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Reddish brown slightly silty slightly gravelly fine to coarse SAND with localised medium to coarse gravel pockets of firm brown grey mottled clay. Gravel is sub angular fine to coarse of sandstone. [MADE GROUND] | | | | 10.50 | | | | | PP | 12 | kPa | | | | |
| | | | | 10.50 | | | | | PP | 13 | kPa | | | | |
| | | | | 10.50 | | | | | PP | 13 | kPa | | | | |
| | | | | 10.50 | | | | | HV | P48,R32 | kPa | | | | |
| *10.95 - 11.00m : Rare fine gravel sized pockets of red and black burnt shale* | | | | 10.50 | | | | | HV | P50,R25 | kPa | | | | |
| | | | | 10.50 | | | | | HV | P50,R38 | kPa | | | | |
| | | | | 10.50 - 10.95 | UT | 100 | 100 | 26 | | | | | | | |
| | | | | 10.95 - 11.00 | D | | | | | | | | | | |
| *12.00m : Silty slightly clayey.* | | | | 12.00 | ES | | | | | | | | | | |
| | | | | 12.00 - 12.45 | B | | | | | | | | | | |
| | | (6.30) | | 12.00 - 12.45 | | | | | S | N=11 | | | | | |
| *13.00m : Rare medium to coarse gravel of clinker.* | | | | 13.00 | D | | | | | | | | | | |
| | | | | 13.00 | ES | | | | | | | | | | |
| | | | | 13.50 - 13.95 | B | | | | | | | | | | |
| | | | | 13.50 - 13.95 | | | | | C | N=20 | | | | | |
| | | | | 14.50 | D | | | | | | | | | | |
| | | 14.80 | 29.27 | | | | | | | | | | | | |
| Stiff locally very stiff reddish brown locally fissile slightly gravelly CLAY. Gravel is sub angular fine to coarse of sandstone. [MANCHESTER MARL] | | (0.50) | | 15.00 | ES | | | | | | | | | | |
| | | | | 15.00 - 15.08 | | | | | C | 50 / 35 | | | | | |
| | | 15.30 | 28.77 | 15.00 - 15.30 | B | | | | | | | | | | |
| | | | | 15.30 - 15.32 | | | | | C | 50 / 10 | | | | | |
| Borehole Terminated at 15.30m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH324
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384593.99 mE | Checked By: | APB |
| Project No: | 326R | | 399584.60 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 44.07 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 04/04/2022 | Orientation: | - - deg. | | |
| Date Completed: | 06/04/2022 | Inclination: | 90 deg. | Final Depth: | 15.30m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 04/04/2022 | 04/04/2022 | Hand tools | | | Chris Hewitt | Andy Bird | |
| 0.00 | 15.30 | | | | | | | | | |
| 1.20 | 15.30 | CP | | 06/04/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 04/04/2022 | 08:00 | 0.00 | 0.00 | Dry | Start of shift |
| 04/04/2022 | 16:30 | 1.20 | 0.00 | Dry | End of shift |
| 05/04/2022 | 06:15 | 1.20 | 0.00 | Dry | Start of shift |
| 05/04/2022 | 16:30 | 15.30 | 15.00 | 14.50 | End of shift |
| 06/04/2022 | 06:15 | 15.30 | 15.00 | 12.20 | Start of shift |
| 06/04/2022 | 12:00 | 15.30 | 0.00 | 11.50 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 15.30 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 15.00 | 150 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 15.00 | 15.30 | 01:00 | Chiselling. Cylinder cutter. Chisel to prove competent bed rock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 13.10 | 50 | Plain | |
| SP | 1 | 13.10 | 14.80 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 13.10 | 903 | Bentonite |
| 13.10 | 14.80 | 902 | Gravel |
| 14.80 | 15.30 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | S | N=2 | 0.00 | Dry | | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 0 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | S | N=2 | 1.70 | Dry | | 1 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | S | N=5 | 2.90 | Dry | | 1 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 5.00 | S | N=3 | 4.79 | Dry | | 1 | 75 | 0 | 75 | 1 | 75 | 0 | 75 | 1 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 6.00 | S | N=16 | 5.90 | Dry | | 2 | 75 | 5 | 75 | 6 | 75 | 4 | 75 | 3 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 7.50 | S | N=4 | 7.40 | Dry | | 1 | 75 | 2 | 75 | 1 | 75 | 2 | 75 | 0 | 75 | 1 | 75 | BRW02 (AR1150) | 66 |
| 9.00 | S | N=9 | 8.90 | Dry | | 2 | 75 | 2 | 75 | 3 | 75 | 2 | 75 | 1 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 12.00 | S | N=11 | 11.90 | Dry | | 2 | 75 | 1 | 75 | 2 | 75 | 3 | 75 | 3 | 75 | 3 | 75 | BRW02 (AR1150) | 66 |
| 13.50 | C | N=20 | 13.40 | 11.50 | | 3 | 75 | 4 | 75 | 4 | 75 | 5 | 75 | 5 | 75 | 6 | 75 | BRW02 (AR1150) | 66 |
| 15.00 | C | 50 / 35 | 14.90 | 11.90 | | 25 | 40 | | | 50 | 35 | | | | | | | BRW02 (AR1150) | 66 |
| 15.30 | C | 50 / 10 | 15.00 | 14.50 | | 25 | 5 | | | 50 | 10 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# DYNAMIC CONE PENETRATION TEST

Test Location:
**BH324**


| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384593.99 | mE | Checked by: | APB |
| Project No: | 326R | | 399584.60 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 44.07 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 04/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 88 | | 0 | 0 |
| 3 | 3 | 150 | | 62 | 62 |
| 3 | 6 | 185 | | 35 | 97 |
| 3 | 9 | 215 | | 30 | 127 |
| 3 | 12 | 320 | | 105 | 232 |
| 3 | 15 | 412 | | 92 | 324 |
| 3 | 18 | 519 | | 107 | 431 |
| 3 | 21 | 562 | | 43 | 474 |
| 9 | 30 | 605 | | 43 | 517 |
| 9 | 39 | 680 | | 75 | 592 |
| 15 | 54 | 796 | | 116 | 708 |
| 15 | 69 | 870 | 74 | 74 | 782 |
| 15 | 84 | 250 | | 176 | 958 |
| 15 | 99 | 446 | | 196 | 1154 |
| 17 | 116 | 864 | 120 | 418 | 1572 |
| 2 | 118 | 340 | | 220 | 1792 |
| 2 | 120 | 416 | | 76 | 1868 |
| 2 | 122 | 562 | | 146 | 2014 |
| 2 | 124 | 650 | | 88 | 2102 |
| 2 | 126 | 728 | | 78 | 2180 |
| 2 | 128 | 784 | | 56 | 2236 |
| 2 | 130 | 860 | | 76 | 2312 |
| 2 | 132 | 941 | 152 | 81 | 2393 |
| 2 | 134 | 184 | | 32 | 2425 |
| 2 | 136 | 216 | | 32 | 2457 |
| 2 | 138 | 282 | | 66 | 2523 |
| 2 | 140 | 360 | | 78 | 2601 |
| 2 | 142 | 416 | | 56 | 2657 |
| 2 | 144 | 479 | | 63 | 2720 |
| 2 | 146 | 542 | | 63 | 2783 |
| 2 | 148 | 590 | | 48 | 2831 |
| 2 | 150 | 660 | 90 | 70 | 2901 |
| 2 | 152 | 704 | | 614 | 3515 |
| 2 | 154 | 750 | | 46 | 3561 |
| 2 | 156 | 780 | | 30 | 3591 |
| 2 | 158 | 810 | | 30 | 3621 |
| 2 | 160 | 822 | | 12 | 3633 |
| 2 | 162 | 834 | | 12 | 3645 |
| 2 | 164 | 865 | 64 | 31 | 3676 |
| 2 | 166 | 94 | | 30 | 3706 |
| 2 | 168 | 147 | | 53 | 3759 |
| 2 | 170 | 210 | | 63 | 3822 |
| 2 | 172 | 250 | | 40 | 3862 |
| 2 | 174 | 294 | | 44 | 3906 |
| 2 | 176 | 342 | | 48 | 3954 |
| 2 | 178 | 372 | | 30 | 3984 |
| 2 | 180 | 410 | | 38 | 4022 |
| 5 | 185 | 447 | | 37 | 4059 |
| 5 | 190 | 485 | | 38 | 4097 |
| 5 | 195 | 580 | | 95 | 4192 |

Comments:
TRL carried out adjacent to inspection pit of ORIGINAL BH324 at base of slope. DCP TRL test terminated due to refusal at 4527mm.

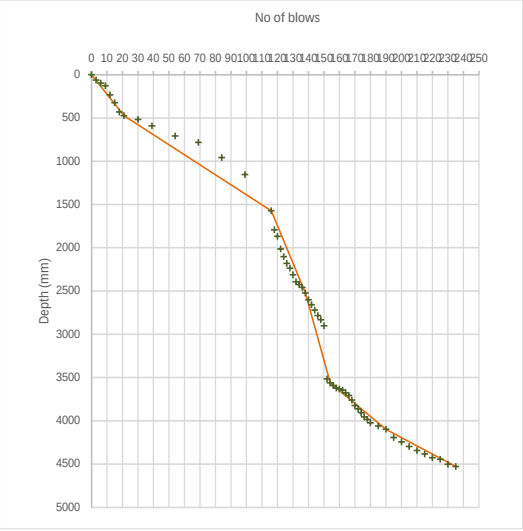
# DYNAMIC CONE PENETRATION TEST

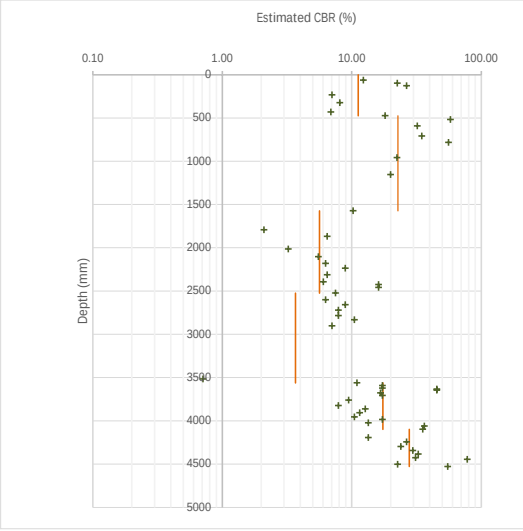
Test Location: **BH324**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384593.99 | mE | Checked by: | APB |
| Project No: | 326R | | 399584.60 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 44.07 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 04/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 5 | 200 | 630 | | 50 | 4242 |
| 5 | 205 | 685 | | 55 | 4297 |
| 5 | 210 | 730 | | 45 | 4342 |
| 5 | 215 | 771 | | 41 | 4383 |
| 5 | 220 | 814 | | 43 | 4426 |
| 5 | 225 | 832 | | 18 | 4444 |
| 5 | 230 | 890 | | 58 | 4502 |
| 5 | 235 | 915 | | 25 | 4527 |
| | | | | | |
| | | | | | |




| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 474 | 11 |
| 2 | 474 | 1572 | 23 |
| 3 | 1572 | 2523 | 5.6 |
| 4 | 2523 | 3561 | 3.7 |
| 5 | 3561 | 4097 | 17 |
| 6 | 4097 | 4527 | 28 |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out adjacent to inspection pit of ORIGINAL BH324 at base of slope. DCP TRL test terminated due to refusal at 4527mm.

# BOREHOLE LOG

bam ritchies

Borehole No: BH325
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | CP |
| Project No: | 326R | Co-ordinates: | 384446.11 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399359.16 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 29.95 mOD | Scale: | 1:50 |
| Date Started: | 16/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 16/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 4.50m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tarmac (drillers description) [MADE GROUND ] | | 0.10 | 29.85 | | | | | | | | | | | | |
| MADE GROUND: Dark and light grey gravelly slightly silty fine to coarse SAND (predominantly of ash) with high cobble content. Gravel is sub-angular fine to coarse of brick concrete and sandstone masonry. Cobbles are angular of brick concrete and sandstone masonry (<110mm). [MADE GROUND] | | (1.90) | | 0.30 | B | | | | | | | | | | |
| | | | | 0.30 | D | | | | | | | | | | |
| | | | | 0.30 | ES | | | | | | | | | | |
| | | | | 0.50 | B | | | | PID | 0.80 | ppm | | | | |
| | | | | 0.50 | D | | | | | | | | | | |
| | | | | 0.50 | ES | | | | | | | | | | |
| | | | | 1.00 | B | | | | PID | 2.30 | ppm | | | | |
| | | | | 1.00 | D | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | | | | | | |
| | | | | 1.20 | ES | | | | PID | 5.30 | ppm | | | | |
| *1.20 - 1.80m : sand is of mixed lithologies (brick, concrete and ash)* | | | | 1.20 - 1.65 | B | | | | PID | 0.20 | ppm | | | | |
| | | | | 1.20 - 1.65 | | | | | C | N=32 | | | | | |
| *1.80 - 2.90m : very clayey* | | | | 1.80 | D | | | | | | | | | | |
| MADE GROUND: Dark grey gravelly sandy CLAY with high cobble content. Sand is fine to coarse of ash. Gravel is sub-angular to sub-rounded fine to coarse of brick concrete sandstone masonry and sandstone. Cobbles are angular of brick concrete and sandstone masonry (<160mm). [MADE GROUND] | | 2.00 | 27.95 | 2.00 | ES | | | | | | | | | | |
| | | | | 2.00 - 2.45 | B | | | | PID | 0.50 | ppm | | | | |
| | | | | 2.00 - 2.45 | | | | | C | N=31 | | | | | |
| | | | | 1.50 - 3.50 | | | | | Falling Head | 3.4E-007 | m/s | | | | |
| | | (1.90) | | 2.80 | D | | | | | | | | | | |
| *2.00m : Predominantly cobbles with a little silt, sand and gravel.* | | | | 3.00 - 3.45 | | | | | C | N=27 | | | | | |
| Very weak reddish brown coarse SANDSTONE recovered as, sub angular fine to coarse gravel. [CHESTER PEBBLE BEDS] | | 3.90 | 26.05 | 4.00 - 4.04 | | | | | S | 50 / 40 | | | | | |
| | | (0.60) | | 4.00 - 4.30 | D | | | | | | | | | | |
| Borehole Terminated at 4.50m | | 4.50 | 25.45 | 4.50 | D | | | | | | | | | | |
| | | | | 4.50 - 4.53 | | | | | C | 50 / 15 | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH325
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | CP |
| | | Co-ordinates: | 384446.11 mE | Checked By: | APB |
| Project No: | 326R | | 399359.16 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 29.95 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 16/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 16/03/2022 | Inclination: | 90 deg. | Final Depth: | 4.50m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 16/03/2022 | 16/03/2022 | Hand tools | | | Chris Hewitt | Ethan Richardson | |
| 0.00 | 4.50 | | | | | | | | | |
| 1.20 | 4.50 | CP | 16/03/2022 | 16/03/2022 | T820-068 | | | Chris Hewitt | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 16/03/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 16/03/2022 | 17:30 | 4.50 | 0.00 | 3.50 | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.50 | 150 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| | | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| 3.00 | 4.00 | No sample pushed obstruction down |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| 4.30 | 4.50 | 01:00 | Chiselling. Shell. Chisel to prove competent bedrock |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| | | | | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| SP | 1 | 0.00 | 0.50 | 50 | Plain | |
| SP | 1 | 0.50 | 3.50 | 50 | Slotted | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.20 | 910 | Flush cover |
| 0.20 | 0.50 | 903 | Bentonite |
| 0.50 | 3.50 | 902 | Gravel |
| 3.50 | 4.50 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.20 | C | N=32 | 0.00 | Dry | | 12 | 75 | 12 | 75 | 9 | 75 | 7 | 75 | 10 | 75 | 6 | 75 | BRW02 (AR1150) | 66 |
| 2.00 | C | N=31 | 1.70 | Dry | | 8 | 75 | 6 | 75 | 5 | 75 | 7 | 75 | 9 | 75 | 10 | 75 | BRW02 (AR1150) | 66 |
| 3.00 | C | N=27 | 2.90 | Dry | | 4 | 75 | 5 | 75 | 6 | 75 | 6 | 75 | 8 | 75 | 7 | 75 | BRW02 (AR1150) | 66 |
| 4.00 | S | 50 / 40 | 3.90 | 3.60 | | 25 | | | | 50 | 40 | | | | | | | BRW02 (AR1150) | 66 |
| 4.50 | C | 50 / 15 | 4.50 | 3.50 | | 25 | 10 | | | 50 | 15 | | | | | | | BRW02 (AR1150) | 66 |

Reason for Hole Termination: Reached bedrock

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# Water permeability test in a borehole using open systems

Carried out in accordance with BS EN ISO 22282-2:2012. Permeability calculated using the Velocity Graph Method.

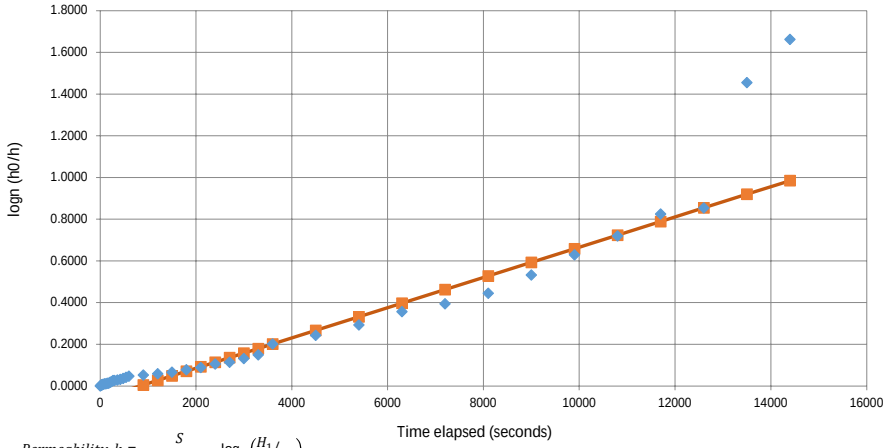
Borehole number: **BH325**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project name: | Victoria North | | Survey grid system: | OSGB | | Hole type: | CP |
| Project number: | 326R | | Co-ordinates: | 384446.11 | mE | Checked by: | APB |
| Client: | BAM Nuttall | | | 399359.16 | mN | Approved by: | JH |
| Engineer: | Andy Bird | | Ground level: | 29.95 | mOD | | |
| Date of test: | 16/03/2022 12:30 | | Test reference: | 1 | | Weather: | Dry, clear |
| Test type: | Falling Head | | L/D Ratio | 13.33 | | Groundwater before: | Dry |
| Response zone top: | 1.50 | m bgl | Test Condition: | Cylindrical cavity with: L/D > 10 | | Assumed groundwater level: | 3.50 m bgl |
| Reponse zone base: | 3.50 | m bgl | Intake Factor (F): | 3.83 | | Water added: | 200 l |
| Test section diameter: | 150 | mm | Casing above GL: | 0.40 | m agl | Filter material: | None |
| | | | Hole depth after test: | 3.50 | m bgl | Water level start of test: | 0.00 m bgl |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| Seconds, s | m bgl | m | - |
| 0 | -0.40 | 3.90 | 1.000 |
| 15 | -0.39 | 3.89 | 1.003 |
| 30 | -0.38 | 3.88 | 1.005 |
| 45 | -0.38 | 3.88 | 1.005 |
| 60 | -0.37 | 3.87 | 1.008 |
| 90 | -0.36 | 3.86 | 1.010 |
| 120 | -0.36 | 3.86 | 1.010 |
| 150 | -0.35 | 3.85 | 1.013 |
| 180 | -0.35 | 3.85 | 1.013 |
| 210 | -0.33 | 3.83 | 1.018 |
| 240 | -0.32 | 3.82 | 1.021 |
| 270 | -0.30 | 3.80 | 1.026 |
| 300 | -0.30 | 3.80 | 1.026 |
| 360 | -0.29 | 3.79 | 1.029 |
| 420 | -0.28 | 3.78 | 1.032 |
| 480 | -0.26 | 3.76 | 1.037 |
| 540 | -0.24 | 3.74 | 1.043 |
| 600 | -0.22 | 3.72 | 1.048 |
| 900 | -0.20 | 3.70 | 1.054 |
| 1200 | -0.18 | 3.68 | 1.060 |
| 1500 | -0.15 | 3.65 | 1.068 |
| 1800 | -0.11 | 3.61 | 1.080 |
| 2100 | -0.07 | 3.57 | 1.092 |
| 2400 | -0.01 | 3.51 | 1.111 |
| 2700 | 0.02 | 3.48 | 1.121 |

| Time, t | Water Depth | Head at time t, h(t) | h0/h(t) |
|---|---|---|---|
| s | m bgl | m | - |
| 3000 | 0.08 | 3.42 | 1.140 |
| 3300 | 0.14 | 3.36 | 1.161 |
| 3600 | 0.31 | 3.19 | 1.223 |
| 4500 | 0.44 | 3.06 | 1.275 |
| 5400 | 0.59 | 2.91 | 1.340 |
| 6300 | 0.77 | 2.73 | 1.429 |
| 7200 | 0.87 | 2.63 | 1.483 |
| 8100 | 1.00 | 2.50 | 1.560 |
| 9000 | 1.21 | 2.29 | 1.703 |
| 9900 | 1.42 | 2.08 | 1.875 |
| 10800 | 1.60 | 1.90 | 2.053 |
| 11700 | 1.79 | 1.71 | 2.281 |
| 12600 | 1.84 | 1.66 | 2.349 |
| 13500 | 2.59 | 0.91 | 4.286 |
| 14400 | 2.76 | 0.74 | 5.270 |




$$Permeability, k = \frac{S}{F\,(t_2 - t_1)} \log_e \left({}^{H_1}/_{H_2}\right)$$

$$k = \alpha \frac{S}{F}$$

**S=** 0.017671 m2

**k =** **3.35E-07** m/s

Comments:

Partially saturated response zone, use results with caution.

# BOREHOLE LOG

Borehole No: BH326
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 384599.00 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399589.00 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.10 mOD | Scale: | 1:50 |
| Date Started: | 24/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 24/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 6.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Topsoil (drillers description). [TOPSOIL] | | 0.10 | 42.00 | | | | | | | | | | | | |
| MADE GROUND: Dark grey and black gravelly silty slightly clayey fine to coarse SAND (predominantly of ash) with low cobble content and rare bands of clay (<90mm). Gravel is fine to coarse angular of mixed lithologies (burnt shale, coal and clinker). Cobbles are sub-angular of mudstone. [MADE GROUND] | | | | 1.40<br>1.20 - 2.00<br>1.20 - 2.00 | ES<br>B<br>Liner | | | | PID | 0.30 | ppm | | | | |
| | | (3.90) | | 2.40<br>2.00 - 3.00<br>2.00 - 3.00 | ES<br>B<br>Liner | | | | PID | 0.20 | ppm | | | | |
| | | | | 3.40<br>3.00 - 4.00<br>3.00 - 4.00 | ES<br>B<br>Liner | | | | PID | 0.00 | ppm | | | | |
| MADE GROUND: Light and orangish brown slightly gravelly fine to coarse SAND with low cobble content. Gravel is sub-angular to rounded fine to coarse of coal, burnt shale and sandstone. Cobbles are angular of mudstone. [MADE GROUND] | | 4.00 | 38.10 | | | | | | | | | | | | |
| *4.44 - 4.54m : 1nr Band of angular medium to coarse gravel of ash and coal* | | | | 4.40<br>4.00 - 5.00<br>4.00 - 5.00 | ES<br>B<br>Liner | | | | PID | 0.00 | ppm | | | | |
| *4.74 - 4.90m : 1nr Band of slightly gravelly clay. Gravel is angular coarse of mudstone* | | (1.55) | | | | | | | | | | | | | |
| MADE GROUND: Dark grey very gravelly clayey fine to coarse SAND. Gravel is angular to sub-angular fine to coarse of mixed lithologies (burnt shale, coal and brick). [MADE GROUND] | | 5.55 | 36.55 | 5.40<br>5.00 - 6.00<br>5.00 - 6.00 | ES<br>B<br>Liner | | | | PID | 0.00 | ppm | | | | |
| | | (0.45) | | | | | | | | | | | | | |
| Borehole Terminated at 6.00m | | 6.00 | 36.10 | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH326
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | WLS |
| | | Co-ordinates: | 384599.00 mE | Checked By: | APB |
| Project No: | 326R | | 399589.00 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 42.10 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 24/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 24/03/2022 | Inclination: | 90 deg. | Final Depth: | 6.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 24/03/2022 | 24/03/2022 | Hand tools | | | Jordan atherton | Ethan Richardson | |
| 0.00 | 6.00 | | | | | | | | | |
| 1.20 | 6.00 | WLS | 24/03/2022 | 24/03/2022 | T820-627 | | | Jordan atherton | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 24/03/2022 | 13:00 | 0.00 | 0.00 | Dry | Start of shift |
| 24/03/2022 | 14:26 | 6.00 | 0.00 | Dry | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 87 | |
| 6.00 | 78 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.00 | 87 | |
| 4.00 | 78 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 905 | Arisings |
| 0.50 | 6.00 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

# BOREHOLE LOG

bam ritchies

Borehole No: BH327
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 348601.00 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399608.00 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.15 mOD | Scale: | 1:50 |
| Date Started: | 24/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 24/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 8.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Topsoil (drillers description). [TOPSOIL] | | 0.10 | 42.05 | | | | | | | | | | | | |
| MADE GROUND: Dark grey and black gravelly silty slightly clayey fine to coarse SAND (predominantly of ash) with low cobble content and occasional bands of yellowish grey clay (80-140mm) and orangish brown coarse sand (100-130mm). Gravel is angular fine to coarse of mixed lithologies (burnt shale, coal and slag). Cobbles are angular of slag. [MADE GROUND] | | | | 1.40 | ES | | | | PID | 0.60 | ppm | | | | |
| | | | | 1.20 - 2.00 | B | | | | | | | | | | |
| | | | | 1.20 - 2.00 | Liner | | | | | | | | | | |
| MADE GROUND: Dark grey and black gravelly medium to coarse SAND (partially of ash) with low cobble content and occasional bands of yellowish grey clay (80-140mm) and orangish brown coarse sand (100-130mm). Gravel is angular fine to coarse of mixed lithologies (burnt shale, coal and slag). Cobbles are angular of slag. [MADE GROUND] | | (4.90) | | 2.40 | ES | | | | PID | 0.30 | ppm | | | | |
| | | | | 2.00 - 3.00 | B | | | | | | | | | | |
| | | | | 2.00 - 3.00 | Liner | | | | | | | | | | |
| | | | | 3.40 | ES | | | | PID | 0.20 | ppm | | | | |
| | | | | 3.00 - 4.00 | B | | | | | | | | | | |
| | | | | 3.00 - 4.00 | Liner | | | | | | | | | | |
| | | (7.90) | | 4.40 | ES | | | | PID | 0.20 | ppm | | | | |
| | | | | 4.00 - 5.00 | B | | | | | | | | | | |
| | | | | 4.00 - 5.00 | Liner | | | | | | | | | | |
| | | 5.00 | 37.15 | | | | | | | | | | | | |
| | | | | 5.40 | ES | | | | PID | 0.00 | ppm | | | | |
| | | | | 5.00 - 6.00 | B | | | | | | | | | | |
| | | | | 5.00 - 6.00 | Liner | | | | | | | | | | |
| | | (3.00) | | 6.40 | ES | | | | PID | 0.20 | ppm | | | | |
| | | | | 6.00 - 7.00 | B | | | | | | | | | | |
| | | | | 6.00 - 7.00 | Liner | | | | | | | | | | |
| *7.46 - 8.00m : very clayey (weak hydrocarbon odour noted)* | | | | 7.40 | ES | | | | PID | 0.70 | ppm | | | | |
| MADE GROUND: Brown sandy clayey fine to coarse GRAVEL of mixed lithology. [MADE GROUND] | | | | 7.00 - 8.00 | B | | | | | | | | | | |
| | | | | 7.00 - 8.00 | Liner | | | | | | | | | | |
| *7.46 - 8.00m : very clayey (weak hydrocarbon odour noted)* | | 8.00 | 34.15 | | | | | | | | | | | | |
| Borehole Terminated at 8.00m | | | 34.15 | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH327
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | WLS |
| | | Co-ordinates: | 348601.00 mE | Checked By: | APB |
| Project No: | 326R | | 399608.00 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 42.15 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 24/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 24/03/2022 | Inclination: | 90 deg. | Final Depth: | 8.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 24/03/2022 | 24/03/2022 | Hand tools | | | Jordan atherton | Ethan Richardson | |
| 0.00 | 8.00 | | | | | | | | | |
| 1.20 | 8.00 | WLS | 24/03/2022 | 24/03/2022 | T820-627 | | | Jordan atherton | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 24/03/2022 | 14:29 | 0.00 | 0.00 | Dry | Start of shift |
| 24/03/2022 | 16:30 | 8.00 | 0.00 | Dry | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 87 | |
| 7.00 | 78 | |
| 8.00 | 68 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 4.00 | 87 | |
| 4.00 | 78 | |
| 4.00 | 68 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 910 | Flush cover |
| 0.50 | 8.00 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




BH327: 5.00-8.00m

bam ritchies

# Borehole Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

Borehole No: BH328
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | WLS |
| Project No: | 326R | Co-ordinates: | 384625.00 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399609.00 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.20 mOD | Scale: | 1:50 |
| Date Started: | 24/03/2022 | | | Log Status: | FINAL |
| Date Completed: | 24/03/2022 | Orientation: | - - deg. | Print Date: | 31/10/2022 |
| | | Inclination: | 90 deg. | Final Depth: | 8.00m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Topsoil (drillers description). [TOPSOIL] | | 0.10 | 42.10 | | | | | | | | | | | | |
| MADE GROUND: Dark grey locally black gravelly silty slightly clayey fine to coarse SAND (predominantly of ash) with low cobble content and occasional yellowish grey bands of clay (110-170mm). Gravel is angular to sub-angular fine to coarse of mixed lithologies (burnt shale, coal and brick). Cobbles are sub-angular of brick. [MADE GROUND] *1.40 - 2.75m : clayey* | | (2.90) | | 1.40<br>1.20 - 2.00<br>1.20 - 2.00 | ES<br>B<br>Liner | | | | PID | 0.70 | ppm | | | | |
| MADE GROUND: Dark grey locally black gravelly coarse SAND (partially of ash) with low cobble content and occasional yellowish grey bands of clay (110-170mm). Gravel is angular to sub-angular fine to coarse of mixed lithologies (burnt shale, coal and brick). Cobbles are sub-angular of brick. [MADE GROUND] *1.40 - 2.75m : clayey* | | | | 2.40<br>2.00 - 3.00<br>2.00 - 3.00 | ES<br>B<br>Liner | | | | PID | 2.80 | ppm | | | | |
| MADE GROUND: Brown sandy clayey fine to coarse GRAVEL of mixed lithology. [MADE GROUND] | | 3.00 | 39.20 | 3.40<br>3.00 - 4.00<br>3.00 - 4.00 | ES<br>B<br>Liner | | | | PID | 0.60 | ppm | | | | |
| | | (7.90) | | 4.40<br>4.00 - 5.00<br>4.00 - 5.00 | ES<br>B<br>Liner | | | | PID | 4.50 | ppm | | | | |
| | | (5.00) | | 5.40<br>5.00 - 6.00 | ES<br>Liner | | | | PID | 0.80 | ppm | | | | |
| | | | | 6.40<br>6.00 - 7.00 | ES<br>Liner | | | | PID | 0.90 | ppm | | | | |
| | | | | 7.40<br>7.00 - 8.00 | ES<br>Liner | | | | PID | 1.20 | ppm | | | | |
| Borehole Terminated at 8.00m | | 8.00 | 34.20<br>34.20 | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
BH328
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | WLS |
| | | Co-ordinates: | 384625.00 mE | Checked By: | APB |
| Project No: | 326R | | 399609.00 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 42.20 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 24/03/2022 | Orientation: | - - deg. | | |
| Date Completed: | 24/03/2022 | Inclination: | 90 deg. | Final Depth: | 8.00m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.20 | IP | 24/03/2022 | 24/03/2022 | Hand tools | | | Jordan atherton | Ethan Richardson | |
| 0.00 | 8.00 | | | | | | | | | |
| 1.20 | 8.00 | WLS | 24/03/2022 | 24/03/2022 | T820-627 | | | Jordan atherton | | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 24/03/2022 | 06:15 | 0.00 | 0.00 | Dry | Start of shift |
| 24/03/2022 | 12:00 | 8.00 | 0.00 | Dry | Hole complete |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 6.00 | 87 | |
| 7.00 | 78 | |
| 8.00 | 68 | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| 5.00 | 87 | |
| 5.00 | 78 | |
| 5.00 | 68 | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| 0.00 | 0.50 | 905 | Arisings |
| 0.50 | 8.00 | 903 | Bentonite |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Reached scheduled depth

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




BH328: 1.20-5.00m

bam ritchies

# Borehole Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI




BH328_5.00-8.00m

# TRIAL PIT LOG

Trial Pit No.
TT301
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384842.09 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399747.44 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.60 mOD | Scale: | 1:33 |
| Date Started: | 21/02/2022 | Orientation of Logged Face: | 340 deg. | Status: | FINAL |
| Date Completed: | 21/02/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 2.65m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey brown very gravelly slightly clayey fine to coarse SAND (partially of ash) with low to medium cobble content, medium rootlet content and low root (<10mm content. Cobbles are sub angular of brick (quarter to whole). Gravel is sub angular and sub rounded fine to coarse of concrete, brick, slag and sandstone. Rare fragments of timber and plastic and 1m long coping stones, car bumper, concrete fence posts and carpet sheeting. [MADE GROUND ] | | [1.05] | | 0.30<br>0.30<br>0.30<br>0.50<br>0.50 | B<br>ES<br><br>ES<br> | <br><br>PID<br><br>PID | <br><br>0.30<br><br>0.90 | <br><br>ppm<br><br>ppm | | |
| MADE GROUND: Light brown sandy silty sub angular fine to coarse GRAVEL of limestone [MADE GROUND (TYPE 1 SUB BASE)] | | 1.05 | 41.55 | 1.20<br>1.20 | ES<br>LB | | | | | |
| MADE GROUND: Reddish brown sandy sub angular fine to coarse GRAVEL and COBBLES of brick. Rare steel sheeting 1.1x1.5m and concrete boulder 1.0x1.2m. Localised pockets of reddish brown sandy gravelly CLAY. [MADEGROUND] | | 1.30 | 41.30 | 1.20 | | PID | 0.10 | ppm | | |
| *1.40 - 2.00m : Exposed brick wall trending 14deg North.* | | [1.35] | | 2.00<br>2.00<br>2.00<br>2.00<br>2.20<br>2.40<br>2.45<br>2.45 | ES<br>EW<br>EW<br><br>LB<br>EW<br>ES<br> | <br><br><br>PID<br><br><br><br>PID | <br><br><br>0.80<br><br><br><br>35.70 | <br><br><br>ppm<br><br><br><br>ppm | ▼ | |
| Trial Pit Terminated at 2.65m | | 2.65 | 39.95 | | | | | | | |

Reason for Hole Termination: Unstable and ground water ingress

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 2.40 | 4.30 | 2.00 | Unstable | N/A | Andy Bird | 15T Tracked Excavator | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

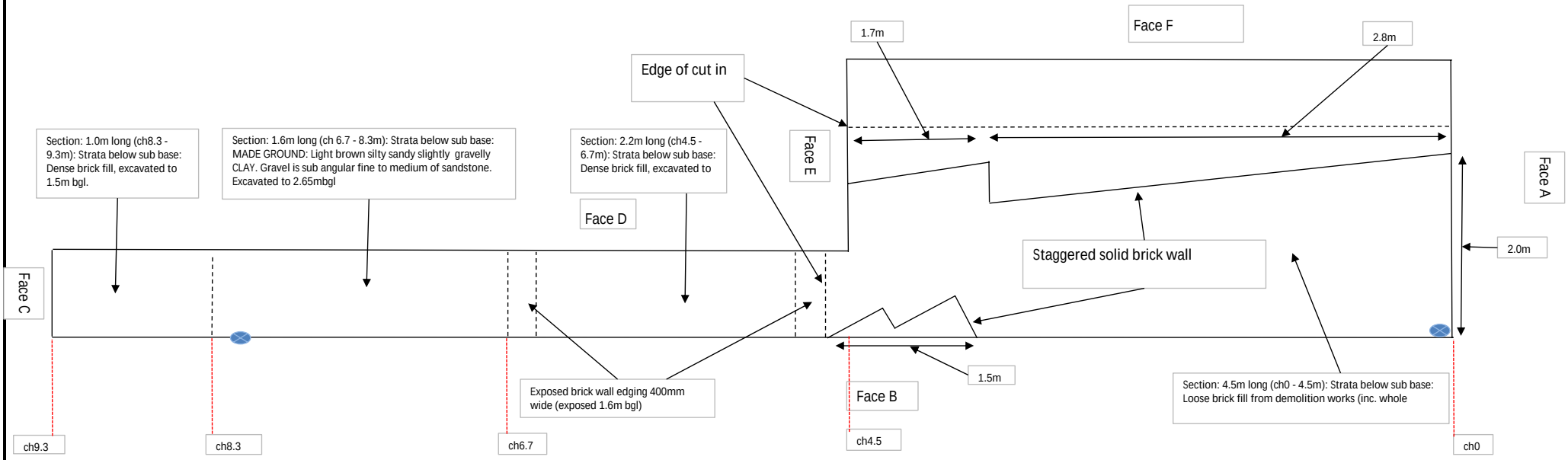
| Depth (m) | Remarks |
|---|---|
| 2.00 | Moderate |

Backfill Details

| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 2.65 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

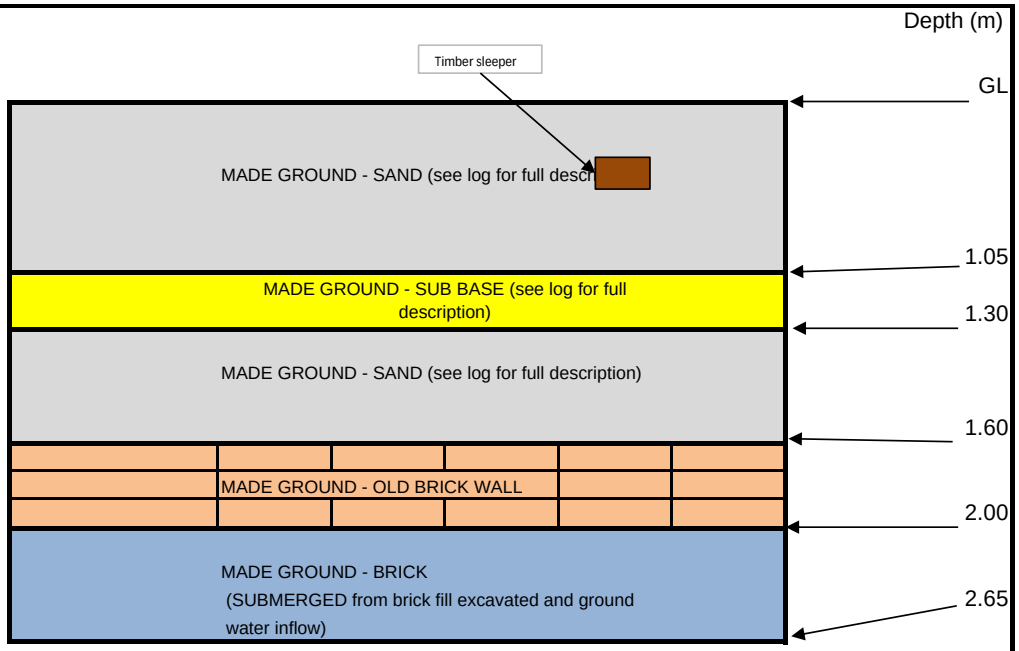



| | Dimensions: | Coordinates: | Easting | |
|---|---|---|---|---|
| Face A | 3.00m | 1 | 384838.297 | |
| Face B | 9.30m | 2 | 384843.309 | |
| Face C | 0.85m | 3 | 384840.709 | |
| Face D | 4.80m | 4 | 384838.340 | |
| Face E | 2.35m | 5 | 384840.338 | |
| Face F | 4.50m | 6 | 384837.594 | |

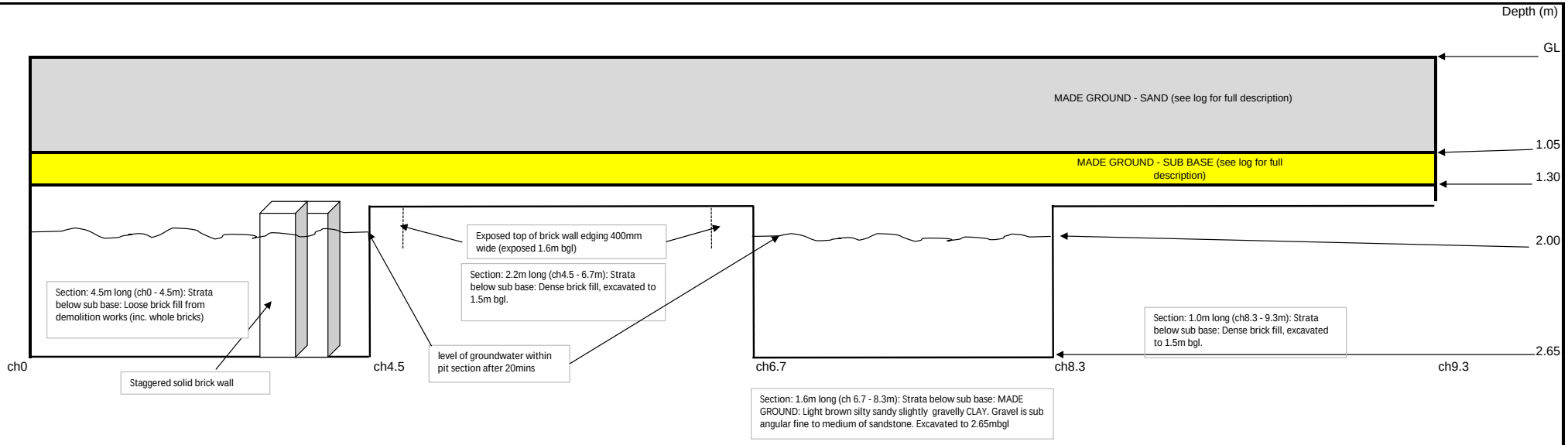
Notes:

: Denotes location of groundwater seepage

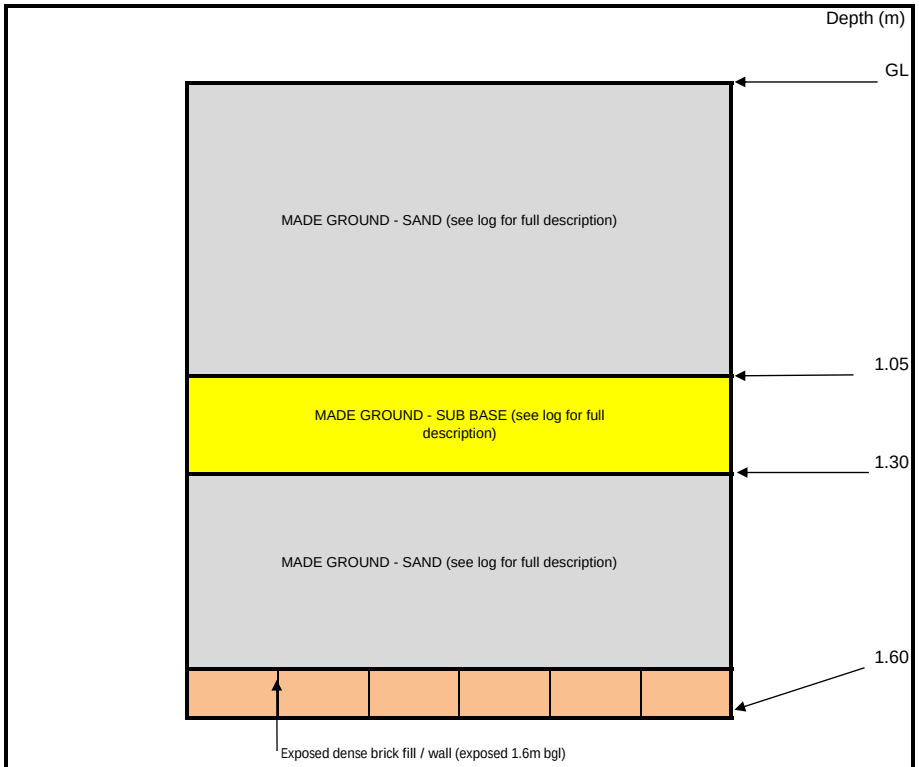
| | | | | |
|---|---|---|---|---|
| Trial Trench Ref: TT301 | Title: **Trial Trench Sketch** | | bam ritchies | |
| View: PLAN | Prepared: APB | Drawn: SF/ APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| Face: A - F | Approved: JH | Date: May-22 | Drawing No: BAX.326R.TT301.SK001 | Revision: 00 |



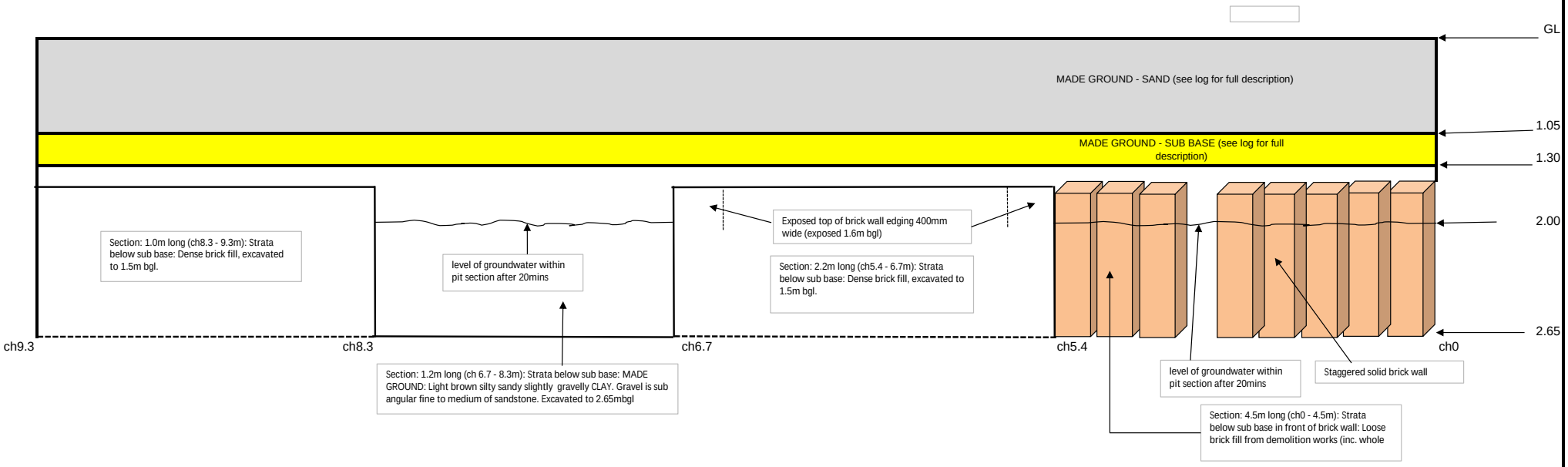

| | | | | | |
|---|---|---|---|---|---|
| Notes: | Trial Trench Ref: TT301 | Title: **Trial Trench Sketch** | | bam ritchies | |
| | View: END | Prepared: APB | Drawn: SF/ APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| | Face: A | Approved: JH | Date: May-22 | Drawing No: BAX.326R.TT301.SK002 | Revision: 00 |




| | | | | | | |
|---|---|---|---|---|---|---|
| Notes: | | Trial Trench Ref: TT301 | Title: **Trial Trench Sketch** | | bam ritchies | |
| | | View: SIDE | Prepared: APB | Drawn: SF/ APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| | | Face: B | Approved: JH | Date: May-22 | Drawing No: BAX.326R.TT301.SK003 | Revision: 00 |




| Notes: | Trial Trench R | Title: | | | |
|---|---|---|---|---|---|
| | TT301 | **Trial Trench Sketch** | | bam ritchies | |
| | View: | Prepared: | Drawn: | Contract: | Scale: |
| | END | APB | SF/ APB | **Victoria North HiF Enabling Works** | NTS |
| | Face: | Approved: | Date: | Drawing No: | Revision: |
| | C | JH | May-22 | BAX.326R.TT301.SK004 | 00 |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Notes: | Trial Trench Ref: TT301 | | Title: **Trial Trench Sketch** | | bam ritchies | | |
| | View: SIDE | | Prepared: APB | Drawn: SF/ APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS | |
| | Face: D and F | | Approved: JH | Date: May-22 | Drawing No: BAX.326R.TT301.SK005 | Revision: 00 | |




TT301 0.00 – 2.65m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI




TT301 0.00 – 2.65m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TT301 0.00 – 2.65m

bam ritchies

# Trial Trench Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**



TT301 0.00 – 2.65m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TT301 0.00 – 2.65m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TT301 0.00 – 2.65m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TT301 0.00 – 2.65m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI




TT301 Spoil Mound 1

bam ritchies

# Trial Trench Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**




TT301 Spoil Mound 2

bam ritchies

# Trial Trench Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**

# DYNAMIC CONE PENETRATION TEST

Test Location:
**TT301**


| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384842.09 | mE | Checked by: | APB |
| Project No: | 326R | | 399747.44 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 42.60 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 17/02/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 145 | | 0 | 0 |
| 5 | 5 | 160 | | 135 | 135 |
| 5 | 10 | 164 | | 120 | 255 |
| 5 | 15 | 176 | | 180 | 435 |
| 5 | 20 | 182 | 72 | 227 | 662 |
| 5 | 25 | 203 | | 138 | 800 |
| 5 | 30 | 230 | | 65 | 865 |
| 5 | 35 | 280 | | 85 | 950 |
| 5 | 40 | 302 | | 122 | 1072 |
| 5 | 45 | 340 | | 80 | 1152 |
| 5 | 50 | 370 | | 102 | 1254 |
| 5 | 55 | 401 | | 81 | 1335 |
| 7 | 62 | 442 | 50 | 105 | 1440 |
| 5 | 67 | 473 | | 50 | 1490 |
| 5 | 72 | 495 | | 88 | 1578 |
| 5 | 77 | 530 | | 101 | 1679 |
| 5 | 82 | 540 | | 68 | 1747 |
| 5 | 87 | 600 | | 73 | 1820 |
| 5 | 92 | 627 | | 180 | 2000 |
| 5 | 97 | 657 | | 171 | 2171 |
| 5 | 102 | 710 | 67 | 69 | 2240 |
| 5 | 107 | 734 | | 67 | 2307 |
| 5 | 112 | 780 | | 82 | 2389 |
| 5 | 117 | 808 | | 74 | 2463 |
| 5 | 122 | 830 | | 80 | 2543 |
| 5 | 127 | 832 | 65 | 63 | 2606 |
| 5 | 132 | 90 | | 91 | 2697 |
| 5 | 137 | 130 | | 57 | 2754 |
| 5 | 142 | 168 | | 37 | 2791 |
| 5 | 147 | 210 | | 92 | 2883 |
| 5 | 152 | 240 | | 94 | 2977 |
| 3 | 155 | 265 | | 46 | 3023 |
| 3 | 158 | 290 | | 102 | 3125 |
| 3 | 161 | 315 | | 44 | 3169 |
| 3 | 164 | 336 | | 30 | 3199 |
| 3 | 167 | 356 | | 28 | 3227 |
| 3 | 170 | 365 | | 38 | 3265 |
| 3 | 173 | 376 | | 30 | 3295 |
| 3 | 176 | 382 | | 84 | 3379 |
| 3 | 179 | 390 | | 36 | 3415 |
| 3 | 182 | 410 | | 20 | 3435 |
| 3 | 185 | 442 | | 26 | 3461 |
| 3 | 188 | 452 | | 21 | 3482 |
| 3 | 191 | 460 | | 28 | 3510 |
| 3 | 194 | 581 | | 26 | 3536 |
| 1 | 195 | 595 | | 14 | 3550 |
| 1 | 196 | 622 | | 27 | 3577 |
| 1 | 197 | 645 | | 23 | 3600 |
| 1 | 198 | 661 | | 16 | 3616 |
| 1 | 199 | 680 | | 19 | 3635 |

Comments:
TRL carried out at north end of Trench. DCP TRL test terminated due to refusal at 3810mm.

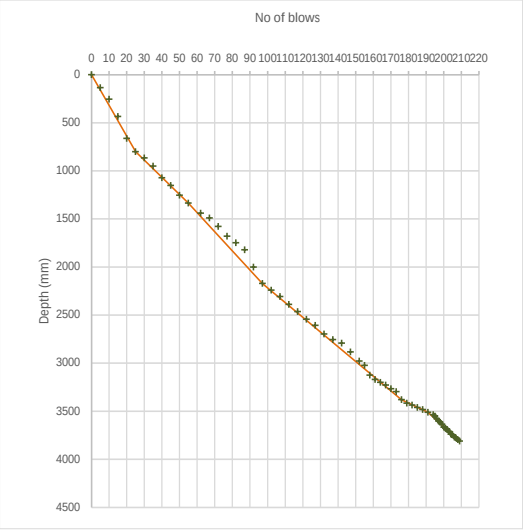
# DYNAMIC CONE PENETRATION TEST

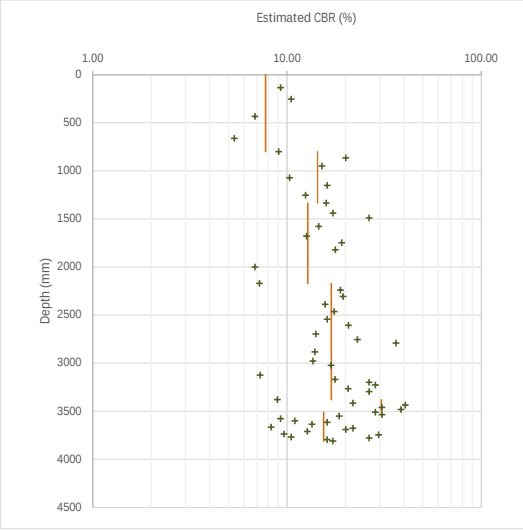
Test Location: **TT301**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384842.09 | mE | Checked by: | APB |
| Project No: | 326R | | 399747.44 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 42.60 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 17/02/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 1 | 200 | 710 | | 30 | 3665 |
| 1 | 201 | 722 | | 12 | 3677 |
| 1 | 202 | 735 | | 13 | 3690 |
| 1 | 203 | 755 | | 20 | 3710 |
| 1 | 204 | 781 | | 26 | 3736 |
| 1 | 205 | 790 | | 9 | 3745 |
| 1 | 206 | 814 | | 24 | 3769 |
| 1 | 207 | 824 | | 10 | 3779 |
| 1 | 208 | 840 | | 16 | 3795 |
| 1 | 209 | 855 | | 15 | 3810 |




| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 800 | 7.7 |
| 2 | 800 | 1335 | 14 |
| 3 | 1335 | 2171 | 13 |
| 4 | 2171 | 3379 | 17 |
| 5 | 3379 | 3510 | 31 |
| 6 | 3510 | 3810 | 15 |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out at north end of Trench. DCP TRL test terminated due to refusal at 3810mm.

# TRIAL PIT LOG

Trial Pit No.
TT302
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384842.18 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399756.03 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.10 mOD | Scale: | 1:33 |
| Date Started: | 17/02/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 17/02/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 1.10m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey brown gravelly silty fine to coarse SAND with high rootlet and root content (<75mm). Gravel is sub angular and sub rounded fine to coarse of mixed lithology including brick concrete concrete sleeper slag and sandstone. | | [0.45] | | 0.30 | ES | | | | | |
| [MADE GROUND] | | 0.45 | 41.65 | 0.30 | | PID | 938.60 | ppm | | |
| MADE GROUND: Light brown slightly sandy to sandy sub angular fine to coarse GRAVEL of limestone. | | | | 0.50 | D | | | | | |
| [TYPE 1 SUB BASE] | | 0.70 | 41.40 | | | | | | | |
| MADE GROUND: Reddish brown and brown slightly silty sandy angular GRAVEL of brick with high cobble content. Cobbles are whole bricks. | | | | 0.80 | | PID | 246.00 | ppm | | |
| [MADE GROUND. ] | | [0.40] | | 0.80 - 1.00 | ES | | | | | |
| *0.70 - 1.05m : Highly contaminated at NE corner (face A&B) from steel vessel (1.05x0.6m). Possible oils / hydrocarbons. (See sketch).* | | 1.10 | 41.00 | | | | | | | |
| *1.05 - 1.10m : Concrete slab exposed trending NW to SW (1.27x 5.6m) (see sketch).* | | | | | | | | | | |
| Trial Pit Terminated at 1.10m | | | | | | | | | | |

Reason for Hole Termination: Exposed concrete slab

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.05 | 6.32 | 0.90 | Stable | N/A | Andy Bird | 15T Tracked Excavator | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

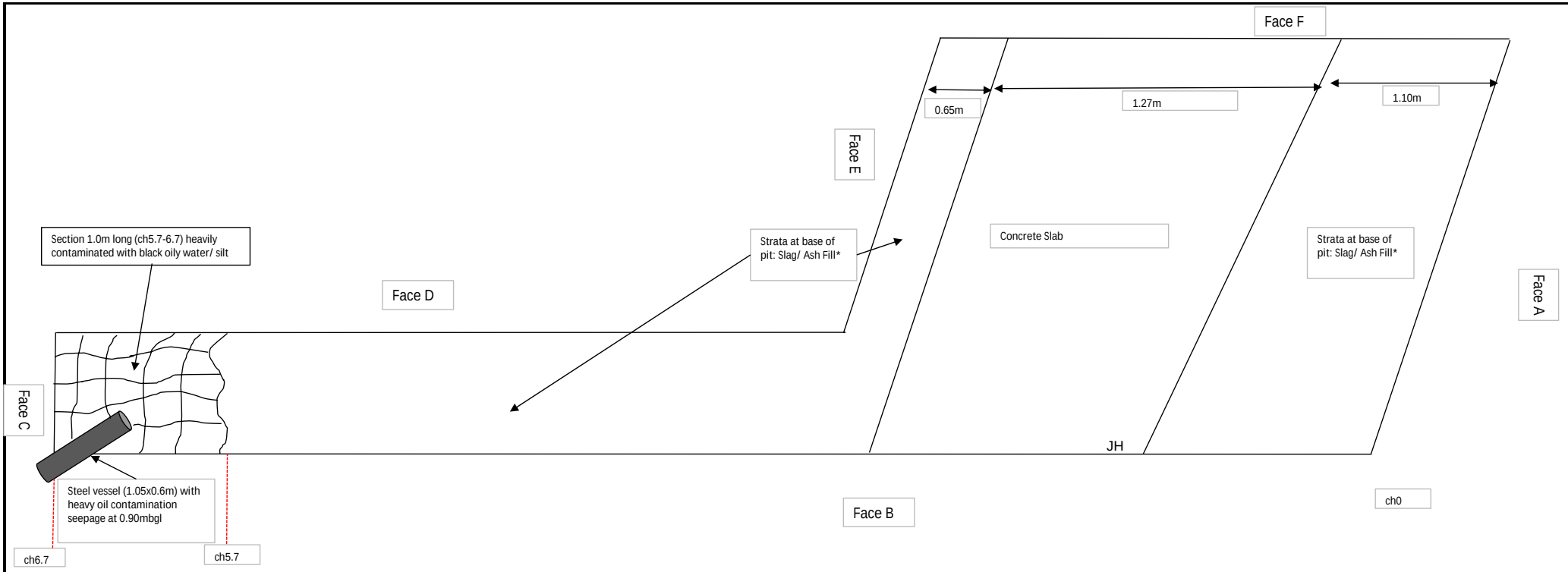
| Depth (m) | Remarks |
|---|---|
| | |

Backfill Details

| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 1.10 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

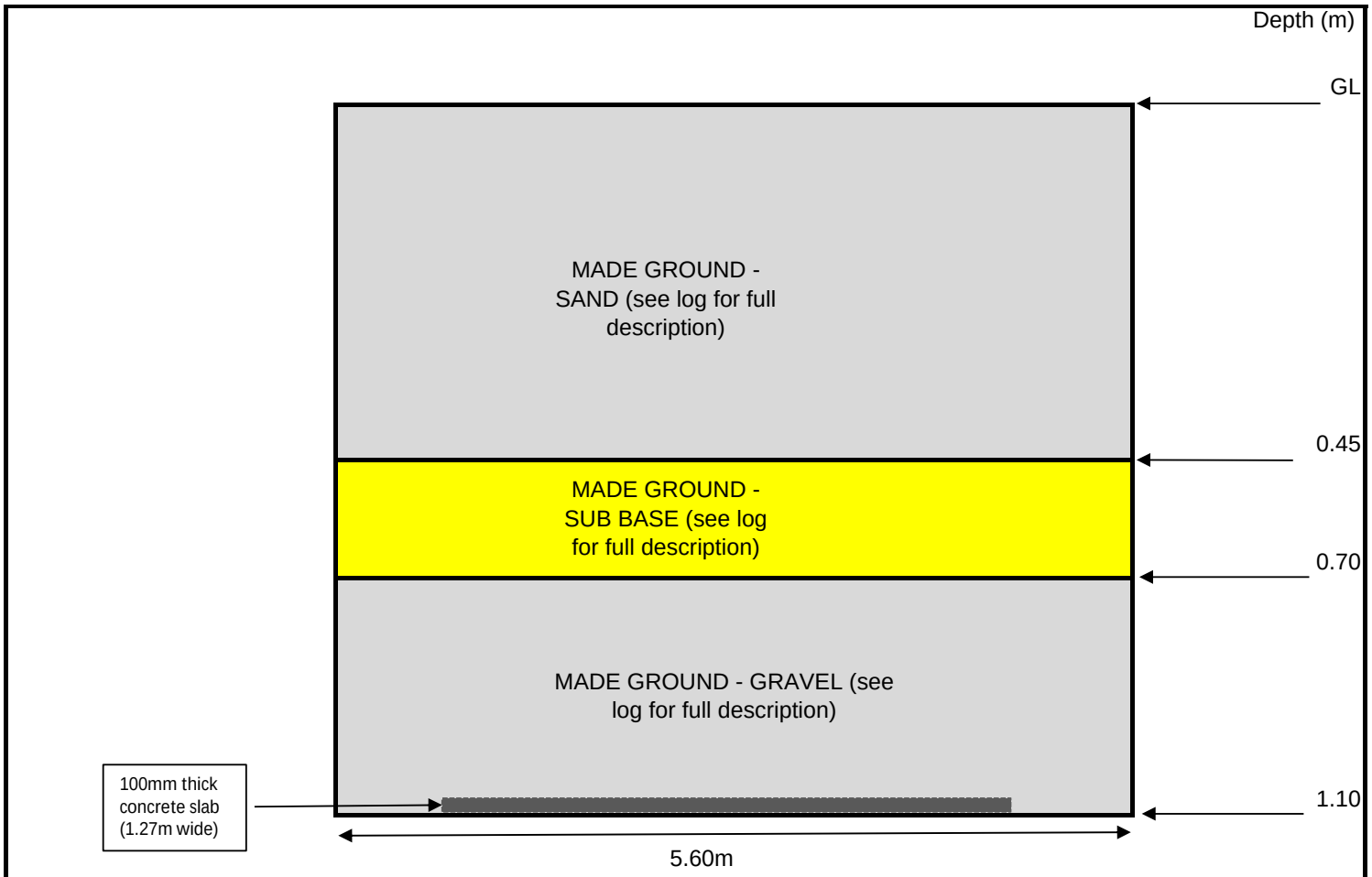
Explanation of symbols and abbreviations given in 'Key to Exploratory holes'



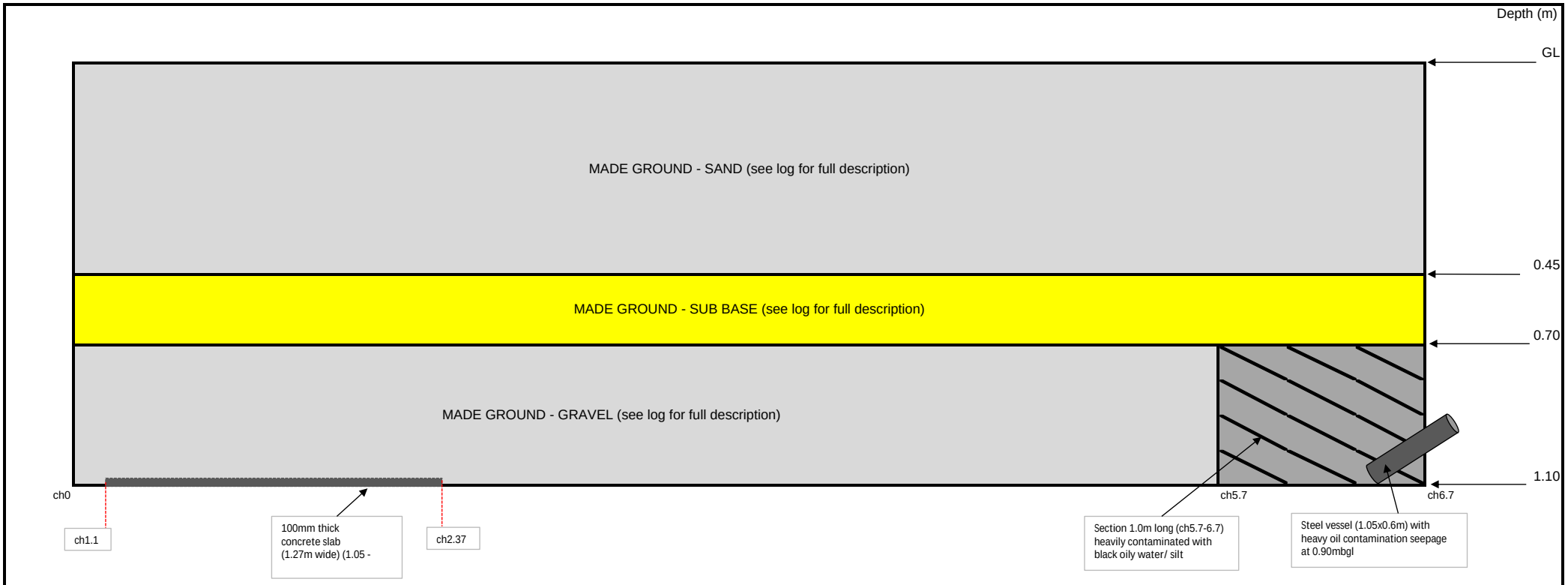

| | Dimensions: | Coordinates: | Easting | Northing: |
|---|---|---|---|---|
| Face A | 5.60m | 1 | 384839.962 | 399750.752 |
| Face B | 6.70m | 2 | 384839.130 | JH |
| Face C | 0.90m | 3 | 384840.825 | 399754.428 |
| Face D | 3.68m | 4 | 384838.001 | 399758.153 |
| Face E | 4.70m | 5 | 384839.619 | 399760.757 |
| Face F | 3.02m | 6 | 384843.128 | 399756.327 |

Notes:
*: Denotes see log for full description.

| | | | | |
|---|---|---|---|---|
| Trial Trench Ref: TT302 | Title: **Trial Trench Sketch** | | bam ritchies | |
| View: PLAN | Prepared: APB | Drawn: SF/ APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| Face: A - F | Approved: JH | Date: May-22 | Drawing No: BAX.326R.TT302.SK001 | Revision: 00 |

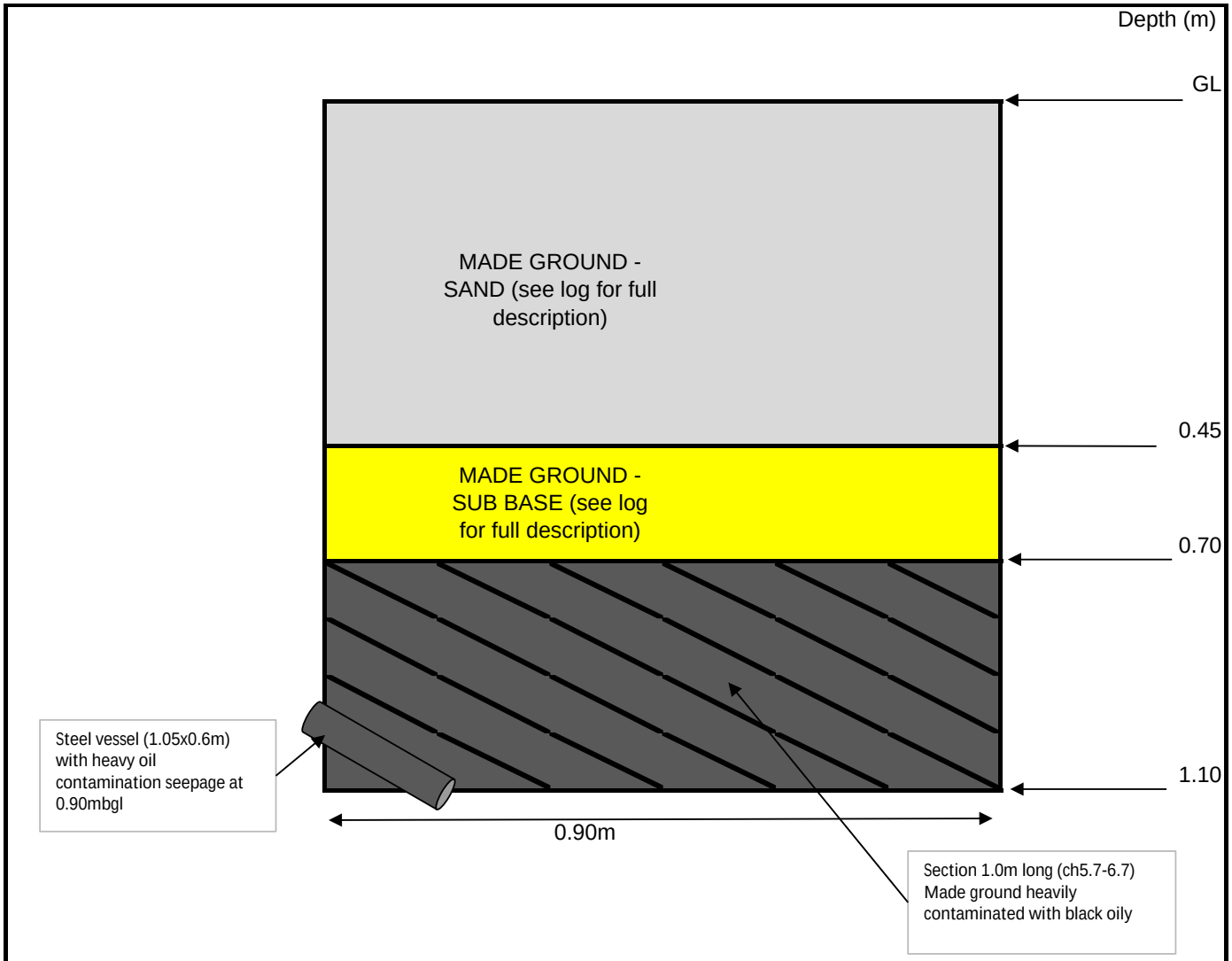



| Notes: | Trial Trench Ref: TT302 | Title: **Trial Trench Sketch** | | bam ritchies | |
|---|---|---|---|---|---|
| | View: END | Prepared: APB | Drawn: APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| | Face: A | Approved: JH | Date: Jun-22 | Drawing No: BAX.326R.TT302.SK002 | Revision: 00 |

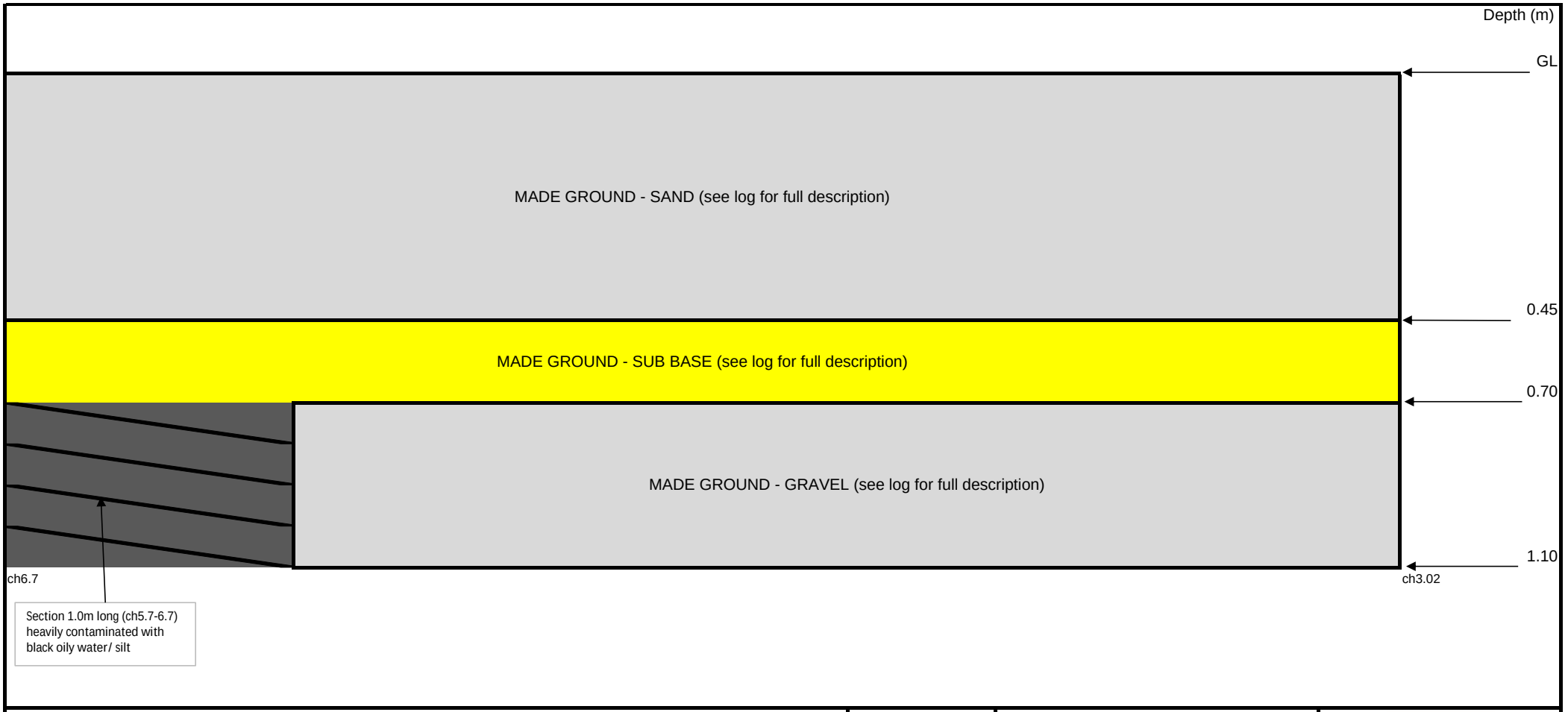



Notes:

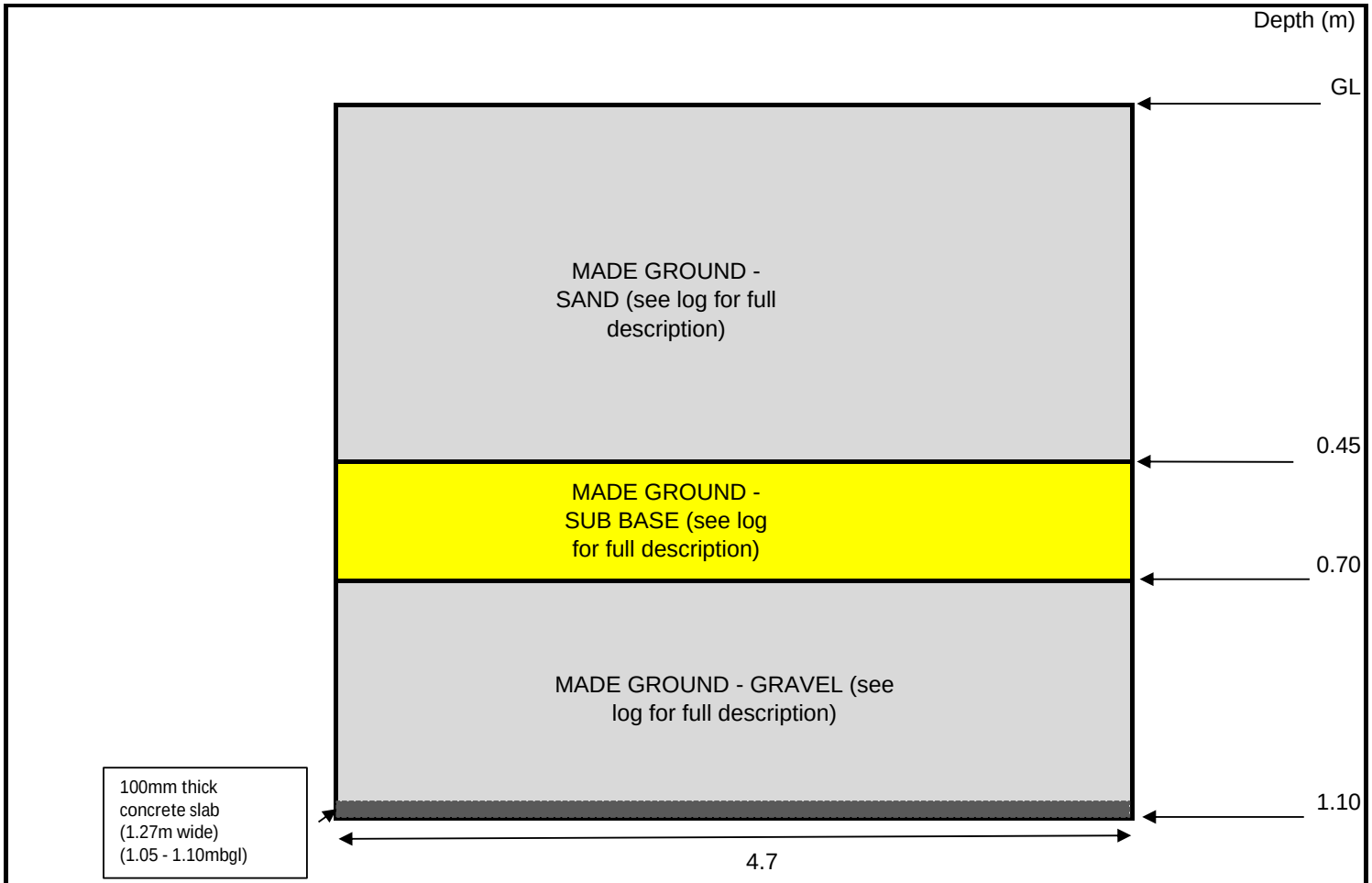
| | | | | |
|---|---|---|---|---|
| Trial Trench Ref: TT302 | Title: **Trial Trench Sketch** | | bam ritchies | |
| View: SIDE | Prepared: APB | Drawn: APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| Face: B | Approved: JH | Date: Jun-22 | Drawing No: BAX.326R.TT302.SK003 | Revision: 00 |



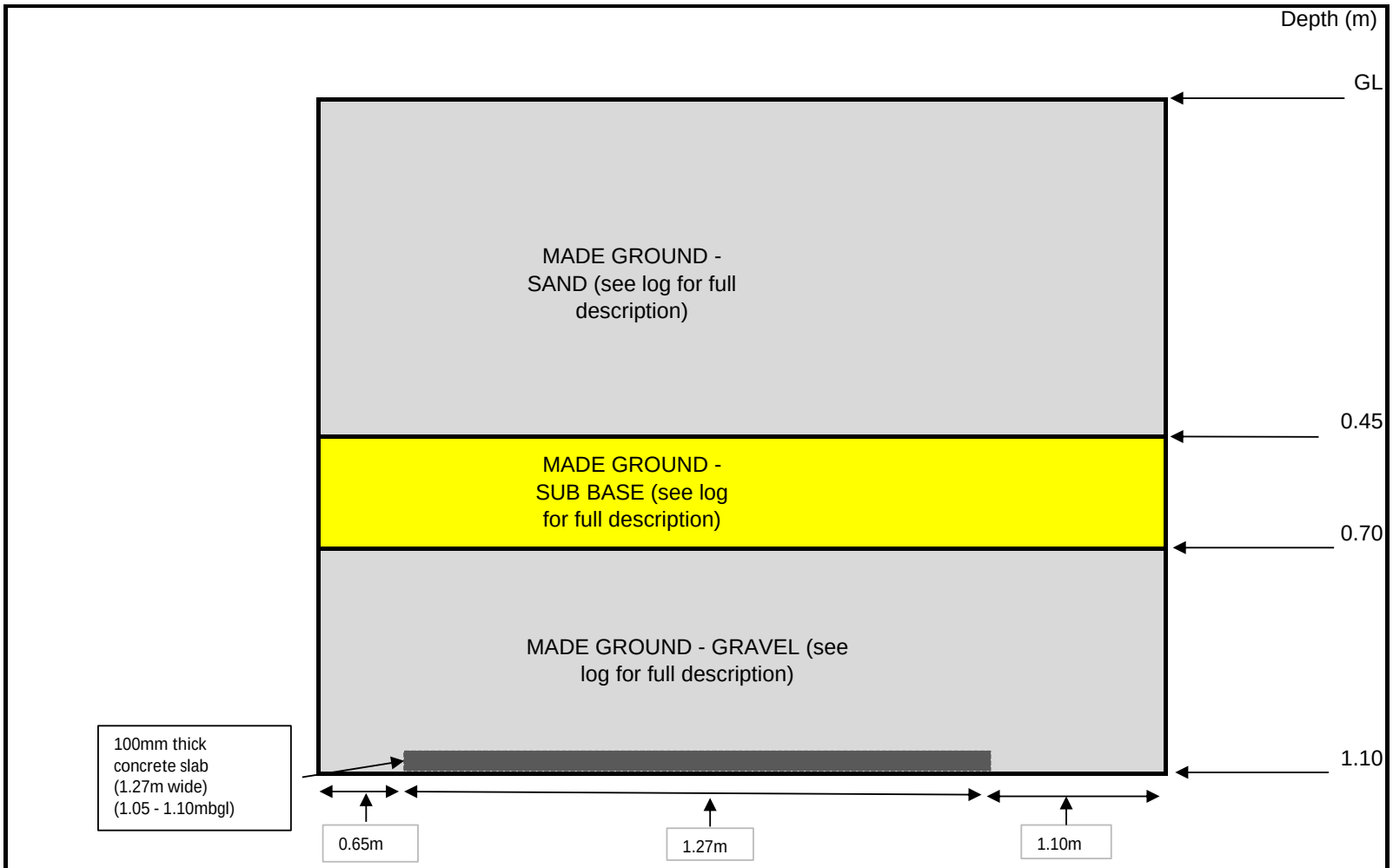

| | | | | | |
|---|---|---|---|---|---|
| Notes: | Trial Trench F: TT302 | Title: **Trial Trench Sketch** | | bam ritchies | |
| | View: END | Prepared: APB | Drawn: APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| | Face: C | Approved: JH | Date: Jun-22 | Drawing No: BAX.326R.TT302.SK004 | Revision: 00 |




| | | | | | |
|---|---|---|---|---|---|
| Notes: | Trial Trench Ref: TT302 | Title: **Trial Trench Sketch** | | bam ritchies | |
| | View: SIDE | Prepared: APB | Drawn: APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| | Face: D | Approved: JH | Date: Jun-22 | Drawing No: BAX.326R.TT302.SK005 | Revision: 00 |




| Notes: | Trial Trench Ref: | Title: | | | |
|---|---|---|---|---|---|
| | TT302 | **Trial Trench Sketch** | | bam ritchies | |
| | View: | Prepared: | Drawn: | Contract: | Scale: |
| | SIDE | APB | APB | **Victoria North HiF Enabling Works** | NTS |
| | Face: | Approved: | Date: | Drawing No: | Revision: |
| | E | JH | Jun-22 | BAX.326R.TT302.SK006 | 00 |




| Notes: | Trial Trench Ref: TT302 | Title: **Trial Trench Sketch** | | bam ritchies | |
|---|---|---|---|---|---|
| | View: SIDE | Prepared: APB | Drawn: APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| | Face: F | Approved: JH | Date: Jun-22 | Drawing No: BAX.326R.TT302.SK007 | Revision: 00 |



TT302 0.00 – 1.10m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TT302 0.00 – 1.10m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI




TT302 0.00 – 1.10m

bam ritchies

# Trial Trench Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**




TT302 0.00 – 1.10m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI




TT302 Spoil Mound

bam ritchies

# Trial Trench Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**

# DYNAMIC CONE PENETRATION TEST

Test Location:

**TT302**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384842.18 | mE | Checked by: | APB |
| Project No: | 326R | | 399756.03 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 42.10 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 106 | | 0 | 0 |
| 1 | 1 | 110 | | 4 | 4 |
| 1 | 2 | 120 | | 10 | 14 |
| 1 | 3 | 240 | | 120 | 134 |
| 1 | 4 | 330 | | 90 | 224 |
| 1 | 5 | 380 | | 50 | 274 |
| 1 | 6 | 400 | | 20 | 294 |
| 1 | 7 | 420 | | 20 | 314 |
| 1 | 8 | 430 | | 10 | 324 |
| 1 | 9 | 440 | | 10 | 334 |
| 1 | 10 | 450 | | 10 | 344 |
| 1 | 11 | 460 | | 10 | 354 |
| 1 | 12 | 465 | | 5 | 359 |
| 1 | 13 | 470 | | 5 | 364 |
| 1 | 14 | 475 | | 5 | 369 |
| 1 | 15 | 480 | | 5 | 374 |
| 1 | 16 | 490 | | 10 | 384 |
| 1 | 17 | 500 | | 10 | 394 |
| 1 | 18 | 510 | | 10 | 404 |
| 2 | 20 | 520 | | 10 | 414 |
| 2 | 22 | 530 | | 10 | 424 |
| 2 | 24 | 540 | | 10 | 434 |
| 5 | 29 | 545 | | 5 | 439 |
| 5 | 34 | 550 | | 5 | 444 |
| 5 | 39 | 560 | | 10 | 454 |
| 5 | 44 | 565 | | 5 | 459 |
| 15 | 59 | 570 | | 5 | 464 |

Comments:

TRL carried out at north end of trench. DCP TRL test terminated due to refusal at 464mm.

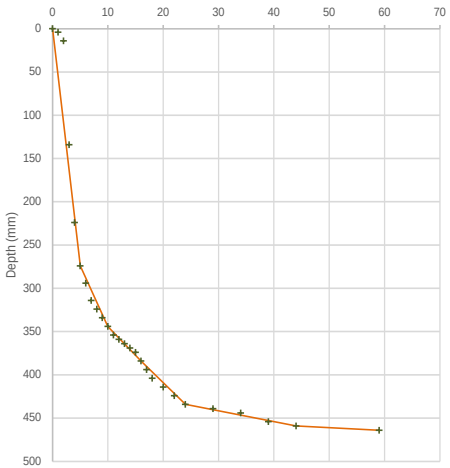
# DYNAMIC CONE PENETRATION TEST

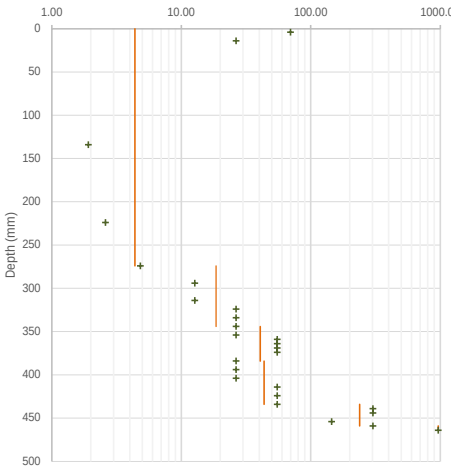
Test Location: **TT302**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384842.18 | mE | Checked by: | APB |
| Project No: | 326R | | 399756.03 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 42.10 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |




| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 274 | 4.4 |
| 2 | 274 | 344 | 19 |
| 3 | 344 | 384 | 41 |
| 4 | 384 | 434 | 44 |
| 5 | 434 | 459 | 240 |
| 6 | 459 | 464 | 960 |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out at north end of trench. DCP TRL test terminated due to refusal at 464mm.

# TRIAL PIT LOG

Trial Pit No.
TT303
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384850.08 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399751.87 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.47 mOD | Scale: | 1:33 |
| Date Started: | 17/02/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 17/02/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 3.50m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey brown clayey silty gravelly SAND with high rootlet and root content (<30mm). Gravel is sub angular fine to coarse of mixed lithology including brick, sandstone, concrete, slag & clinker. | | 0.20 | 41.27 | | | | | | | |
| [MADE GROUND ] | | | | 0.35 | ES | | | | | |
| MADE GROUND: Brown sandy gravelly CLAY. Gravel is sub angular fine to coarse of mixed lithology including brick, concrete and limestone. | | | | 0.35 | | PID | 322.70 | ppm | | |
| [MADE GROUND] | | | | 0.50 | B | | | | | |
| *0.30 - 0.37m : 65mm diameter steel pipe exposed along north west face trending whole length of trench.* | | | | 0.50 | ES | | | | | |
| *0.60m : Mexe Cone: 2, 2, 3, 5,12* | | [3.30] | | 0.50 | | PID | 10.50 | ppm | | |
| Trial Pit Terminated at 3.50m | | 3.50 | 37.97 | | | | | | | |

Reason for Hole Termination: Upon the design engineers instructions due to steel pipe

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.60 | 5.50 | 0.80 | Stable | N/A | Andy Bird | 15T Tracked Excavator | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

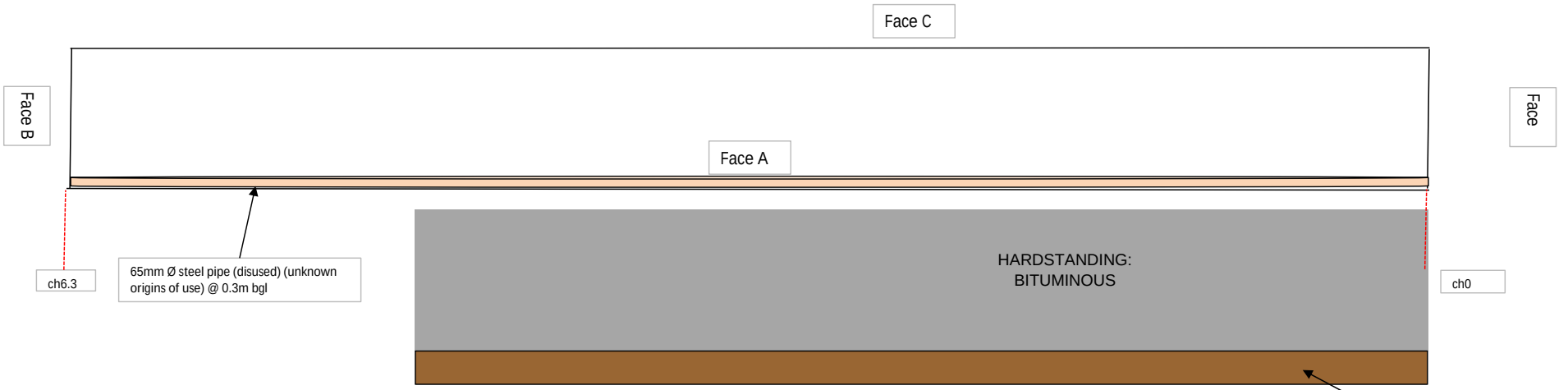
| Depth (m) | Remarks |
|---|---|
| | |

Backfill Details

| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 3.50 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'




| | Dimensions: |
|---|---|
| Face A | 0.70m |
| Face B | 5.80m |
| Face C | 0.70m |
| Face D | 5.80m |
| | **Coordinates:** |
| **Easting** | **Northing** |
| 384850.075 | 399751.865 |
| 384850.0466 | 399751.1993 |
| 384855.859 | 399751.0892 |
| 384855.7627 | 399750.3711 |

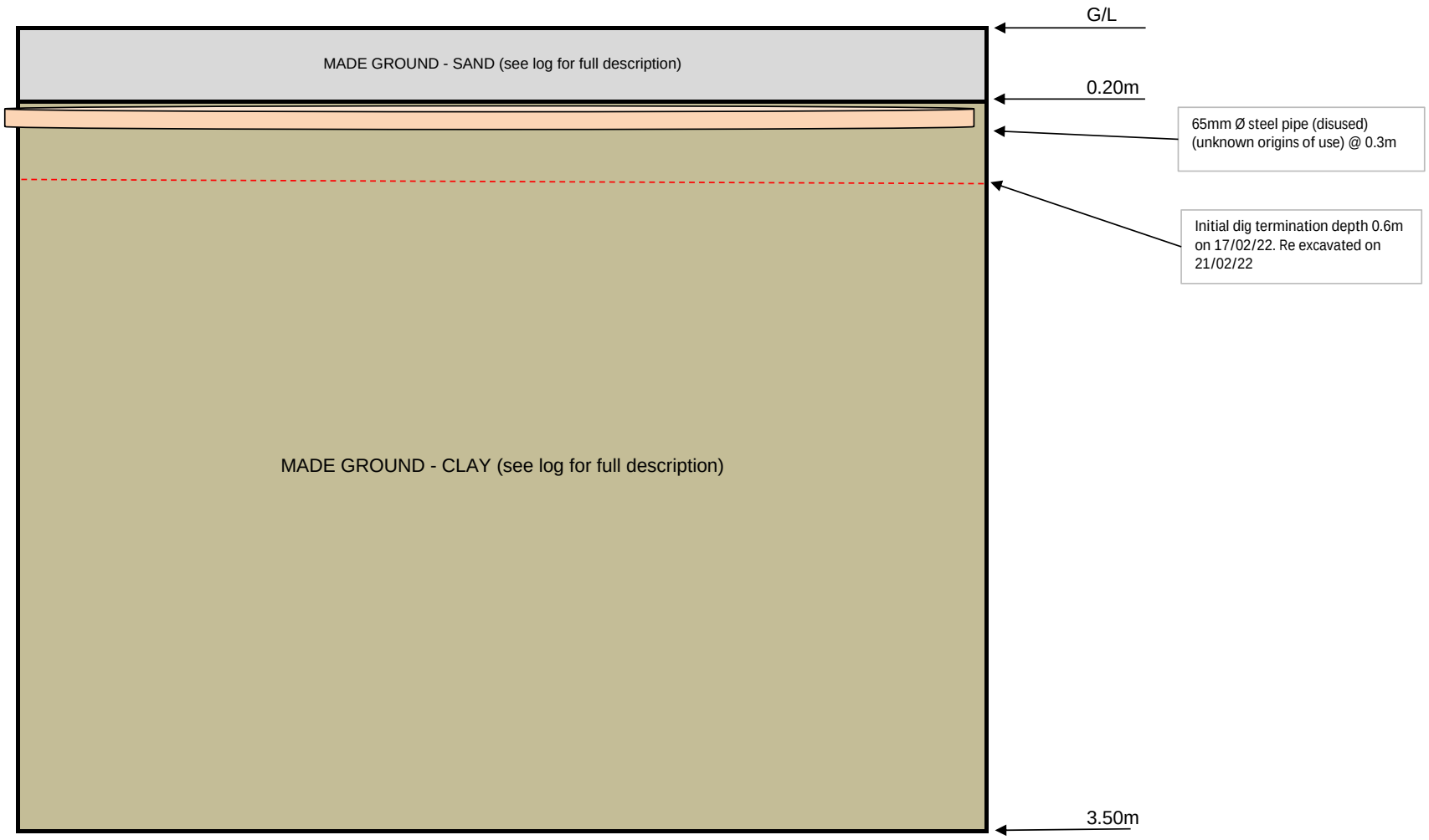
TP303A
EXCAVATED

JH

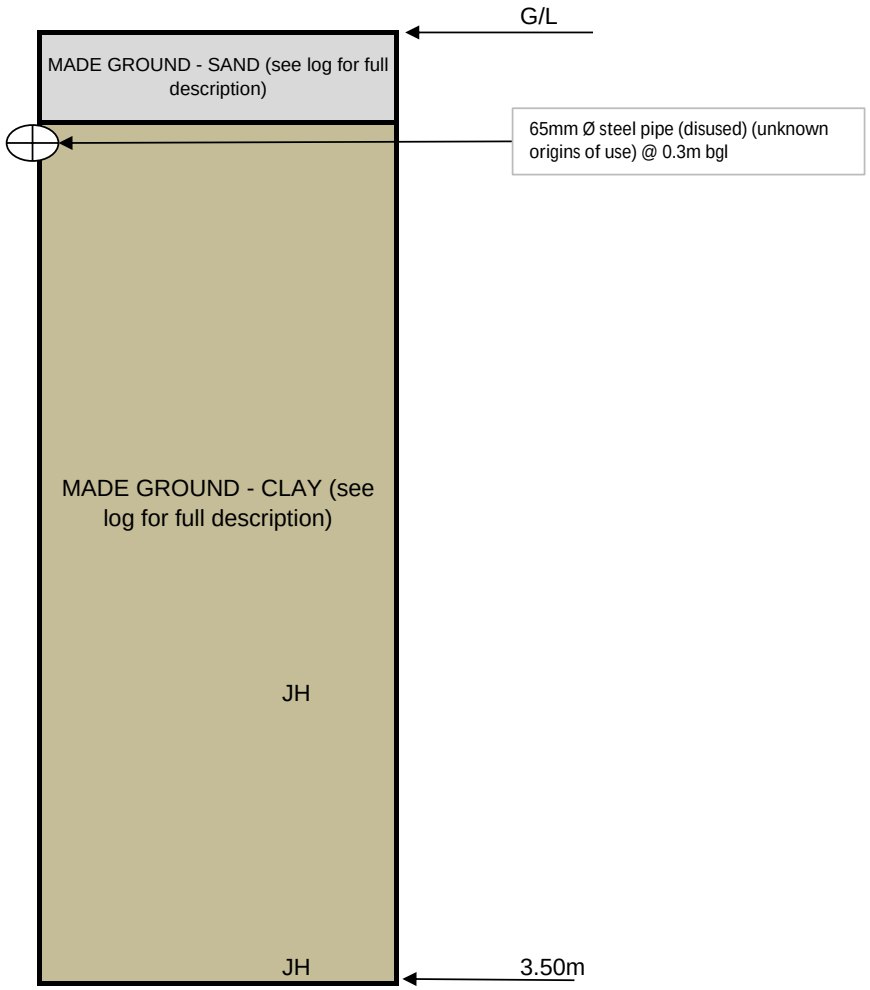
JH

Notes:

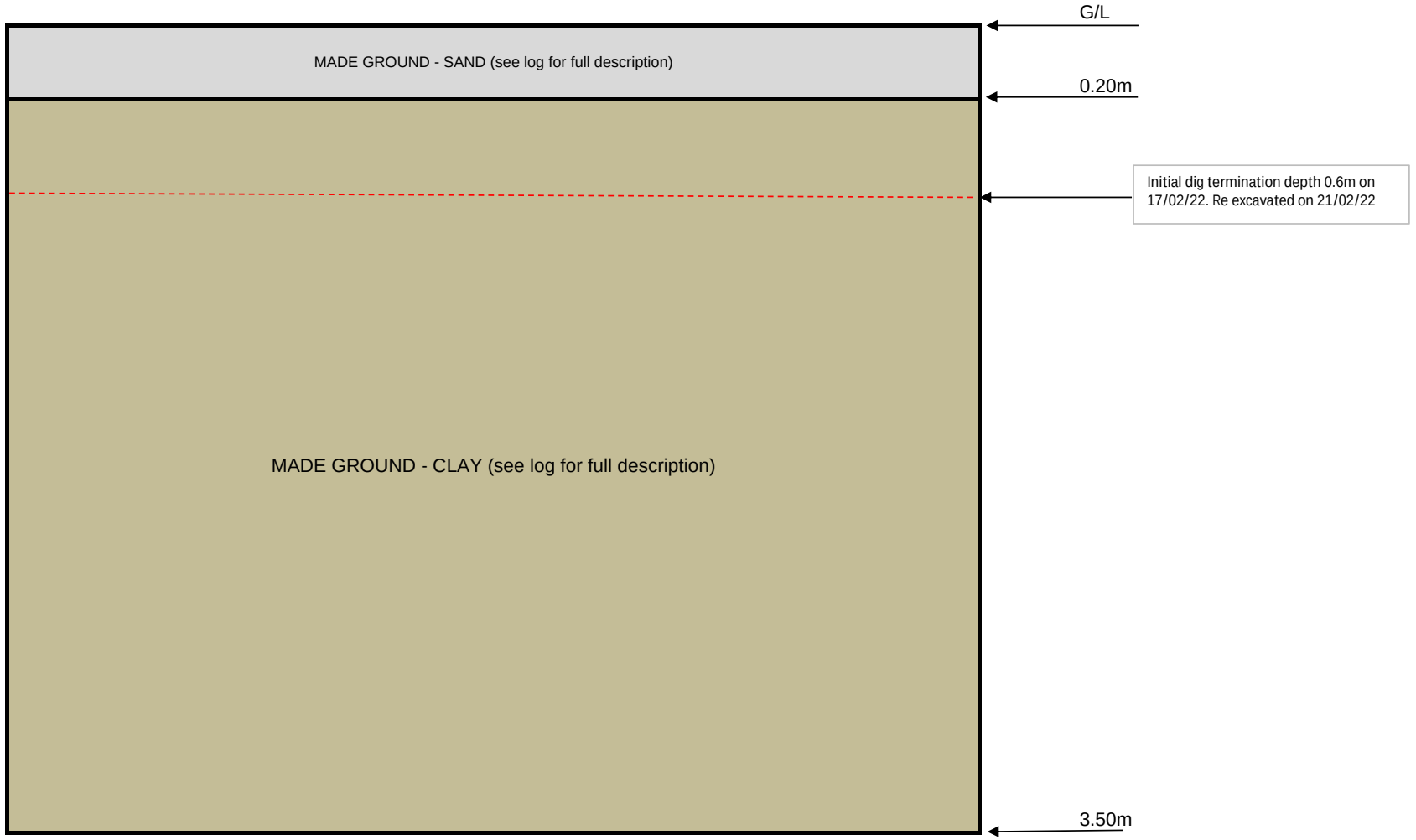
| | | | | |
|---|---|---|---|---|
| Trial Trench Ref: TT303 | Title: **Trial Trench Sketch** | | bam ritchies | |
| View: PLAN | Prepared: APB | Drawn: SF/ APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| Face: A - D | Approved: JH | Date: May-22 | Drawing No: BAX.326R.TT303.SK001 | Revision: 00 |



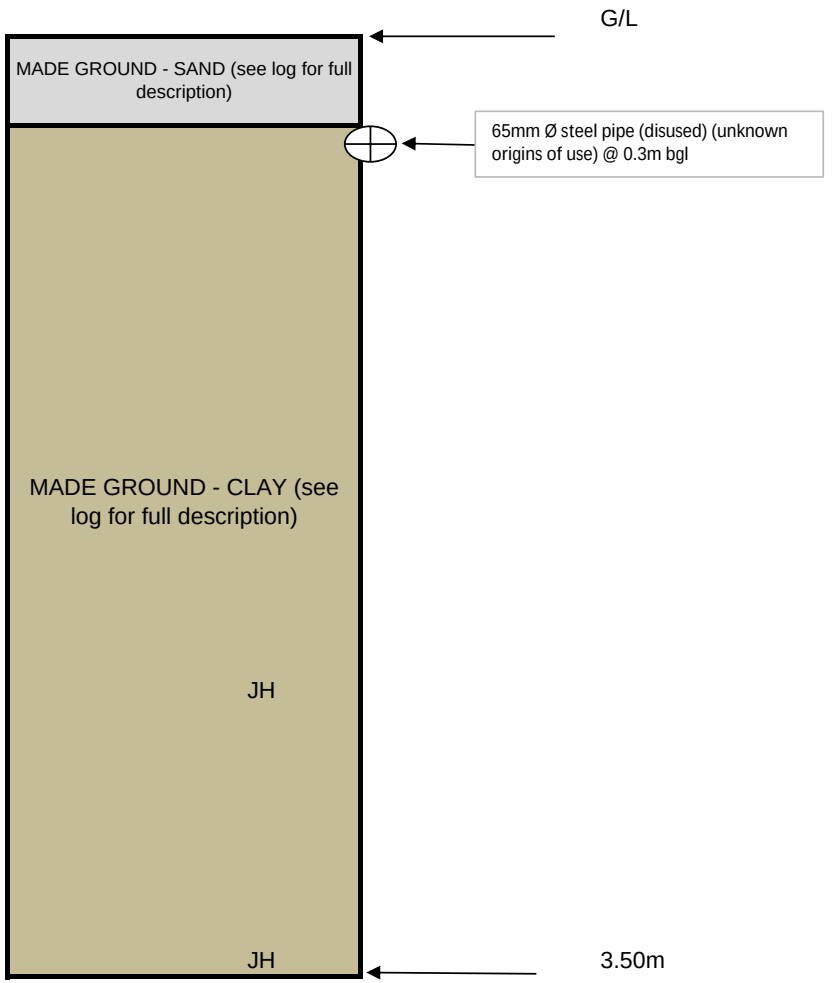

| | | | | | |
|---|---|---|---|---|---|
| Notes: | Trial Trench Ref: TT303 | Title: **Trial Trench Sketch** | | bam ritchies | |
| | View: SIDE | Prepared: APB | Drawn: APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| | Face: A | Approved: JH | Date: Jun-22 | Drawing No: BAX.326R.TT303.SK002 | Revision: 00 |




| Notes: | Trial Trench Ref: | Title: | | | |
|---|---|---|---|---|---|
| | TT303 | **Trial Trench Sketch** | | bam ritchies | |
| | View: END | Prepared: APB | Drawn: SF/ APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| | Face: B | Approved: JH | Date: Jun-22 | Drawing No: BAX.326R.TT303.SK003 | Revision: 00 |




| | | | | | |
|---|---|---|---|---|---|
| Notes: | Trial Trench Ref: TT303 | Title: **Trial Trench Sketch** | | bam ritchies | |
| | View: END | Prepared: APB | Drawn: APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| | Face: C | Approved: JH | Date: Jun-22 | Drawing No: BAX.326R.TT303.SK004 | Revision: 00 |




| Notes: | Trial Trench Ref: | Title: | | | |
|---|---|---|---|---|---|
| | TT303 | **Trial Trench Sketch** | | bam ritchies | |
| | View: | Prepared: | Drawn: | Contract: | Scale: |
| | END | APB | SF/ APB | **Victoria North HiF Enabling Works** | NTS |
| | Face: | Approved: | Date: | Drawing No: | Revision: |
| | D | JH | May-22 | BAX.326R.TT303.SK005 | 00 |



TT303 0.00 – 3.50m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TT303 0.00 – 3.50m

bam ritchies

# Trial Trench Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**



TT303 0.00 – 3.50m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TT303 0.00 – 3.50m

bam ritchies

# Trial Trench Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI

bam ritchies

# DYNAMIC CONE PENETRATION TEST

Test Location:

**TT303**



| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF GI | Survey grid system: | OSGB | Hole type: | DCP |
| | | Co-ordinates: | 384850.08 mE | Checked by: | APB |
| Project No: | 326R | | 399751.87 mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 41.47 mOD | | |
| Engineer: | APB | | | Weather: | Heavy Rain, Strong Winds |
| Date of test: | 17/02/2022 | Start Depth: | 0 mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 145 | | 0 | 0 |
| 2 | 2 | 160 | | 35 | 35 |
| 2 | 4 | 164 | | 70 | 105 |
| 2 | 6 | 176 | | 124 | 229 |
| 2 | 8 | 182 | | 56 | 285 |
| 2 | 10 | 203 | | 55 | 340 |
| 2 | 12 | 230 | | 95 | 435 |
| 2 | 14 | 280 | | 94 | 529 |
| 2 | 16 | 302 | | 76 | 605 |
| 2 | 18 | 340 | 72 | 57 | 662 |
| 2 | 20 | 370 | | 90 | 752 |
| 2 | 22 | 401 | | 32 | 784 |
| 2 | 24 | 442 | | 27 | 811 |
| 2 | 26 | 473 | | 24 | 835 |
| 2 | 28 | 495 | | 40 | 875 |
| 2 | 30 | 530 | | 19 | 894 |
| 2 | 32 | 540 | | 27 | 921 |
| 2 | 34 | 600 | | 49 | 970 |
| 2 | 36 | 627 | | 72 | 1042 |
| 2 | 38 | 657 | | 63 | 1105 |
| 2 | 40 | 710 | | 47 | 1152 |
| 2 | 42 | 734 | | 42 | 1194 |
| 2 | 44 | 780 | | 40 | 1234 |
| 2 | 46 | 808 | | 40 | 1274 |
| 2 | 48 | 830 | | 32 | 1306 |
| 2 | 50 | 832 | 65 | 29 | 1335 |
| 2 | 52 | 90 | | 35 | 1370 |
| 2 | 54 | 130 | | 36 | 1406 |
| 2 | 56 | 168 | 50 | 34 | 1440 |
| 2 | 58 | 210 | | 50 | 1490 |
| 2 | 60 | 240 | | 110 | 1600 |
| 2 | 62 | 265 | | 72 | 1672 |
| 2 | 64 | 290 | | 45 | 1717 |
| 2 | 66 | 315 | | 31 | 1748 |
| 2 | 68 | 336 | | 52 | 1800 |
| 2 | 70 | 356 | | 50 | 1850 |
| 2 | 72 | 365 | | 60 | 1910 |
| 2 | 74 | 376 | | 50 | 1960 |
| 2 | 76 | 382 | | 67 | 2027 |
| 2 | 78 | 390 | | 43 | 2070 |
| 2 | 80 | 410 | | 41 | 2111 |
| 2 | 82 | 442 | | 59 | 2170 |
| 2 | 84 | 452 | 52 | 70 | 2240 |
| 2 | 86 | 460 | | 148 | 2388 |
| 2 | 88 | 310 | | 110 | 2498 |
| 2 | 90 | 370 | | 60 | 2558 |
| 2 | 92 | 423 | | 53 | 2611 |
| 5 | 97 | 504 | | 81 | 2692 |
| 5 | 102 | 581 | | 77 | 2769 |
| 5 | 107 | 644 | | 63 | 2832 |

Comments:

TRL carried out at south end of trench. DCP TRL test terminated due to refusal at 3825mm.

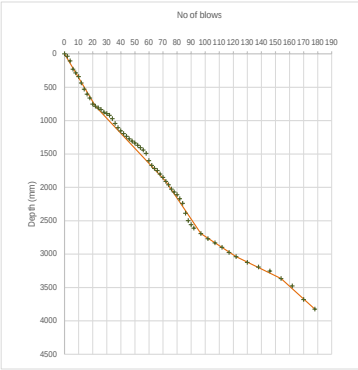
# DYNAMIC CONE PENETRATION TEST

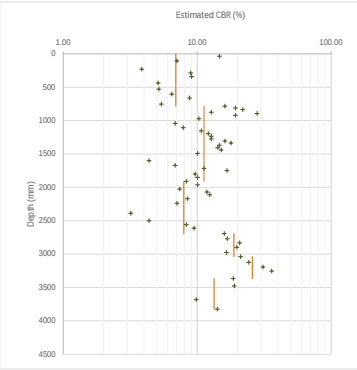
Test Location: **TT303**



| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF GI | Survey grid system: | OSGB | Hole type: | DCP |
| | | Co-ordinates: | 384850.08 mE | Checked by: | APB |
| Project No: | 326R | | 399751.87 mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 41.47 mOD | | |
| Engineer: | APB | | | Weather: | Heavy Rain, Strong Winds |
| Date of test: | 17/02/2022 | Start Depth: | 0 mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 5 | 112 | 710 | | 66 | 2898 |
| 5 | 117 | 788 | | 78 | 2976 |
| 5 | 122 | 850 | 68 | 62 | 3038 |
| 8 | 130 | 155 | | 87 | 3125 |
| 8 | 138 | 224 | | 69 | 3194 |
| 8 | 146 | 284 | | 60 | 3254 |
| 8 | 154 | 396 | | 112 | 3366 |
| 8 | 162 | 506 | | 110 | 3476 |
| 8 | 170 | 710 | | 204 | 3680 |
| 8 | 178 | 855 | | 145 | 3825 |




| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 784 | 6.9 |
| 2 | 784 | 1910 | 11 |
| 3 | 1910 | 2692 | 7.9 |
| 4 | 2692 | 3038 | 19 |
| 5 | 3038 | 3366 | 26 |
| 6 | 3366 | 3825 | 13 |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out at south end of trench. DCP TRL test terminated due to refusal at 3825mm.

# TRIAL PIT LOG

Trial Pit No.
TT303A
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384854.13 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399757.01 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.48 mOD | Scale: | 1:33 |
| Date Started: | 17/02/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 17/02/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 1.10m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey brown gravelly silty slightly clayey fine to medium SAND with high rootlet and root content (<55mm) and low cobble content. Gravel is sub angular and angular fine to coarse of mixed lithology including brick, concrete, slag and sandstone. Cobbles are sub angular and sub rounded of concrete. | | [0.35] | | | | | | | | |
| [MADE GROUND. ] | | 0.35 | 41.13 | | | | | | | |
| MADE GROUND: Light brown slightly sandy angular fine to coarse GRAVEL of limestone. | | 0.50 | 40.98 | | | | | | | |
| [TYPE 1 SUB BASE] | | 0.65 | 40.83 | 0.60 | ES | | | | | |
| MADE GROUND: Dark grey black becoming dark brown gravelly very silty fine to coarse SAND (partially of ash). Gravel is sub angular to angular fine to coarse of mixed lithology including slag, clinker and brick. | | [0.45] | | 0.60 | ES | | | | | |
| [MADE GROUND ] | | 1.10 | 40.38 | 0.60 | | PID | 9.40 | ppm | | |
| MADE GROUND: Brown and reddish brown gravelly slightly sandy CLAY with low root content. Gravel is sub angular and sub rounded fine to coarse of brick and sandstone. Roots are <10mm. | | | | 1.00 | B | | | | | |
| [MADE GROUND] | | | | 1.00 | D | | | | | |
| *0.65m : Mexe Cone: 4, 4, 6, 12, 14* | | | | 1.00 | ES | | | | | |
| *0.90 - 1.00m : Reddish brown fine and medium sand.* | | | | 1.00 | | PID | 0.00 | ppm | | |
| *1.00m : Localised grey silt bands.* | | | | | | | | | | |
| Trial Pit Terminated at 1.10m | | | | | | | | | | |

Reason for Hole Termination: Upon the design engineers instructions

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.00 | 4.50 | 3.00 | Stable | N/A | Andy Bird | 15T Tracked Excavator | Pit extended from TT303 due to exposed steel pipe and timber beam. |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

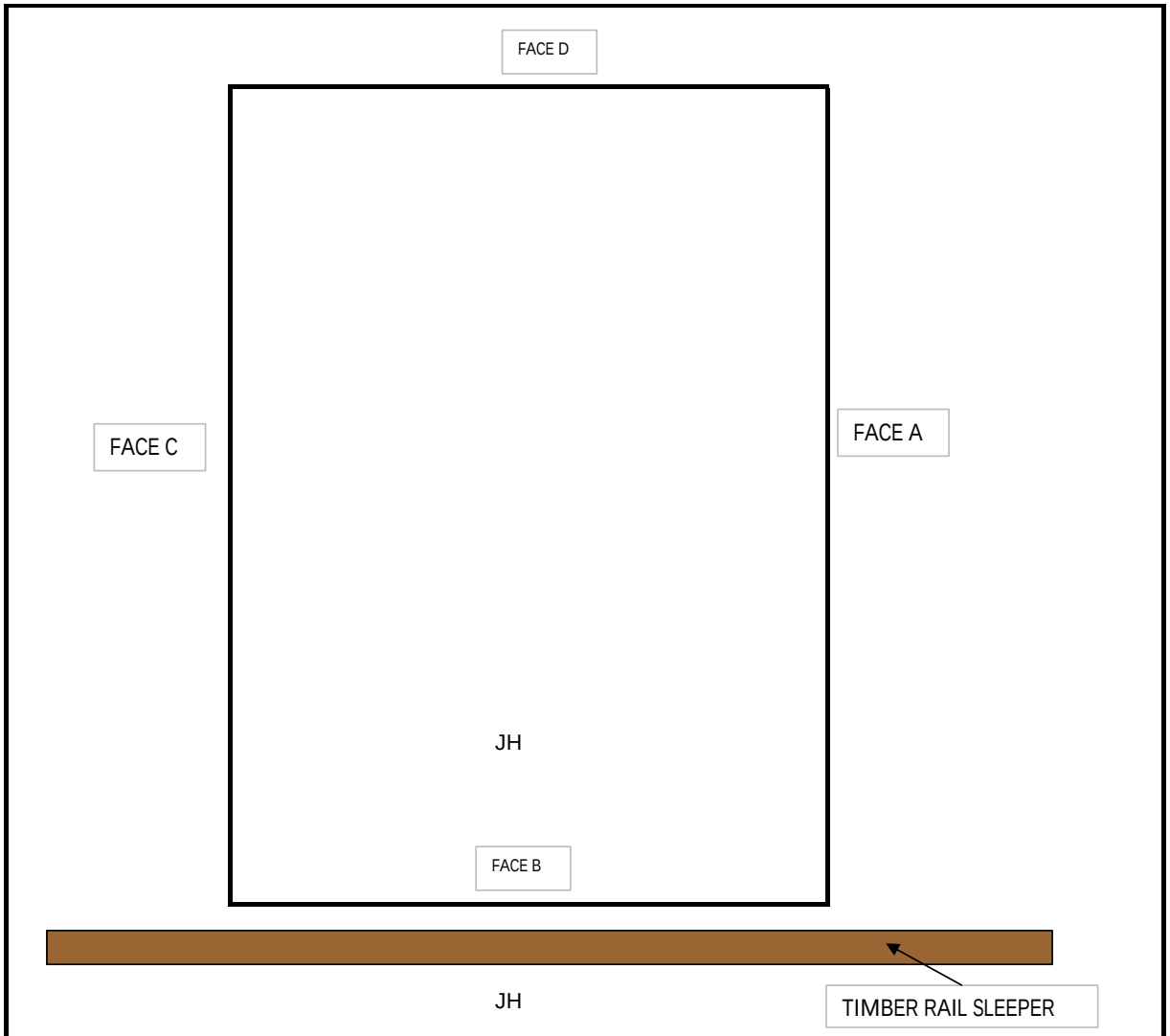
| Depth (m) | Remarks |
|---|---|
| | |

Backfill Details

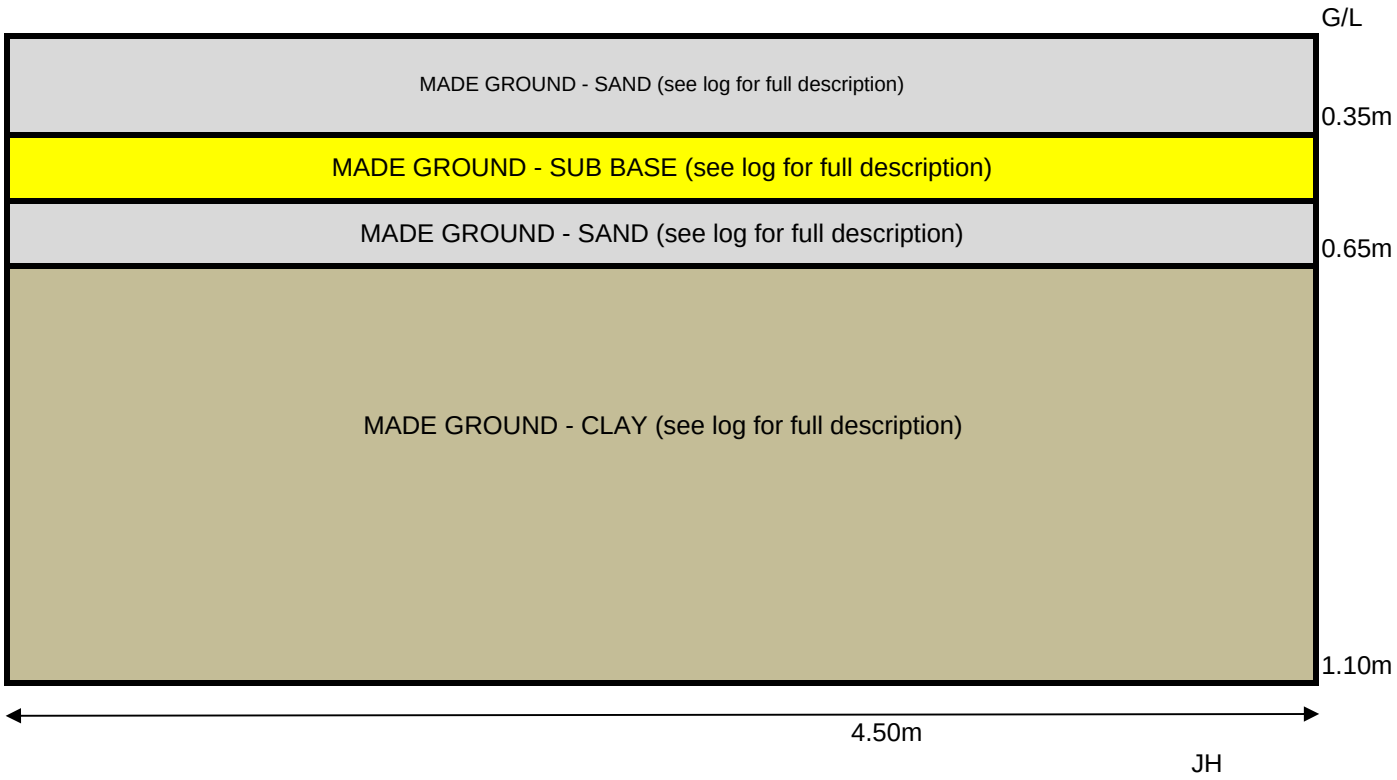
| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 1.10 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

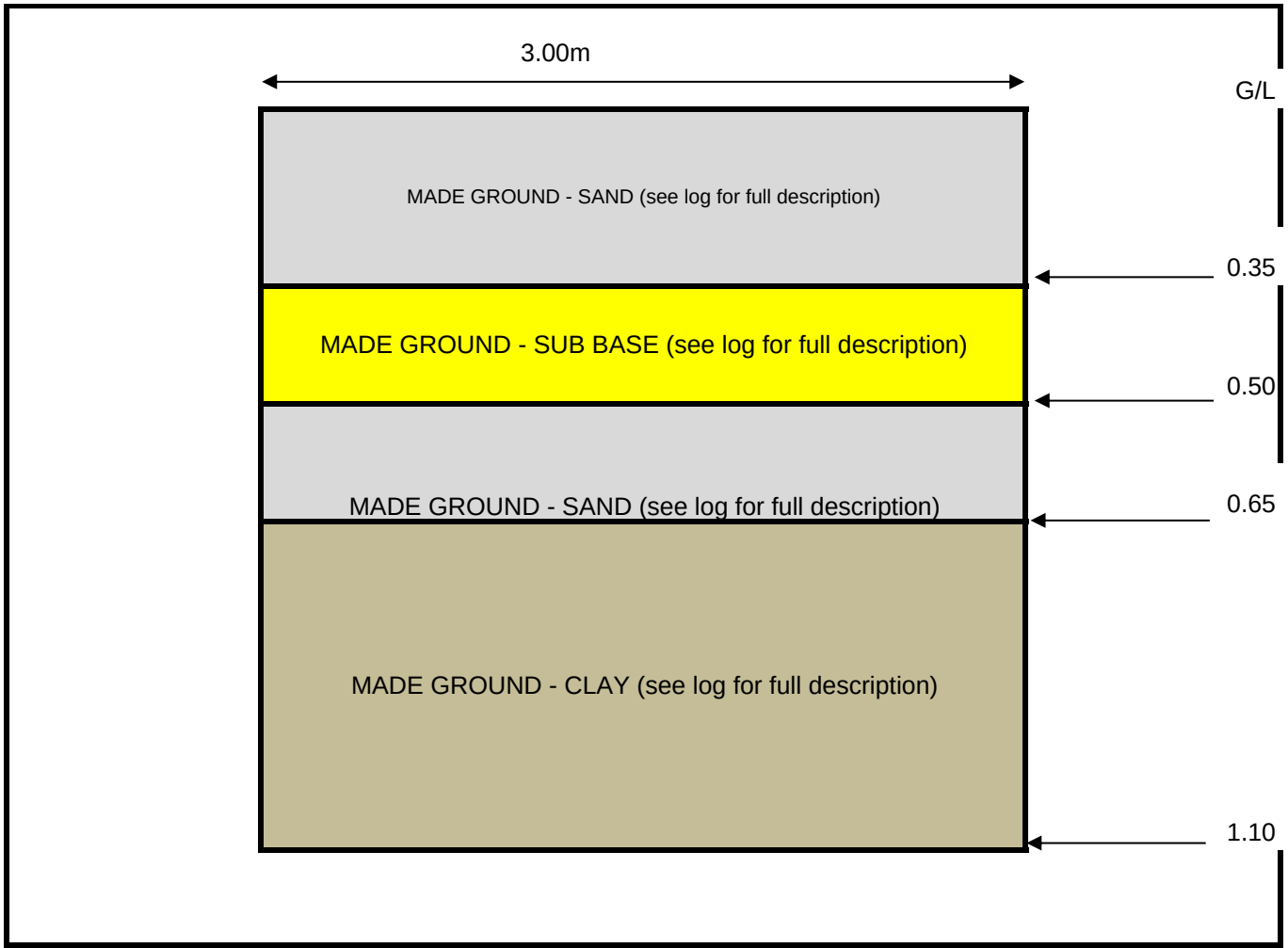



| | | | | | |
|---|---|---|---|---|---|
| Notes:<br>FACE A 4.50m<br>FACE B 3.00m<br>FACE C 4.50m<br>FACE D 3.00m | Trial Trench Ref:<br>TT303A | Title:<br>**Trial Trench Sketch** | | bam ritchies | |
| | View:<br>PLAN | Prepared:<br>APB | Drawn:<br>APB | Contract:<br>**Victoria North HiF Enabling Works** | Scale:<br>NTS |
| | Face:<br>A-D | Approved:<br>JH | Date:<br>Jun-22 | Drawing No:<br>BAX.326R.TT303A.SK001 | Revision:<br>00 |




Notes:

| | | | | |
|---|---|---|---|---|
| Trial Trench R: TT303A | Title: **Trial Trench Sketch** | | bam ritchies | |
| View: END | Prepared: APB | Drawn: APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| Face: A | Approved: JH | Date: Jun-22 | Drawing No: BAX.326R.TT303A.SK002 | Revision: 00 |




| | | | | | |
|---|---|---|---|---|---|
| Notes: | Trial Trench Ref: TT303A | Title: **Trial Trench Sketch** | | bam ritchies | |
| | View: END | Prepared: APB | Drawn: APB | Contract: **Victoria North HiF Enabling Works** | Scale: NTS |
| | Face: B | Approved: JH | Date: Jun-22 | Drawing No: BAX.326R.TT303A.SK003 | Revision: 00 |

# TRIAL PIT LOG

Trial Pit No.
TP304
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384627.23 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399632.01 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.34 mOD | Scale: | 1:33 |
| Date Started: | 22/02/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 22/02/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 3.00m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing: Depth (m) | Type | Test | Test Result | Units | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Brown gravelly silty clayey fine to coarse SAND with low root and cobble content. Roots are (<5mm), cobbles are sub angular of brick. Gravel is sub angular and sub rounded fine to coarse of mixed lithology including brick, sandstone, and concrete. [MADE GROUND ] | | 0.10 | 41.24 | | | | | | | |
| | | | | 0.30 | ES | | | | | |
| | | | | 0.30 | | PID | 0.00 | ppm | | |
| | | | | 0.50 | B | | | | | |
| MADE GROUND: Dark grey brown very gravelly slightly silty fine to coarse SAND (predominantly of ash). Gravel is sub angular and sub rounded clinker, basal, shale and brick. [MADE GROUND] | | | | 0.50 | ES | | | | | |
| | | | | 0.50 | | PID | 0.00 | ppm | | |
| *1.00 - 1.35m : 2.0m long pocket of brown slightly silty clayey fine to coarse SAND. Gravel of sub angular fine and medium of sandstone.* | | | | 1.00 | B | | | | | |
| | | | | 1.20 | ES | | | | | |
| | | | | 1.20 | | PID | 0.00 | ppm | | |
| *1.35 - 2.00m : Ash content reduces* | | [2.90] | | | | | | | | |
| *1.70m : Sandstone boulder (300x350mm)* | | | | | | | | | | |
| | | | | 2.00 | B | | | | | |
| | | | | 2.00 | ES | | | | | |
| | | | | 2.00 | | PID | 0.00 | ppm | | |
| *2.40 - 3.00m : Low to medium cobbles content of fragmented to whole bricks.* | | | | 2.45 | ES | | | | | |
| | | | | 2.45 | | PID | 0.00 | ppm | | |
| | | | | 2.90 | B | | | | | |
| Trial Pit Terminated at 3.00m | | 3.00 | 38.34 | 2.90 | B | | | | | |

Reason for Hole Termination: Pit Instability

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 3.00 | 3.50 | 0.65 | Stable GL to 1.4m, unstable below. | N/A | Andy Bird | 15T Tracked excavator | Dry |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

| Depth (m) | Remarks |
|---|---|
| | |

Backfill Details

| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 3.00 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'



TP304: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP304: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI




TP304: Spoil

bam ritchies

# Trial Pit Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**

# DYNAMIC CONE PENETRATION TEST

Test Location: **TP304**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384627.23 | mE | Checked by: | APB |
| Project No: | 326R | | 399632.01 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 41.34 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, clear |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 145 | | 0 | 0 |
| 2 | 2 | 160 | | 50 | 50 |
| 2 | 4 | 164 | | 45 | 95 |
| 2 | 6 | 176 | | 35 | 130 |
| 2 | 8 | 182 | | 15 | 145 |
| 2 | 10 | 203 | | 15 | 160 |
| 2 | 12 | 230 | | 15 | 175 |
| 2 | 14 | 280 | | 20 | 195 |
| 2 | 16 | 302 | | 10 | 205 |
| 2 | 18 | 340 | | 30 | 235 |
| 2 | 20 | 370 | | 20 | 255 |
| 2 | 22 | 401 | | 20 | 275 |
| 2 | 24 | 442 | | 20 | 295 |
| 2 | 26 | 473 | | 30 | 325 |
| 2 | 28 | 495 | | 20 | 345 |
| 2 | 30 | 530 | | 30 | 375 |
| 2 | 32 | 540 | | 40 | 415 |
| 2 | 34 | 600 | | 60 | 475 |
| 2 | 36 | 627 | | 30 | 505 |
| 2 | 38 | 657 | | 30 | 535 |
| 2 | 40 | 710 | | 50 | 585 |
| 2 | 42 | 734 | | 40 | 625 |
| 2 | 44 | 780 | | 90 | 715 |
| 2 | 46 | 808 | 100 | 80 | 795 |
| 2 | 48 | 830 | | 50 | 845 |
| 2 | 50 | 832 | 65 | 50 | 895 |
| 2 | 52 | 90 | | 60 | 955 |
| 2 | 54 | 130 | | 70 | 1025 |
| 2 | 56 | 168 | | 80 | 1105 |
| 2 | 58 | 210 | | 130 | 1235 |
| 2 | 60 | 240 | | 100 | 1335 |
| 2 | 62 | 265 | | 80 | 1415 |
| 2 | 64 | 290 | | 50 | 1465 |
| 2 | 66 | 315 | 40 | 40 | 1505 |
| 2 | 68 | 336 | | 80 | 1585 |
| 2 | 70 | 356 | | 70 | 1655 |
| 2 | 72 | 365 | | 70 | 1725 |
| 2 | 74 | 376 | | 80 | 1805 |
| 2 | 76 | 382 | | 100 | 1905 |
| 2 | 78 | 390 | | 130 | 2035 |
| 2 | 80 | 410 | | 100 | 2135 |
| 2 | 82 | 442 | | 100 | 2235 |
| 2 | 84 | 452 | 30 | 50 | 2285 |
| 2 | 86 | 460 | | 90 | 2375 |
| 2 | 88 | 220 | | 100 | 2475 |
| 2 | 90 | 266 | | 46 | 2521 |
| 2 | 92 | 330 | | 64 | 2585 |
| 2 | 94 | 370 | | 40 | 2625 |
| 2 | 96 | 410 | | 40 | 2665 |
| 2 | 98 | 440 | | 30 | 2695 |

Comments:

Commenced at north end of TP304. DCP TRL test terminated due to refusal at 3095mm.

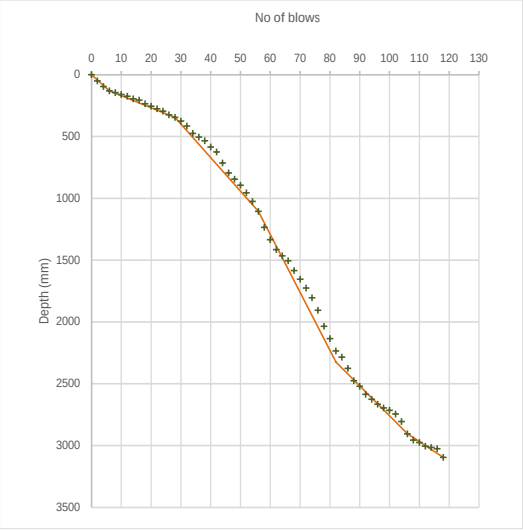
# DYNAMIC CONE PENETRATION TEST

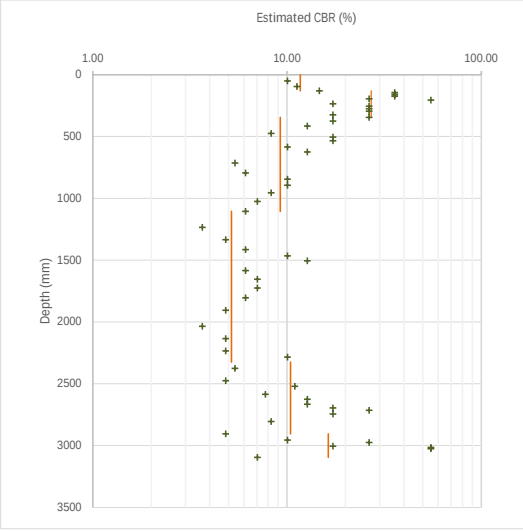
Test Location: **TP304**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384627.23 | mE | Checked by: | APB |
| Project No: | 326R | | 399632.01 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 41.34 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, clear |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 2 | 100 | 460 | | 20 | 2715 |
| 2 | 102 | 490 | | 30 | 2745 |
| 2 | 104 | 550 | | 60 | 2805 |
| 2 | 106 | 650 | | 100 | 2905 |
| 2 | 108 | 700 | | 50 | 2955 |
| 2 | 110 | 720 | | 20 | 2975 |
| 2 | 112 | 750 | | 30 | 3005 |
| 2 | 114 | 760 | | 10 | 3015 |
| 2 | 116 | 770 | | 10 | 3025 |
| 2 | 118 | 840 | | 70 | 3095 |




| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 130 | 12 |
| 2 | 130 | 345 | 27 |
| 3 | 345 | 1105 | 9.2 |
| 4 | 1105 | 2325 | 5.2 |
| 5 | 2325 | 2905 | 10 |
| 6 | 2905 | 3095 | 16 |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

Commenced at north end of TP304. DCP TRL test terminated due to refusal at 3095mm.

# TRIAL PIT LOG

Trial Pit No.
TP305
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384559.16 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399588.00 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.05 mOD | Scale: | 1:33 |
| Date Started: | 23/02/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 23/02/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 3.00m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey black silty fine to coarse SAND (partially of ash) with high rootlet content and low root content (<10mm). [MADE GROUND] | | 0.25 | 40.80 | 0.30 | ES | | | | | |
| MADE GROUND: Dark grey black gravelly silty clayey fine to coarse SAND (predominantly of ash). Gravel is sub angular fine to coarse of clinker, slag and brick. [MMDE GROUND] | | | | 0.30 | | PID | 0.00 | ppm | | |
| | | | | 0.50 | ES | | | | | |
| | | | | 0.50 | | PID | 0.00 | ppm | | |
| | | | | 1.00 | B | | | | | |
| *1.10 - 14.00m : Black* | | | | 1.00 | ES | | | | | |
| | | | | 1.00 | | PID | 0.00 | ppm | | |
| *1.20 - 1.34m : Face B: 1.2m long band of firm light brown sandy CLAY. (See D & ES 1.20m).* | | | | 1.20 | D | | | | | |
| | | | | 1.20 | | PID | 0.00 | ppm | | |
| | | | | 1.20 - 1.34 | ES | | | | | |
| *1.60 - 2.00m : Face B: Reddish brown fine to coarse GRAVEL of burnt shale. (See B 2.0m).* | | [2.75] | | 1.60 | B | | | | | |
| | | | | 2.00 | B | | | | | |
| | | | | 2.00 | ES | | | | | |
| | | | | 2.00 | | PID | 0.00 | ppm | | |
| Trial Pit Terminated at 3.00m | | 3.00 | 38.05 | 3.00 | B | | | | | |
| | | | | 3.00 | ES | | | | | |
| | | | | 3.00 | ES | | | | | |
| | | | | 3.00 | | PID | 0.00 | ppm | | |

Reason for Hole Termination: Pit Instability

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 3.00 | 4.40 | 0.70 | Unstable 0.2m - 3.0m | N/A | Andy Bird | 15T Tracked excavator | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

| Depth (m) | Remarks |
|---|---|
| | |

Backfill Details

| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 3.00 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'




TP305: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP305: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP305: 0.00 - 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI




TP305: Spoil

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI

# DYNAMIC CONE PENETRATION TEST

Test Location:
**TP305**


| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384559.16 | mE | Checked by: | APB |
| Project No: | 326R | | 399588.00 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 41.05 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 126 | | 0 | 0 |
| 1 | 1 | 150 | | 24 | 24 |
| 1 | 2 | 160 | | 10 | 34 |
| 1 | 3 | 170 | | 10 | 44 |
| 1 | 4 | 180 | | 10 | 54 |
| 1 | 5 | 190 | | 10 | 64 |
| 1 | 6 | 200 | | 10 | 74 |
| 1 | 7 | 210 | | 10 | 84 |
| 1 | 8 | 220 | | 10 | 94 |
| 1 | 9 | 240 | | 20 | 114 |
| 1 | 10 | 250 | | 10 | 124 |
| 1 | 11 | 270 | | 20 | 144 |
| 1 | 12 | 280 | | 10 | 154 |
| 1 | 13 | 310 | | 30 | 184 |
| 1 | 14 | 320 | | 10 | 194 |
| 1 | 15 | 340 | | 20 | 214 |
| 1 | 16 | 400 | | 60 | 274 |
| 1 | 17 | 420 | | 20 | 294 |
| 1 | 18 | 440 | | 20 | 314 |
| 1 | 19 | 470 | | 30 | 344 |
| 1 | 20 | 510 | | 40 | 384 |
| 1 | 21 | 520 | | 10 | 394 |
| 1 | 22 | 550 | | 30 | 424 |
| 1 | 23 | 560 | | 10 | 434 |
| 1 | 24 | 600 | | 40 | 474 |
| 1 | 25 | 640 | | 40 | 514 |
| 1 | 26 | 700 | | 60 | 574 |
| 1 | 27 | 810 | 20 | 110 | 684 |
| 1 | 28 | 110 | | 90 | 774 |
| 1 | 29 | 170 | | 60 | 834 |
| 1 | 30 | 260 | | 90 | 924 |
| 1 | 31 | 320 | | 60 | 984 |
| 1 | 32 | 360 | | 40 | 1024 |
| 1 | 33 | 390 | | 30 | 1054 |
| 1 | 34 | 460 | | 70 | 1124 |
| 1 | 35 | 590 | | 130 | 1254 |
| 1 | 36 | 660 | | 70 | 1324 |
| 1 | 37 | 720 | | 60 | 1384 |
| 1 | 38 | 800 | 120 | 80 | 1464 |
| 1 | 39 | 190 | | 70 | 1534 |
| 1 | 40 | 330 | | 140 | 1674 |
| 1 | 41 | 450 | | 120 | 1794 |
| 1 | 42 | 570 | | 120 | 1914 |
| 1 | 43 | 780 | | 210 | 2124 |
| 1 | 44 | 830 | 40 | 50 | 2174 |
| 1 | 45 | 80 | | 40 | 2214 |
| 1 | 46 | 120 | | 40 | 2254 |
| 1 | 47 | 150 | | 30 | 2284 |
| 1 | 48 | 330 | | 180 | 2464 |
| 1 | 49 | 370 | | 40 | 2504 |

Comments:
TRL carried out at south end of pit. DCP TRL test terminated due to refusal at 3024mm.

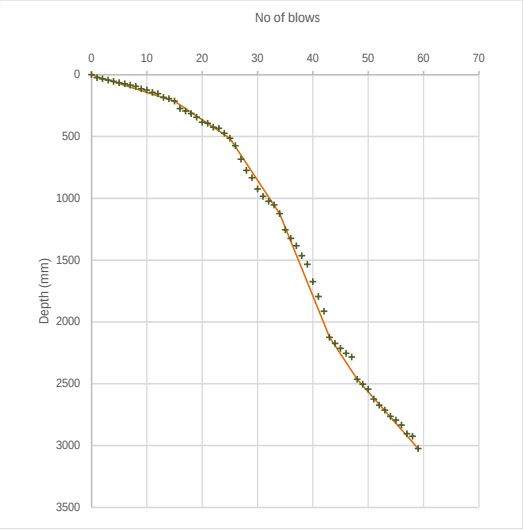
# DYNAMIC CONE PENETRATION TEST

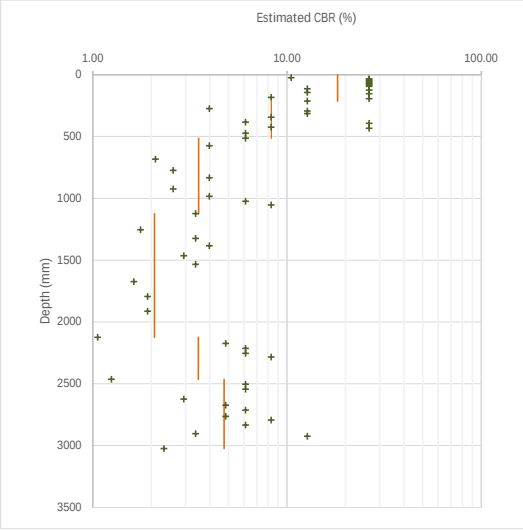
Test Location: **TP305**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384559.16 | mE | Checked by: | APB |
| Project No: | 326R | | 399588.00 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 41.05 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 1 | 50 | 410 | | 40 | 2544 |
| 1 | 51 | 490 | | 80 | 2624 |
| 1 | 52 | 540 | | 50 | 2674 |
| 1 | 53 | 580 | | 40 | 2714 |
| 1 | 54 | 630 | | 50 | 2764 |
| 1 | 55 | 660 | | 30 | 2794 |
| 1 | 56 | 700 | | 40 | 2834 |
| 1 | 57 | 770 | | 70 | 2904 |
| 1 | 58 | 790 | | 20 | 2924 |
| 1 | 59 | 890 | | 100 | 3024 |




| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 214 | 18 |
| 2 | 214 | 514 | 8.3 |
| 3 | 514 | 1124 | 3.5 |
| 4 | 1124 | 2124 | 2.1 |
| 5 | 2124 | 2464 | 3.5 |
| 6 | 2464 | 3024 | 4.7 |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out at south end of pit. DCP TRL test terminated due to refusal at 3024mm.

# TRIAL PIT LOG

Trial Pit No.
TP306
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384502.15 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399558.56 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 39.29 mOD | Scale: | 1:33 |
| Date Started: | 25/02/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 25/02/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 3.00m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey very gravelly slightly silty fine to coarse SAND (predominantly of ash) with low cobble content. Gravel is sub angular fine to coarse of mixed lithology including clinker, slag, concrete and brick. Cobbles are sub angular of clinker and brick.<br>[MADE GROUND. ]<br>*0.00 - 0.20m : Medium to high rootlet content with low root content (<10mm).*<br>*0.20 - 0.75m : Exposed red brick wall trending 45deg N*<br>*0.55 - 0.95m : Localised bands of grey and black approx. 200mm thick.*<br>*0.75 - 0.95m : 200mm diameter clay pipe end exposed trending 314deg NW. Dry.* | | [2.40] | | 0.30<br>0.30<br>0.50<br>0.50<br>0.50<br>1.00<br>1.00<br>1.00<br>1.00<br>2.00<br>2.00 | ES<br><br>B<br>ES<br><br><br><br>ES<br><br><br><br>ES<br><br> | <br>PID<br><br><br>PID<br><br><br><br>PID<br><br><br>PID | <br>0.00<br><br><br>0.00<br><br><br><br>0.00<br><br><br>0.00 | <br>ppm<br><br><br>ppm<br><br><br><br>ppm<br><br><br>ppm | | |
| MADE GROUND: Light brown locally grey slightly gravelly silty fine to coarse SAND. Gravel is sub angular fine of sandstone. Noted slight hydrocarbon odour.<br>[MADE GROUND ] | | 2.40<br>[0.60] | 36.89 | 2.40 - 2.90<br>2.90 | B<br> | <br>PID | <br>0.00 | <br>ppm | | |
| Trial Pit Terminated at 3.00m | | 3.00 | 36.29 | 3.00 | ES | | | | | |

Reason for Hole Termination: Pit Instability

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 3.00 | 5.50 | 0.70 | Unstable 0.2 - 3.0m | N/A | Andy Bird | 15T Tracked Excavator | 81deg east |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

| Depth (m) | Remarks |
|---|---|
| | |

Backfill Details

| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 3.00 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'



TP306: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP306: 0.00 -3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP306: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI




TP306: Spoil

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI

# DYNAMIC CONE PENETRATION TEST

Test Location:
**TP306**


| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384502.15 | mE | Checked by: | APB |
| Project No: | 326R | | 399558.56 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 39.29 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 120 | | 0 | 0 |
| 1 | 1 | 150 | | 30 | 30 |
| 1 | 2 | 170 | | 20 | 50 |
| 1 | 3 | 190 | | 20 | 70 |
| 1 | 4 | 200 | | 10 | 80 |
| 1 | 5 | 210 | | 10 | 90 |
| 1 | 6 | 220 | | 10 | 100 |
| 1 | 7 | 230 | | 10 | 110 |
| 1 | 8 | 240 | | 10 | 120 |
| 1 | 9 | 250 | | 10 | 130 |
| 1 | 10 | 260 | | 10 | 140 |
| 1 | 11 | 270 | | 10 | 150 |
| 1 | 12 | 282 | | 12 | 162 |
| 1 | 13 | 290 | | 8 | 170 |
| 1 | 14 | 300 | | 10 | 180 |
| 1 | 15 | 310 | | 10 | 190 |
| 1 | 16 | 320 | | 10 | 200 |
| 1 | 17 | 330 | | 10 | 210 |
| 1 | 18 | 340 | | 10 | 220 |
| 1 | 19 | 360 | | 20 | 240 |
| 1 | 20 | 370 | | 10 | 250 |
| 1 | 21 | 410 | | 40 | 290 |
| 1 | 22 | 440 | | 30 | 320 |
| 1 | 23 | 459 | | 19 | 339 |
| 1 | 24 | 470 | | 11 | 350 |
| 1 | 25 | 480 | | 10 | 360 |
| 1 | 26 | 510 | | 30 | 390 |
| 1 | 27 | 520 | | 10 | 400 |
| 1 | 28 | 530 | | 10 | 410 |
| 1 | 29 | 540 | | 10 | 420 |
| 1 | 30 | 550 | | 10 | 430 |
| 1 | 31 | 570 | | 20 | 450 |
| 1 | 32 | 580 | | 10 | 460 |
| 1 | 33 | 600 | | 20 | 480 |
| 1 | 34 | 620 | | 20 | 500 |
| 1 | 35 | 650 | | 30 | 530 |
| 1 | 36 | 670 | | 20 | 550 |
| 1 | 37 | 700 | | 30 | 580 |
| 1 | 38 | 740 | | 40 | 620 |
| 1 | 39 | 770 | | 30 | 650 |
| 1 | 40 | 840 | 20 | 70 | 720 |
| 1 | 41 | 60 | | 40 | 760 |
| 1 | 42 | 100 | | 40 | 800 |
| 1 | 43 | 150 | | 50 | 850 |
| 1 | 44 | 180 | | 30 | 880 |
| 1 | 45 | 200 | | 20 | 900 |
| 1 | 46 | 230 | | 30 | 930 |
| 1 | 47 | 260 | | 30 | 960 |
| 1 | 48 | 320 | | 60 | 1020 |
| 1 | 49 | 360 | | 40 | 1060 |

Comments:
TRL carried out at south end of pit. DCP TRL test terminated due to refusal at 1818mm.

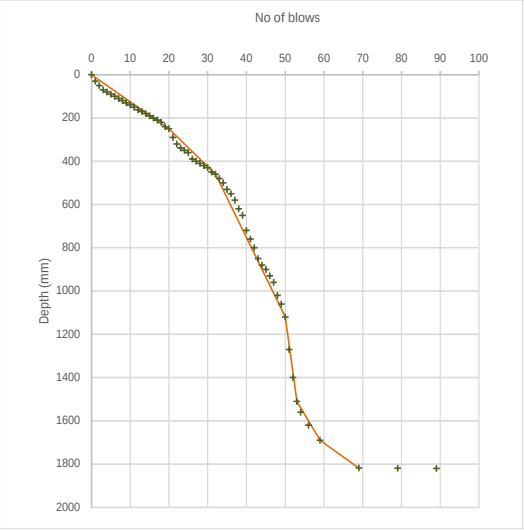
# DYNAMIC CONE PENETRATION TEST

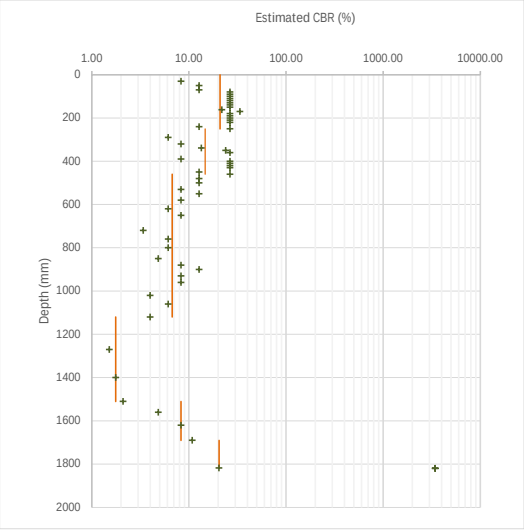
Test Location: **TP306**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384502.15 | mE | Checked by: | APB |
| Project No: | 326R | | 399558.56 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 39.29 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 1 | 50 | 420 | | 60 | 1120 |
| 1 | 51 | 570 | | 150 | 1270 |
| 1 | 52 | 700 | | 130 | 1400 |
| 1 | 53 | 810 | 30 | 110 | 1510 |
| 1 | 54 | 80 | | 50 | 1560 |
| 2 | 56 | 140 | | 60 | 1620 |
| 3 | 59 | 210 | | 70 | 1690 |
| 10 | 69 | 338 | | 128 | 1818 |
| 10 | 79 | 339 | | 1 | 1819 |
| 10 | 89 | 340 | | 1 | 1820 |




| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 250 | 21 |
| 2 | 250 | 460 | 15 |
| 3 | 460 | 1120 | 6.7 |
| 4 | 1120 | 1510 | 1.8 |
| 5 | 1510 | 1690 | 8.3 |
| 6 | 1690 | 1818 | 20 |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out at south end of pit. DCP TRL test terminated due to refusal at 1818mm.

# TRIAL PIT LOG

Trial Pit No.
TP307
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384457.26 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399506.74 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 44.00 mOD | Scale: | 1:33 |
| Date Started: | 23/02/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 23/02/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 2.80m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey black gravelly silty fine to coarse SAND (predominantly of ash). Gravel is sub angular fine to coarse of clinker, slag, brick and concrete. Sand is very loose and dry. [MADE GROUND] | | | | 0.30 | ES | | | | | |
| | | | | 0.30 | | PID | 0.10 | ppm | | |
| | | | | 0.50 | ES | | | | | |
| | | | | 0.50 | | PID | 0.00 | ppm | | |
| *0.65m : 2nr rail tracks 1.6m apart trending from turntable Nw. Pit extended* | | | | | | | | | | |
| | | | | 1.00 | ES | | | | | |
| | | | | 1.00 | LB | | | | | |
| | | | | 1.00 | | PID | 0.00 | ppm | | |
| | | [2.80] | | | | | | | | |
| | | | | 2.00 | D | | | | | |
| | | | | 2.00 | ES | | | | | |
| | | | | 2.00 | ES | | | | | |
| | | | | 2.00 | | PID | 0.00 | ppm | | |
| Trial Pit Terminated at 2.80m | | 2.80 | 41.20 | 2.80 | ES | | | | | |
| | | | | 2.80 | LB | | | | | |
| | | | | 2.80 | | PID | 0.00 | ppm | | |

Reason for Hole Termination: Pit instability

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 2.80 | 6.00 | 0.70 | Unstable GL - 2.8m | N/A | Andy Bird | 15T Tracked excavator | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

| Depth (m) | Remarks |
|---|---|
| | |

Backfill Details

| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 3.00 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'




TP307: 0.00 – 2.80m

bam ritchies

# Trial Pit Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**



TP307: 0.00 – 2.80m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP307: 0.00 – 2.80m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP307: 0.00 – 2.80m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP307: 0.00 – 2.80m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI




TP307: Spoil

bam ritchies

# Trial Pit Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**

# DYNAMIC CONE PENETRATION TEST

Test Location: **TP307**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | | Hole type: | DCP |
| | | Co-ordinates: | 384457.26 | mE | | Checked by: | APB |
| Project No: | 326R | | 399506.74 | mN | | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 44.00 | mOD | | | |
| Engineer: | APB | | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 150 | | 0 | 0 |
| 1 | 1 | 230 | | 80 | 80 |
| 1 | 2 | 510 | | 280 | 360 |
| 1 | 3 | 900 | 10 | 390 | 750 |
| 1 | 4 | 400 | | 390 | 1140 |
| 1 | 5 | 760 | | 360 | 1500 |
| 1 | 6 | 900 | 10 | 140 | 1640 |
| 1 | 7 | 210 | | 200 | 1840 |
| 1 | 8 | 620 | | 410 | 2250 |
| 1 | 9 | 840 | | 220 | 2470 |
| 1 | 10 | 910 | 18 | 70 | 2540 |
| 1 | 11 | 260 | | 242 | 2782 |
| 1 | 12 | 380 | | 120 | 2902 |
| 1 | 13 | 500 | | 120 | 3022 |
| 1 | 14 | 770 | | 270 | 3292 |
| 1 | 15 | 820 | | 50 | 3342 |
| 1 | 16 | 880 | | 60 | 3402 |

Comments:

TRL carried out at south end of pit. DCP TRL test terminated at 3402mm.

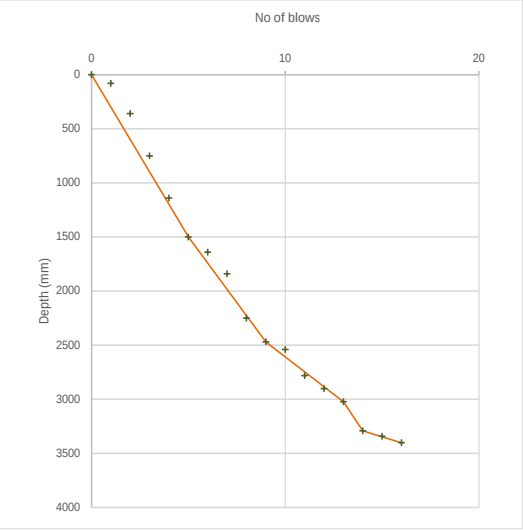
# DYNAMIC CONE PENETRATION TEST

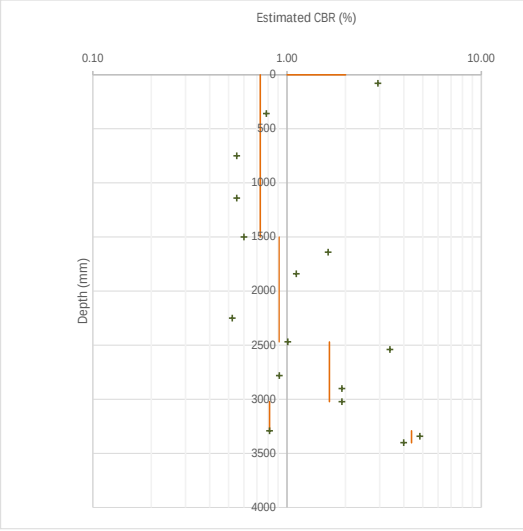
Test Location: **TP307**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384457.26 | mE | Checked by: | APB |
| Project No: | 326R | | 399506.74 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 44.00 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| | | | | | |
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| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 1500 | 0.73 |
| 2 | 1500 | 2470 | 0.91 |
| 3 | 2470 | 3022 | 1.7 |
| 4 | 3022 | 3292 | 0.81 |
| 5 | 3292 | 3402 | 4.4 |
| | | | |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out at south end of pit. DCP TRL test terminated at 3402mm.

# TRIAL PIT LOG

Trial Pit No.
TP308
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384576.42 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399641.42 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.08 mOD | Scale: | 1:33 |
| Date Started: | 22/02/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 22/02/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 3.00m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing: Depth (m) | Type | Test | Test Result | Units | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Dark grey black very gravelly silty fine to coarse SAND (predominantly of ash). Gravel is sub angular to angular fine to coarse of clinker, slag, granite and basalt. [MADE GROUND] | | [0.35] | | 0.30 | B | | | | | |
| | | 0.35 | 40.73 | 0.30 | ES | | | | | |
| MADE GROUND: Dark grey very sandy silty sub angular to angular fine to coarse GRAVEL of basalt and granite. Sand is fine to coarse (predominantly of ash). [MADE GROUND] | | | | 0.30 | | PID | 0.00 | ppm | | |
| | | | | 0.50 | ES | | | | | |
| | | | | 0.50 | | PID | 0.00 | ppm | | |
| | | [0.75] | | 0.60 | B | | | | | |
| | | | | 1.00 | ES | | | | | |
| | | 1.10 | 39.98 | | | | | | | |
| Firm brown locally light grey slightly gravelly slightly sandy CLAY. Gravel is fine of sandstone. [GLACIAL TILL] | | | | 1.20 | | PID | 0.00 | ppm | | |
| | | | | 1.25 | | HV | P57,R22 | kPa | | |
| *1.50m : Mexe Cone: CBR (1.0,) 1.0) CI (40) Large lump.* | | | | | | | | | | |
| | | | | 2.00 | B | | | | | |
| | | [1.90] | | 2.00 | ES | | | | | |
| | | | | 2.00 | | HV | P51,R15 | kPa | | |
| | | | | 2.00 | | PID | 0.00 | ppm | | |
| | | | | 2.50 | D | | | | | |
| | | | | 2.90 | ES | | | | ▼ | |
| | | 3.00 | 38.08 | 2.90 | | HV | P63,R19 | kPa | | |
| Trial Pit Terminated at 3.00m | | | | 2.90 | | PID | 0.00 | ppm | | |
| | | | | 3.00 | B | | | | | |

Reason for Hole Termination: Reached required depth

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 3.00 | 3.50 | 0.65 | Unstable 2.5m - 3.0m | N/A | Andy Bird | 15T tracked excavator | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

| Depth (m) | Remarks |
|---|---|
| 2.85 | slight to medium |

Backfill Details

| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 3.00 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'



TP308: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP308: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP308: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP308: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI




TP308: Spoil

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI

# DYNAMIC CONE PENETRATION TEST

Test Location:
**TP308**


| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384576.42 | mE | Checked by: | APB |
| Project No: | 326R | | 399641.42 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 41.08 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 135 | | 0 | 0 |
| 1 | 1 | 240 | | 105 | 105 |
| 1 | 2 | 275 | | 35 | 140 |
| 1 | 3 | 305 | | 30 | 170 |
| 1 | 4 | 325 | | 20 | 190 |
| 1 | 5 | 350 | | 25 | 215 |
| 1 | 6 | 415 | | 65 | 280 |
| 1 | 7 | 445 | | 30 | 310 |
| 1 | 8 | 470 | | 25 | 335 |
| 1 | 9 | 485 | | 15 | 350 |
| 1 | 10 | 500 | | 15 | 365 |
| 1 | 11 | 510 | | 10 | 375 |
| 1 | 12 | 520 | | 10 | 385 |
| 1 | 13 | 550 | | 30 | 415 |
| 1 | 14 | 565 | | 15 | 430 |
| 1 | 15 | 580 | | 15 | 445 |
| 1 | 16 | 610 | | 30 | 475 |
| 1 | 17 | 625 | | 15 | 490 |
| 1 | 18 | 640 | | 15 | 505 |
| 1 | 19 | 655 | | 15 | 520 |
| 1 | 20 | 665 | | 10 | 530 |
| 1 | 21 | 675 | | 10 | 540 |
| 1 | 22 | 690 | | 15 | 555 |
| 1 | 23 | 700 | | 10 | 565 |
| 1 | 24 | 720 | | 20 | 585 |
| 1 | 25 | 735 | | 15 | 600 |
| 1 | 26 | 745 | | 10 | 610 |
| 1 | 27 | 760 | | 15 | 625 |
| 1 | 28 | 770 | | 10 | 635 |
| 1 | 29 | 785 | | 15 | 650 |
| 1 | 30 | 795 | | 10 | 660 |
| 1 | 31 | 812 | 16 | 17 | 677 |
| 1 | 32 | 31 | | 15 | 692 |
| 1 | 33 | 50 | | 19 | 711 |
| 1 | 34 | 60 | | 10 | 721 |
| 1 | 35 | 69 | | 9 | 730 |
| 1 | 36 | 74 | | 5 | 735 |
| 1 | 37 | 88 | | 14 | 749 |
| 1 | 38 | 100 | | 12 | 761 |
| 1 | 39 | 116 | | 16 | 777 |
| 1 | 40 | 132 | | 16 | 793 |
| 1 | 41 | 148 | | 16 | 809 |
| 1 | 42 | 152 | | 4 | 813 |
| 1 | 43 | 160 | | 8 | 821 |
| 1 | 44 | 170 | | 10 | 831 |
| 1 | 45 | 190 | | 20 | 851 |
| 1 | 46 | 219 | | 29 | 880 |
| 1 | 47 | 224 | | 5 | 885 |
| 1 | 48 | 232 | | 8 | 893 |
| 1 | 49 | 240 | | 8 | 901 |

Comments:
TRL carried out at south end of pit. DCP TRL test terminated at 912mm.

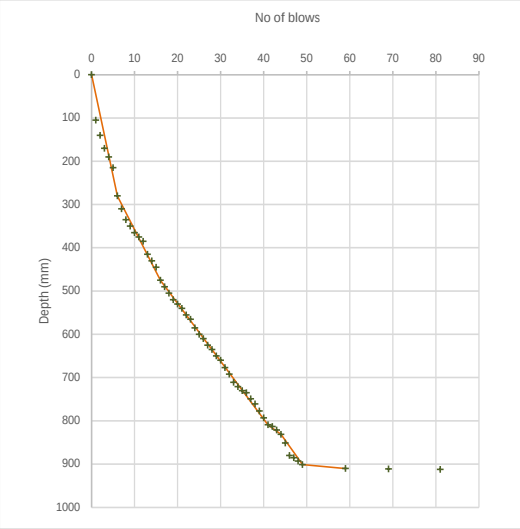
# DYNAMIC CONE PENETRATION TEST

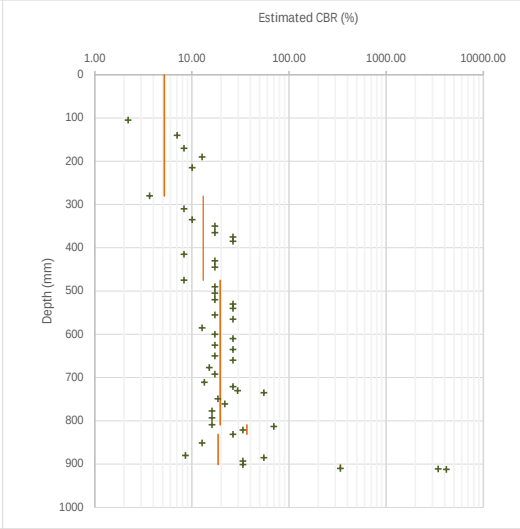
Test Location: **TP308**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384576.42 | mE | Checked by: | APB |
| Project No: | 326R | | 399641.42 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 41.08 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 10 | 59 | 249 | | 9 | 910 |
| 10 | 69 | 250 | | 1 | 911 |
| 12 | 81 | 251 | | 1 | 912 |
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| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 280 | 5.2 |
| 2 | 280 | 475 | 13 |
| 3 | 475 | 809 | 19 |
| 4 | 809 | 831 | 37 |
| 5 | 831 | 901 | 19 |
| 6 | 901 | 910 | 340 |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out at south end of pit. DCP TRL test terminated at 912mm.

# TRIAL PIT LOG

Trial Pit No.
TP309
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384723.42 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399769.78 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.88 mOD | Scale: | 1:33 |
| Date Started: | 23/02/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 23/02/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 3.00m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing: Depth (m) | Type | Test | Test Result | Units | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Dark grey slightly sandy slightly silty sub angular fine to coarse GRAVEL of basalt and granite. Sand is fine to coarse (predominantly of ash). [MADE GROUND] | | 0.10 | 42.78 | 0.10 | ES | | | | | |
| | | | | 0.10 | | PID | 0.00 | ppm | | |
| | | [0.30] | | 0.30 | ES | | | | | |
| MADE GROUND: Grey sub angular fine to coarse GRAVEL of basalt and granite. [MADE GROUND ] | | 0.40 | 42.48 | 0.30 | | PID | 0.00 | ppm | | |
| MADE GROUND: Dark grey silty very gravelly fine to coarse SAND (partially of ash). Gravel is sub angular fine to coarse of sandstone. [MADE GROUND ] | | | | 0.50 | ES | | | | | |
| | | | | 0.50 | LB | | | | | |
| | | [0.50] | | 0.50 | | PID | 0.00 | ppm | | |
| | | 0.90 | 41.98 | | | | | | | |
| Orange brown slightly gravelly slightly silty fine to coarse SAND with rare sub angular fine and medium gravel sized cemented pickets. Gravel is sub rounded fine to coarse of sandstone and quartzite. [GLACIAL TILL] | | | | 1.00 | ES | | | | | |
| | | | | 1.00 | | PID | 0.00 | ppm | | |
| | | | | 1.50 | D | | | | | |
| *1.60 - 3.00m : Timed excavation 17 mins.* | | | | | | | | | | |
| | | [2.10] | | 2.00 | ES | | | | | |
| | | | | 2.00 | LB | | | | | |
| | | | | 2.00 | | PID | 0.00 | ppm | | |
| | | 3.00 | 39.88 | 3.00 | B | | | | | |
| Trial Pit Terminated at 3.00m | | | | 3.00 | ES | | | | | |
| | | | | 3.00 | LB | | | | | |
| | | | | 3.00 | | PID | 0.00 | ppm | | |

Reason for Hole Termination: Reached required depth

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 3.00 | 4.50 | 0.70 | Stable GL - 2.4m, Unstable 2.4m - 3.0m | N/A | Andy Bird | 15T Tracked Excavator | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

| Depth (m) | Remarks |
|---|---|
| 0.70 | Seepage |

Backfill Details

| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 3.00 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'



TP309: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP309: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP309: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**




TP309: Spoil

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI

# DYNAMIC CONE PENETRATION TEST

Test Location:

**TP309**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | | Hole type: | DCP |
| | | Co-ordinates: | 384723.42 | mE | | Checked by: | APB |
| Project No: | 326R | | 399769.78 | mN | | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 42.88 | mOD | | | |
| Engineer: | APB | | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 80 | | 0 | 0 |
| 1 | 1 | 342 | | 262 | 262 |
| 1 | 2 | 510 | | 168 | 430 |
| 1 | 3 | 545 | | 35 | 465 |
| 1 | 4 | 575 | | 30 | 495 |
| 1 | 5 | 635 | | 60 | 555 |
| 1 | 6 | 675 | | 40 | 595 |
| 1 | 7 | 700 | | 25 | 620 |
| 1 | 8 | 715 | | 15 | 635 |
| 1 | 9 | 738 | | 23 | 658 |
| 1 | 10 | 750 | | 12 | 670 |
| 1 | 11 | 770 | | 20 | 690 |
| 2 | 13 | 785 | | 15 | 705 |
| 5 | 18 | 800 | | 15 | 720 |
| 10 | 28 | 830 | | 30 | 750 |
| 10 | 38 | 831 | | 1 | 751 |
| 10 | 48 | 832 | | 1 | 752 |

Comments:

TRL carried out at north end of pit. DCP TRL test terminated at 752mm.

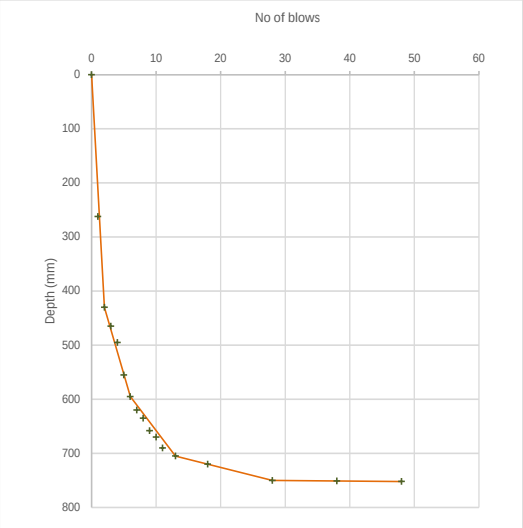
# DYNAMIC CONE PENETRATION TEST

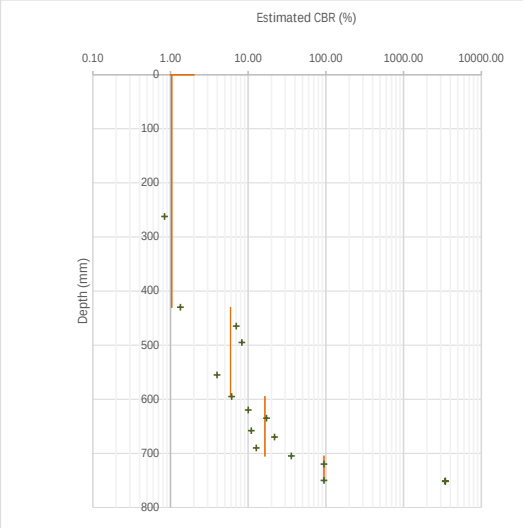
Test Location: **TP309**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384723.42 | mE | Checked by: | APB |
| Project No: | 326R | | 399769.78 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 42.88 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| | | | | | |
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| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 430 | 1 |
| 2 | 430 | 595 | 5.9 |
| 3 | 595 | 705 | 16 |
| 4 | 705 | 750 | 95 |
| 5 | 750 | 752 | 3400 |
| | | | |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out at north end of pit. DCP TRL test terminated at 752mm.

# TRIAL PIT LOG

Trial Pit No.
TP310
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | TP |
| Project No: | 326R | Co-ordinates: | 384769.94 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399712.21 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 42.77 mOD | Scale: | 1:33 |
| Date Started: | 22/03/2022 | Orientation of Logged Face: | 105 deg. | Status: | FINAL |
| Date Completed: | 22/03/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 3.00m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND; Dark grey brown sandy SILT with rootlet content and low root content (<10mm). [MADE GROUND] | | 0.20 | 42.57 | | | | | | | |
| MADE GROUND: Brown gravelly sandy CLAY with medium to high cobble content. Gravel is angular and sub angular fine to coarse of quartzite, sandstone, brick and concrete. Cobbles are angular of half to whole bricks, concrete paving slabs (<300x400mm). Rare fragments of terram, plastic and steel wire. [MADE GROUND] | | | | 0.30<br>0.30<br>0.50<br>0.50<br>1.00<br>1.00<br>1.00<br>2.00<br>2.00<br>2.00 | ES<br><br>ES<br><br>B<br>ES<br><br>B<br>ES<br><br>B | <br>PID<br><br>PID<br><br><br>PID<br><br><br>PID | <br>0.00<br><br>0.00<br><br><br>0.00<br><br><br>0.00 | <br>ppm<br><br>ppm<br><br><br>ppm<br><br><br>ppm | | |
| | | [2.30] | | | | | | | | |
| MADE-GROUND: Dark grey brown mottled slightly organic very silty CLAY/ Clayey SILT. [ALLUVIUM (Possible)] | | 2.50 | 40.27 | 2.60 | B | | | | | |
| Brown gravelly CLAY. Gravel is sub angular fine to coarse of sandstone and quartzite (insufficient lumps to carry out hand vane tests), [GLACIAL TLL] | | 2.70<br>[0.30] | 40.07 | | | | | | ▼ | |
| Trial Pit Terminated at 3.00m | | 3.00 | 39.77 | 3.00<br>3.00<br>3.00 | B<br>ES<br> | <br><br>PID | <br><br>0.00 | <br><br>ppm | | |

Reason for Hole Termination: Reached required depth

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 3.00 | 4.50 | 0.70 | Stable | N/A | Andy Bird | 15T Tracked Excavator | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Water Strikes

| Depth (m) | Remarks |
|---|---|
| 2.90 | Seepage |

Backfill Details

| Depth Top | Depth Base | Description |
|---|---|---|
| 0.00 | 3.00 | Arisings |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'



TP310: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI

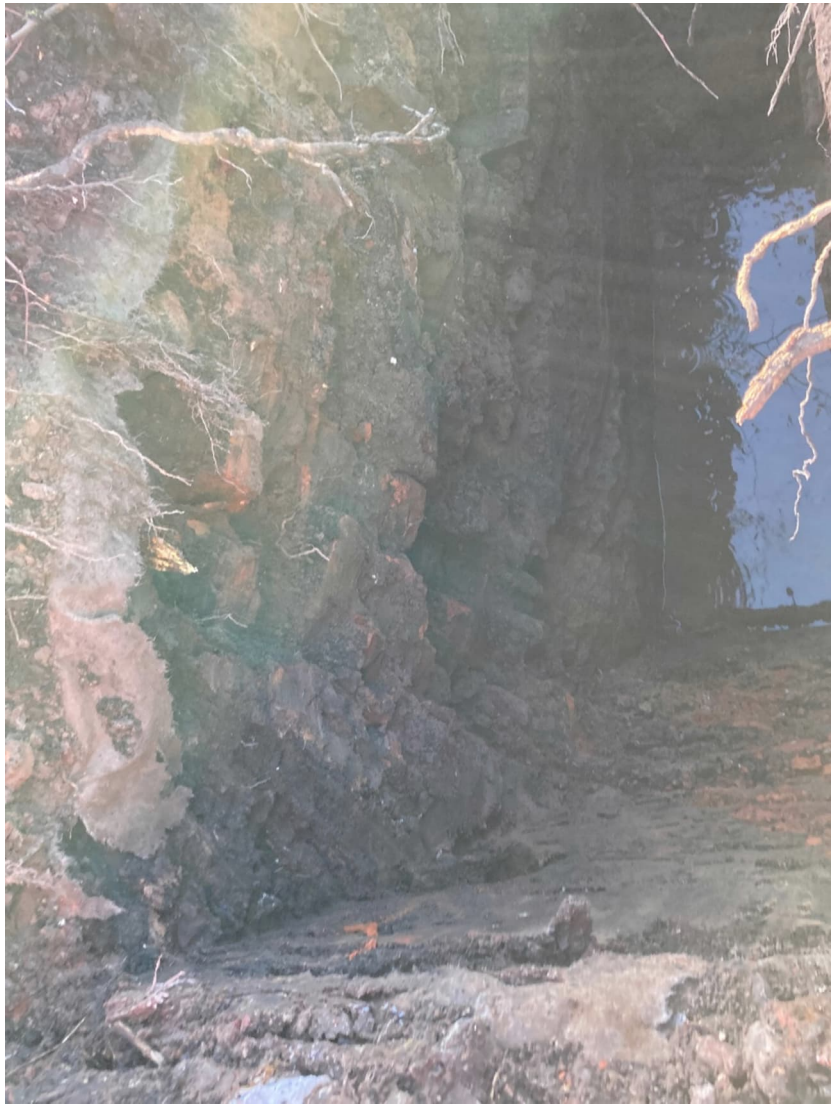


TP310: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP310: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI



TP310: 0.00 – 3.00m

bam ritchies

# Trial Pit Photographs

**Contract No:** 326R
**Contract:** Victoria North HiF Infrastructure & Enabling Works GI




TP310: Spoil

bam ritchies

# Trial Pit Photographs

**Contract No:** **326R**
**Contract:** **Victoria North HiF Infrastructure & Enabling Works GI**

# DYNAMIC CONE PENETRATION TEST

Test Location: **TP310**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384769.94 | mE | Checked by: | APB |
| Project No: | 326R | | 399712.21 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 42.77 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| 0 | 0 | 111 | | 0 | 0 |
| 1 | 1 | 130 | | 19 | 19 |
| 1 | 2 | 140 | | 10 | 29 |
| 1 | 3 | 160 | | 20 | 49 |
| 1 | 4 | 170 | | 10 | 59 |
| 1 | 5 | 180 | | 10 | 69 |
| 1 | 6 | 190 | | 10 | 79 |
| 1 | 7 | 200 | | 10 | 89 |
| 1 | 8 | 210 | | 10 | 99 |
| 1 | 9 | 220 | | 10 | 109 |
| 1 | 10 | 230 | | 10 | 119 |
| 1 | 11 | 240 | | 10 | 129 |
| 1 | 12 | 252 | | 12 | 141 |
| 1 | 13 | 270 | | 18 | 159 |
| 1 | 14 | 280 | | 10 | 169 |
| 1 | 15 | 290 | | 10 | 179 |
| 1 | 16 | 300 | | 10 | 189 |
| 1 | 17 | 310 | | 10 | 199 |
| 1 | 18 | 320 | | 10 | 209 |
| 1 | 19 | 330 | | 10 | 219 |
| 1 | 20 | 340 | | 10 | 229 |
| 1 | 21 | 350 | | 10 | 239 |
| 1 | 22 | 370 | | 20 | 259 |
| 1 | 23 | 380 | | 10 | 269 |
| 1 | 24 | 410 | | 30 | 299 |
| 1 | 25 | 420 | | 10 | 309 |
| 1 | 26 | 440 | | 20 | 329 |
| 1 | 27 | 450 | | 10 | 339 |
| 1 | 28 | 460 | | 10 | 349 |
| 1 | 29 | 470 | | 10 | 359 |
| 1 | 30 | 480 | | 10 | 369 |
| 1 | 31 | 500 | | 20 | 389 |
| 1 | 32 | 510 | | 10 | 399 |
| 1 | 33 | 520 | | 10 | 409 |
| 1 | 34 | 530 | | 10 | 419 |
| 1 | 35 | 550 | | 20 | 439 |
| 1 | 36 | 570 | | 20 | 459 |
| 1 | 37 | 590 | | 20 | 479 |
| 1 | 38 | 600 | | 10 | 489 |
| 1 | 39 | 620 | | 20 | 509 |
| 1 | 40 | 640 | | 20 | 529 |
| 1 | 41 | 660 | | 20 | 549 |
| 1 | 42 | 670 | | 10 | 559 |
| 3 | 45 | 679 | | 9 | 568 |
| 5 | 50 | 680 | | 1 | 569 |
| 10 | 60 | 681 | | 1 | 570 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Comments:

TRL carried out at north end of pit. DCP TRL test terminated at 570mm.

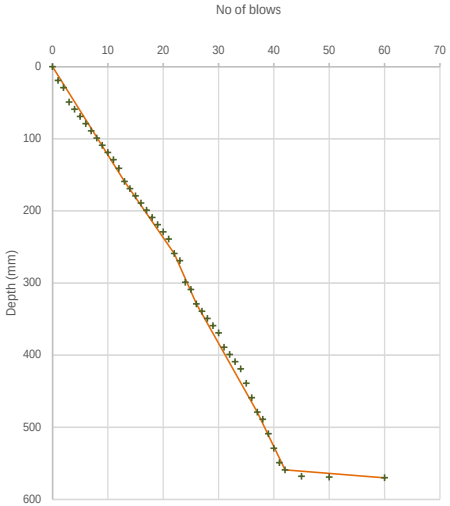
# DYNAMIC CONE PENETRATION TEST

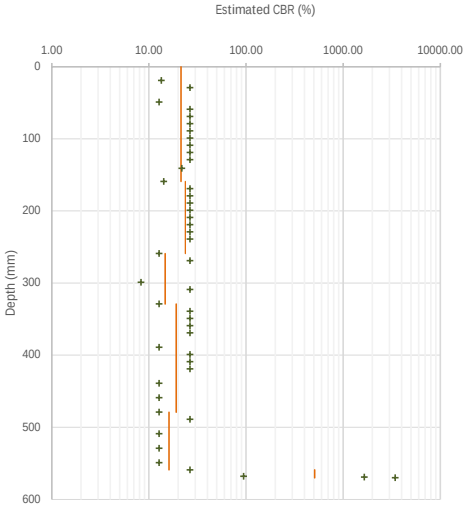
Test Location: **TP310**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Project Name: | Victoria North HiF GI | Survey grid system: | OSGB | | Hole type: | DCP |
| | | Co-ordinates: | 384769.94 | mE | Checked by: | APB |
| Project No: | 326R | | 399712.21 | mN | Approved by: | JH |
| Client: | BAM Nuttall | Ground level: | 42.77 | mOD | | |
| Engineer: | APB | | | | Weather: | Dry, Cloudy |
| Date of test: | 14/03/2022 | Start Depth: | 0 | mm | Equipment: | CNS Farnell DCP Model A2465 |
| Test number: | 1 | Inclination: | 90 | deg. | | |

| Number of blows | Total blows | Reading (mm) | Rod Change Reading (mm) | Penetration Increment (mm) | Depth (mm) |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |




| Test No. | Depth from (mm) | Depth to (mm) | CBR value |
|---|---|---|---|
| 1 | 0 | 159 | 21 |
| 2 | 159 | 259 | 24 |
| 3 | 259 | 329 | 15 |
| 4 | 329 | 479 | 19 |
| 5 | 479 | 559 | 16 |
| 6 | 559 | 570 | 510 |
| | | | |
| | | | |

**Estimated CBR value calculated using TRL equation:**

$$\log_{10}(CBR) = 2.48 - 1.057 \cdot \log_{10}(mm/blow)$$

**References:**

CNS Farnell (2003) Dynamic Cone Penetrometer Model A2465 Operating Instructions.

Transport and Road Research Laboratory (1990) Overseas Road Note 8. A users manual for a program to analyse dynamic cone penetrometer data.

Transport and Road Research Laboratory (2004) TRL Project Report PR/INT/277/04.

Comments:

TRL carried out at north end of pit. DCP TRL test terminated at 570mm.

# TRIAL PIT LOG

Trial Pit No.
OP01
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | OP |
| Project No: | 326R | Co-ordinates: | 384416.31 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399512.95 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 39.57 mOD | Scale: | 1:25 |
| Date Started: | 07/03/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 07/03/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 0.15m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey black gravelly silty fine to coarse SAND (predominantly of ash) with rare fragments of plastic, steel, clothing, timber and paper. Low cobble content of brick and concrete. Gravel is sub angular fine to coarse of clinker, brick, basalt an, concrete and granite. Low root content. [MADE GROUND ] | | 0.15 | 39.42 | 0.10 - 0.15<br>0.10 - 0.20 | LB<br>ES | | | | | |
| Trial Pit Terminated at 0.15m | | | | | | | | | | |

Reason for Hole Termination: Reached required depth

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.15 | 3.00 | 0.50 | Stable | NA | Andy Bird | 3T Tracked excavator | |

| Depth Related Remarks | | | Water Strikes | | Backfill Details | | |
|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Remarks | Depth (m) | Remarks | Depth Top | Depth Base | Description |
| | | | | | | | |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

# TRIAL PIT LOG

Trial Pit No.
OP02
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | OP |
| Project No: | 326R | Co-ordinates: | 384435.53 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399531.37 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 39.97 mOD | Scale: | 1:25 |
| Date Started: | 07/03/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 07/03/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 0.40m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey brown gravelly silty fine to coarse SAND with low cobble content and high root content. Gravel is sub angular fine to coarse of basalt, granite and brick. Cobbles are sub angular of brick. [MADE GROUND ] | | [0.40] | | 0.10 - 0.40<br>0.10 - 0.50 | ES<br>LB | | | | | |
| Trial Pit Terminated at 0.40m | | 0.40 | 39.57 | | | | | | | |

Reason for Hole Termination: Reached required depth

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.40 | 3.00 | 0.60 | Stable | NA | Andy Bird | 3T tracked excavator | |

| Depth Related Remarks | | | Water Strikes | | Backfill Details | | |
|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Remarks | Depth (m) | Remarks | Depth Top | Depth Base | Description |
| | | | | | | | |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

# TRIAL PIT LOG

Trial Pit No.
OP03
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | OP |
| Project No: | 326R | Co-ordinates: | 384454.60 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399552.16 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 40.06 mOD | Scale: | 1:25 |
| Date Started: | 07/03/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 07/03/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 0.20m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey brown gravelly silty fine to coarse SAND with high root content and low cobble content. Gravel is sub angular fine to coarse of brick, basalt, granite and concrete. Cobbles are sub angular of brick. [MADE GROUND ] | | 0.20 | 39.86 | 0.10 - 0.20<br>0.10 - 0.20 | ES<br>LB | | | | | |
| Trial Pit Terminated at 0.20m | | | | | | | | | | |

Reason for Hole Termination: Reached required depth

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.20 | 3.00 | 0.60 | Stable | NA | Andy Bird | 3T tracked excavator | |

| Depth Related Remarks | | | Water Strikes | | Backfill Details | | |
|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Remarks | Depth (m) | Remarks | Depth Top | Depth Base | Description |
| | | | | | | | |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

# TRIAL PIT LOG

Trial Pit No.
OP04
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | OP |
| Project No: | 326R | Co-ordinates: | 384483.99 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399579.98 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 40.19 mOD | Scale: | 1:25 |
| Date Started: | 07/03/2022 | Orientation of Logged Face: | | Status: | FINAL |
| Date Completed: | 07/03/2022 | | | Print Date: | 31/10/2022 |
| | | | | Final Depth: | 0.18m |

| Stratum Description | Legend | Depth [Thick-ness] (m) | Level (m) | Sampling and In Situ Testing | | | | | Water Strikes | Well |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Test | Test Result | Units | | |
| MADE GROUND: Dark grey black gravelly silty fine to coarse SAND with low root and cobble content. Gravel is sub angular fine to coarse of brick, granite and basalt. [MADE GROUND ] | | 0.18 | 40.01 | 0.10 - 0.18<br>0.10 - 0.18 | ES<br>LB | | | | | |
| Trial Pit Terminated at 0.18m | | | | | | | | | | |

Reason for Hole Termination: Reached required depth

Depth Related Exploratory Hole Information

| From (m) | To (m) | Length (m) | Width (m) | Stability | Shoring | Logger | Plant | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.18 | 3.00 | 0.65 | Stable | NA | Andy Bird | 3T tracked excavator | |

| Depth Related Remarks | | | Water Strikes | | Backfill Details | | |
|---|---|---|---|---|---|---|---|
| From (m) | To (m) | Remarks | Depth (m) | Remarks | Depth Top | Depth Base | Description |
| | | | | | | | |

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

# BOREHOLE LOG

Borehole No: HC-HIGH-CH:60
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | STC |
| Project No: | 326R | Co-ordinates: | 384430.58 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399553.00 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.94 mOD | Scale: | 1:50 |
| Date Started: | 16/05/2022 | | | Log Status: | FINAL |
| Date Completed: | 16/05/2022 | Orientation: | deg. | Print Date: | 31/10/2022 |
| | | Inclination: | deg. | Final Depth: | 1.50m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| MADE GROUND: Weak to medium strong red BRICK (225x75x75). With light brown and dark grey weak to medium strong poorly and well bonded MORTAR (<55mm). [BRICK] | | (1.30) | | 0.00 - 0.45 | RC | 100 | | | | | | | | | |
| | | | | 0.45 - 0.90 | RC | 100 | | | | | | 95<br>55<br>- | | | |
| | | | | 0.90 - 1.50 | RC | 100 | | | | | | 100<br>23<br>- | | | |
| | | 1.30 | 41.94 | 1.40 | ES | | | | | | | | | | |
| MADE GROUND: Stiff brown slightly gravelly CLAY. Gravel is fine to medium angular to subrounded of sandstone brick and mudstone. [MADE GROUND] | | 1.50 | 41.94 | | | | | | | | | | | | |
| Borehole Terminated at 1.50m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
HC-HIGH-CH:60
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | STC |
| | | Co-ordinates: | 384430.58 mE | Checked By: | APB |
| Project No: | 326R | | 399553.00 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 41.94 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 16/05/2022 | Orientation: | deg. | | |
| Date Completed: | 16/05/2022 | Inclination: | deg. | Final Depth: | 1.50m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.50 | | | | | | | | Samuel Askew | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 0.00 | 0.45 | 0 | Water | |
| 0.45 | 0.90 | 0 | Water | |
| 0.90 | 1.50 | 0 | Water | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Terminated in assumed fill material.

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




HC-HIGH-CH.60: 0.00-1.50m

bam ritchies

# Structural Core Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

bam ritchies

Borehole No: HC-HIGH-CH:75
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | STC |
| Project No: | 326R | Co-ordinates: | 384414.40 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399534.70 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 43.16 mOD | Scale: | 1:50 |
| Date Started: | 17/05/2022 | | | Log Status: | FINAL |
| Date Completed: | 17/05/2022 | Orientation: | deg. | Print Date: | 31/10/2022 |
| | | Inclination: | deg. | Final Depth: | 2.35m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Medium strong red BRICK (225x75x75). With weak to medium strong brown and greyish brown well bonded MORTAR (<34mm). [BRICK] | | (0.30) | | 0.00 - 0.45 | RC | 100 | | | | | | | | | |
| | | 0.30 | 43.16 | | | | | | | | | | | | |
| MADE GROUND: Medium strong to strong light grey and grey CONCRETE (50%-60%) aggregate of limestone and mudstone in a cement matrix (<5% void). [CONCRETE ] | | | | 0.45 - 0.90 | RC | 100 | | | | | | 100<br>100<br>- | | | |
| | | | | 0.90 - 1.35 | RC | 100 | | | | | | 93<br>93<br>- | | | |
| | | (1.85) | | | | | | | | | | | | | |
| | | | | 1.35 - 1.80 | RC | 100 | | | | | | 100<br>95<br>- | | | |
| | | | | 1.80 - 2.35 | RC | 100 | | | | | | 100<br>63<br>- | | | |
| MADE GROUND: Medium strong red BRICK (225x75x75). With weak to medium strong brown and greyish brown poorly bonded MORTAR (<31mm). [BRICK] | | 2.15 | 43.16 | | | | | | | | | | | | |
| | | 2.35 | 43.16 | | | | | | | | | | | | |
| Borehole Terminated at 2.35m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
HC-HIGH-CH:75
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | STC |
| | | Co-ordinates: | 384414.40 mE | Checked By: | APB |
| Project No: | 326R | | 399534.70 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 43.16 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 17/05/2022 | Orientation: | deg. | | |
| Date Completed: | 17/05/2022 | Inclination: | deg. | Final Depth: | 2.35m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 2.35 | | | | | | | | Samuel Askew | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| | | | | | |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| | | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| | | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| | | | |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 0.00 | 0.45 | 0 | Water | |
| 0.45 | 0.90 | 0 | Water | |
| 0.90 | 1.35 | 0 | Water | |
| 1.35 | 1.80 | 0 | Water | |
| 1.80 | 2.35 | 0 | Water | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| | | | |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | |

Reason for Hole Termination: Terminated in assumed fill material.

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




HC-HIGH-CH.75: 0.00-2.35m

bam ritchies

# Structural Core Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

Borehole No: HC-HIGH-CH:105
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | STC |
| Project No: | 326R | Co-ordinates: | 384430.59 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399553.04 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 43.35 mOD | Scale: | 1:50 |
| Date Started: | 16/05/2022 | | | Log Status: | FINAL |
| Date Completed: | 16/05/2022 | Orientation: | deg. | Print Date: | 31/10/2022 |
| | | Inclination: | deg. | Final Depth: | 2.30m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Medium strong red and blueish grey BRICK (225x75x75). With weak to medium strong brown well bonded MORTAR (<52mm). [BRICK] | | 0.28 | 43.35 | 0.00 - 0.45 | RC | 100 | | | | | | | | | |
| MADE GROUND: Medium strong light grey and brownish grey CONCRETE (50%-60%) aggregate of limestone mudstone and quartz in a cement matrix (<5% void). [CONCRETE ] | | (1.87) | | 0.45 - 0.90 | RC | 100 | | | | | | 100 95 - | | | |
| | | | | 0.90 - 1.35 | RC | 100 | | | | | | 99 93 - | | | |
| | | | | 1.35 - 1.80 | RC | 100 | | | | | | 100 100 - | | | |
| | | | | 1.80 - 2.30 | RC | 100 | | | | | | 100 70 - | | | |
| MADE GROUND: Soft greyish brown gravelly CLAY. Gravel is fine to coarse of brick and sandstone. With rare angular cobble sized fragments of brick. With roots and rootlets throughout (<8mm). [MADE GROUND ] | | 2.15 | 43.35 | 2.20 | ES | | | | | | | | | | |
| Borehole Terminated at 2.30m | | 2.30 | 43.35 | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
HC-HIGH-CH:105
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | STC |
| | | Co-ordinates: | 384430.59 mE | Checked By: | APB |
| Project No: | 326R | | 399553.04 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 43.35 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 16/05/2022 | Orientation: | deg. | | |
| Date Completed: | 16/05/2022 | Inclination: | deg. | Final Depth: | 2.30m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 2.30 | | | | | | | | Samuel Askew | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 0.00 | 0.45 | 0 | Water | |
| 0.45 | 0.90 | 0 | Water | |
| 0.90 | 1.35 | 0 | Water | |
| 1.35 | 1.80 | 0 | Water | |
| 1.80 | 2.30 | 0 | Water | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Terminated in assumed fill material.

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




HC-HIGH-CH.105: 0.00-2.30m

bam ritchies

# Structural Core Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

Borehole No: HC-LOW-CH:60
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | STC |
| Project No: | 326R | Co-ordinates: | 384403.36 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399522.29 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 43.12 mOD | Scale: | 1:50 |
| Date Started: | 18/05/2022 | | | Log Status: | FINAL |
| Date Completed: | 18/05/2022 | Orientation: | deg. | Print Date: | 31/10/2022 |
| | | Inclination: | deg. | Final Depth: | 1.90m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| MADE GROUND: Weak to medium strong red BRICK (225x75x75). With light brown and dark grey weak to medium strong well bonded MORTAR (<61mm). [BRICK] | | (1.80) | | 0.00 - 0.45 | RC | 100 | | | | | | | | | |
| | | | | 0.45 - 0.90 | RC | 100 | | | | | | 97<br>91<br>- | | | |
| | | | | 0.90 - 1.35 | RC | 100 | | | | | | 88<br>71<br>- | | | |
| | | | | 1.35 - 1.90 | RC | 100 | | | | | | 100<br>72<br>- | | | |
| MADE GROUND: Soft to firm brown slightly gravelly CLAY. Gravel is fine to medium angular to subrounded of sandstone brick and mudstone. [MADE GROUND ] | | 1.80<br>1.90 | 43.12<br>43.12 | | | | | | | | | | | | |
| Borehole Terminated at 1.90m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
HC-LOW-CH:60
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | STC |
| | | Co-ordinates: | 384403.36 mE | Checked By: | APB |
| Project No: | 326R | | 399522.29 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 43.12 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 18/05/2022 | Orientation: | deg. | | |
| Date Completed: | 18/05/2022 | Inclination: | deg. | Final Depth: | 1.90m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.90 | | | | | | | | Samuel Askew | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 0.00 | 0.45 | 0 | Water | |
| 0.45 | 0.90 | 0 | Water | |
| 0.90 | 1.35 | 0 | Water | |
| 1.35 | 1.90 | 0 | Water | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Terminated in assumed fill material.

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




HC-LOW-CH.60: 0.00-1.90m

bam ritchies

# Structural Core Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

Borehole No: HC-LOW-CH:75
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | STC |
| Project No: | 326R | Co-ordinates: | 384403.46 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399522.15 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.63 mOD | Scale: | 1:50 |
| Date Started: | 17/05/2022 | | | Log Status: | FINAL |
| Date Completed: | 17/05/2022 | Orientation: | deg. | Print Date: | 31/10/2022 |
| | | Inclination: | deg. | Final Depth: | 2.80m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Medium strong red and blueish grey BRICK (225x75x75). With medium strong brown well bonded MORTAR (<24mm). [BRICK] | | (0.30) | | 0.00 - 0.30 | RC | 100 | | | | | | | | | |
| | | 0.30 | 41.63 | | | | | | | | | 100 | | | |
| MADE GROUND: Medium strong light grey CONCRETE (60%-70%) aggregate of angular to subangular fine to coarse limestone granite and quartz in a cement matrix (<5% void). [MADE GROUND ] | | (0.67) | | 0.30 - 0.75 | RC | 100 | | | | | | 100 - | | | |
| | | 0.97 | 41.63 | 0.75 - 1.20 | RC | 100 | | | | | | 88 | | | |
| MADE GROUND: Grey and pinkish grey angular to subrounded fine to coarse GRAVEL of limestone, granite and quartz. [MADE GROUND ] | | 1.17 | 41.63 | | | | | | | | | 44 - | | | |
| | | | | 1.20 - 1.65 | RC | 100 | | | | | | 100 | | | |
| MADE GROUND: Medium strong light grey CONCRETE (60%-70%) aggregate of angular to subangular fine to coarse limestone granite and quartz in a cement matrix (<5% void). [CONCRETE ] | | (1.33) | | 1.65 - 2.10 | RC | 100 | | | | | | 97 - | | | |
| | | | | | | | | | | | | 99 | | | |
| | | | | 2.10 - 2.55 | RC | 100 | | | | | | 99 - | | | |
| | | | | | | | | | | | | 100 | | | |
| | | 2.50 | 41.63 | | | | | | | | | 88 - | | | |
| MADE GROUND: Medium strong red BRICK. No mortar present. [BRICK] | | 2.69 | 41.63 | 2.55 - 2.80 | RC | 100 | | | | | | 100 | | | |
| MADE GROUND: Yellowish grey and greyish brown clayey angular fine to coarse GRAVEL of sandstone and brick. [MADE GROUND ] | | 2.80 | 41.63 | 2.70 | ES | | | | | | | | | | |
| Borehole Terminated at 2.80m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.

Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'

Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
HC-LOW-CH:75
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | STC |
| | | Co-ordinates: | 384403.46 mE | Checked By: | APB |
| Project No: | 326R | | 399522.15 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 41.63 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 17/05/2022 | Orientation: | deg. | | |
| Date Completed: | 17/05/2022 | Inclination: | deg. | Final Depth: | 2.80m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 2.80 | | | | | | | | Samuel Askew | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 0.00 | 0.30 | 0 | Water | |
| 0.30 | 0.75 | 0 | Water | |
| 0.75 | 1.20 | 0 | Water | |
| 1.20 | 1.65 | 0 | Water | |
| 1.65 | 2.10 | 0 | Water | |
| 2.10 | 2.55 | 0 | Water | |
| 2.55 | 2.80 | 0 | Water | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Terminated in assumed fill material.

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




HC-LOW-CH.75: 0.00-2.80m

bam ritchies

# Structural Core Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

Borehole No: HC-LOW-CH:105
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | STC |
| Project No: | 326R | Co-ordinates: | 384414.41 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399534.58 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 41.69 mOD | Scale: | 1:50 |
| Date Started: | 18/05/2022 | | | Log Status: | FINAL |
| Date Completed: | 18/05/2022 | Orientation: | deg. | Print Date: | 31/10/2022 |
| | | Inclination: | deg. | Final Depth: | 2.45m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| MADE GROUND: Medium strong red and blueish grey BRICK (225x75x75). With weak to medium strong brown well bonded MORTAR (<70mm). [BRICK] | | (0.40) | | 0.00 - 0.30 | RC | | | | | | | | | | |
| | | 0.40 | 41.69 | | | | | | | | | | | | |
| MADE GROUND: Medium strong to strong pinkish grey and light grey CONCRETE (60%-70%) aggregate is angular fine to coarse of mudstone, limestone and quartz in a cement matrix (<5% void). [CONCRETE ] | | | | 0.30 - 0.75 | RC | | | | | | | 77<br>77<br>- | | | |
| | | | | 0.75 - 1.20 | RC | | | | | | | 100<br>93<br>- | | | |
| | | (1.80) | | 1.20 - 1.65 | RC | | | | | | | 88<br>88<br>- | | | |
| | | | | 1.65 - 2.10 | RC | | | | | | | 99<br>99<br>- | | | |
| MADE GROUND: Soft greyish brown and reddish brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse angular of brick, sandstone and mudstone. [MADE GROUND] | | 2.20 | 41.69 | 2.10 - 2.45 | RC | | | | | | | 99 | | | |
| | | 2.45 | 41.69 | 2.40 | ES | | | | | | | | | | |
| Borehole Terminated at 2.45m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
HC-LOW-CH:105
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | STC |
| | | Co-ordinates: | 384414.41 mE | Checked By: | APB |
| Project No: | 326R | | 399534.58 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 41.69 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 18/05/2022 | Orientation: | deg. | | |
| Date Completed: | 18/05/2022 | Inclination: | deg. | Final Depth: | 2.45m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 2.45 | | | | | | | | Samuel Askew | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 0.00 | 0.30 | 0 | Water | |
| 0.30 | 0.75 | 0 | Water | |
| 0.75 | 1.20 | 0 | Water | |
| 1.20 | 1.65 | 0 | Water | |
| 1.65 | 2.10 | 0 | Water | |
| 2.10 | 2.45 | 0 | Water | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Terminated in assumed fill material.

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




HC-LOW-CH.105: 0.00-2.45m

bam ritchies

# Structural Core Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

Borehole No: IC-CH:60
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | STC |
| Project No: | 326R | Co-ordinates: | 384414.46 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399534.52 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 40.60 mOD | Scale: | 1:50 |
| Date Started: | 18/05/2022 | | | Log Status: | FINAL |
| Date Completed: | 18/05/2022 | Orientation: | deg. | Print Date: | 31/10/2022 |
| | | Inclination: | deg. | Final Depth: | 2.70m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Medium strong red and blueish grey BRICK (225x75x75). With weak to medium strong light brown and dark grey well and poorly bonded MORTAR (<56mm).<br>[BRICK] | | (2.50) | | 0.00 - 0.45 | RC | 100 | | | | | | | | | |
| | | | | 0.45 - 0.90 | RC | 100 | | | | | | 100<br>93<br>- | | | |
| | | | | 0.90 - 1.35 | RC | 100 | | | | | | 99<br>79<br>- | | | |
| | | | | 1.35 - 1.80 | RC | 100 | | | | | | 97<br>97<br>- | | | |
| *2.00 - 2.50m : Mortar becomes extremely weak to medium strong.* | | | | 1.80 - 2.25 | RC | 100 | | | | | | 97<br>35<br>- | | | |
| MADE GROUND: Soft to stiff brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular fine to medium of brick sandstone and mudstone.<br>[MADE GROUND ] | | 2.50<br>2.70 | 40.60<br>40.60 | 2.25 - 2.70<br>2.60 | RC<br>ES | 100 | | | | | | 99<br>46<br>- | | | |
| Borehole Terminated at 2.70m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
IC-CH:60
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | STC |
| | | Co-ordinates: | 384414.46 mE | Checked By: | APB |
| Project No: | 326R | | 399534.52 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 40.60 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 18/05/2022 | Orientation: | deg. | | |
| Date Completed: | 18/05/2022 | Inclination: | deg. | Final Depth: | 2.70m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 2.70 | | | | | | | | Samuel Askew | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 0.00 | 0.45 | 0 | Water | |
| 0.45 | 0.90 | 0 | Water | |
| 0.90 | 1.35 | 0 | Water | |
| 1.35 | 1.80 | 0 | Water | |
| 1.80 | 2.25 | 0 | Water | |
| 2.25 | 2.70 | 0 | Water | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Terminated in assumed fill material.

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




IC-CH.60: 0.00-2.70m

bam ritchies

# Structural Core Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

Borehole No: IC-CH:75
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | STC |
| Project No: | 326R | Co-ordinates: | 384403.55 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399522.07 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 40.54 mOD | Scale: | 1:50 |
| Date Started: | 18/05/2022 | | | Log Status: | FINAL |
| Date Completed: | 18/05/2022 | Orientation: | deg. | Print Date: | 31/10/2022 |
| | | Inclination: | deg. | Final Depth: | 1.60m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing | | | | | | | | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | | | | |
| MADE GROUND: Medium strong red and blueish grey BRICK (225x75x75). With weak to medium strong brown and grey well bonded MORTAR (<33mm). [BRICK] | | (0.55) | | 0.00 - 0.45 | RC | 100 | | | | | | | | | |
| | | 0.55 | 40.54 | | | | | | | | | 100 | | | |
| MADE GROUND: Medium strong light grey and grey CONCRETE (60%-70%) aggregate of limestone, mudstone and granite in a cement matrix (<5% void). [CONCRETE] | | (0.65) | | 0.45 - 0.90 | RC | 100 | | | | | | 95 - | | | |
| | | 1.20 | 40.54 | 0.90 - 1.35 | RC | 100 | | | | | | 66 60 - | | | |
| MADE GROUND: Yellowish brown coarse SAND. [MADE GROUND ] | | 1.40 | 40.54 | | | | | | | | | | | | |
| *1.20 - 1.40m : No recovery.* | | | | 1.35 - 1.60 | RC | 100 | | | | | | 80 | | | |
| Medium strong yellowish grey and grey SANDSTONE. [SANDSTONE] | | 1.60 | 40.54 | | | | | | | | | | | | |
| Borehole Terminated at 1.60m | | | | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
IC-CH:75
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | STC |
| | | Co-ordinates: | 384403.55 mE | Checked By: | APB |
| Project No: | 326R | | 399522.07 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 40.54 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 18/05/2022 | Orientation: | deg. | | |
| Date Completed: | 18/05/2022 | Inclination: | deg. | Final Depth: | 1.60m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.60 | | | | | | | | Samuel Askew | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 0.00 | 0.45 | 0 | Water | |
| 0.45 | 0.90 | 0 | Water | |
| 0.90 | 1.35 | 0 | Water | |
| 1.35 | 1.60 | 0 | Water | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Reason for Hole Termination: Terminated In assumed fill material.

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.




IC-CH.75: 0.00-1.60m

bam ritchies

# Structural Core Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI

# BOREHOLE LOG

Borehole No: IC-CH:105
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid System: | OSGB | Hole Type: | STC |
| Project No: | 326R | Co-ordinates: | 384430.61 mE | Checked By: | APB |
| Client: | BAM Nuttall | | 399552.98 mN | Approved By: | JH |
| Engineer: | ARUP | Ground Level: | 40.85 mOD | Scale: | 1:50 |
| Date Started: | 18/05/2022 | | | Log Status: | FINAL |
| Date Completed: | 18/05/2022 | Orientation: | deg. | Print Date: | 31/10/2022 |
| | | Inclination: | deg. | Final Depth: | 1.80m |

| Stratum Description | Legend | Depth (Thick-ness) (m) | Level (m) | Sampling, Coring and In Situ Testing: Depth (m) | Type | Dia (mm) | Rec % | Blows (mins) | Test | Test Result | Units | TCR SCR RQD % | If min If ave If max (mm) | Water | Well/ Backfill |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MADE GROUND: Medium strong red and blueish grey BRICK (225x75x75). With weak to medium strong brown well bonded MORTAR (<28mm). [BRICK] | | (0.45) | | 0.00 - 0.45 | RC | | | | | | | | | | |
| | | 0.45 | 40.85 | | | | | | | | | | | | |
| MADE GROUND: Medium strong to strong pinkish grey and bluish grey CONCRETE (60%-70%) aggregate is angular fine to coarse of mudstone, limestone and quartz in a cement matrix (<5% void). [CONCRETE ] | | (1.19) | | 0.45 - 0.90 | RC | | | | | | | 100<br>100<br>- | | | |
| | | | | 0.90 - 1.35 | RC | | | | | | | 99<br>99<br>- | | | |
| | | | | 1.35 - 1.80 | RC | | | | | | | 82<br>82<br>- | | | |
| WOOD [Wood] | | 1.64 | 40.85 | | | | | | | | | | | | |
| Borehole Terminated at 1.80m | | 1.80 | 40.85 | | | | | | | | | | | | |

Stratum depths measured along borehole axis.
Groundwater levels may be subject to seasonal, tidal and other fluctuations and should not be taken as constant.
Explanation of symbols and abbreviations given in 'Key to Exploratory Holes'
Further details given on appended 'Borehole Information Sheet'.

# BOREHOLE INFORMATION SHEET

Borehole No
IC-CH:105
Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Victoria North HIF Infrastructure & Enabling Works Phase 3 GI | Survey Grid: | OSGB | Hole Type: | STC |
| | | Co-ordinates: | 384430.61 mE | Checked By: | APB |
| Project No: | 326R | | 399552.98 mN | Approved By: | JH |
| Client: | BAM Nuttall | Ground Level: | 40.85 mOD | Log Status: | FINAL |
| Engineer: | ARUP | | | Print Date: | 31/10/2022 |
| Date Started: | 18/05/2022 | Orientation: | deg. | | |
| Date Completed: | 18/05/2022 | Inclination: | deg. | Final Depth: | 1.80m |

Depth Related Exploratory Hole Information

| From (m) | To (m) | Type | Start | End | Plant | Barrel | Drill Bit | Lead Driller | Logger | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 1.80 | | | | | | | | Samuel Askew | |

Boring-Drilling Progress

| Date | Time | Depth (m) | Casing (m) | Depth Water (m) | Remarks |
|---|---|---|---|---|---|
| 16/05/2022 | 09:00 | | | | Start of shift |

Hole Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| | | |

Casing Diameter by Depth

| Depth (m) | Dia. (mm) | Remarks |
|---|---|---|
| | | |

Water Added Records

| From (m) | To (m) | Volume (litres) | Remarks |
|---|---|---|---|
| | | | |

Depth Related Remarks

| From (m) | To (m) | Remarks |
|---|---|---|
| | | |

Chiselling / Hard Boring Details

| From (m) | To (m) | Duration (hh:mm) | Tool |
|---|---|---|---|
| | | | |

Drilling Flush Details

| From (m) | To (m) | Returns (%) | Flush | Colour |
|---|---|---|---|---|
| 0.00 | 0.45 | 0 | Water | |
| 0.45 | 0.90 | 0 | Water | |
| 0.90 | 1.35 | 0 | Water | |
| 1.35 | 1.80 | 0 | Water | |

Water Strikes

| Date | Strike (m) | Casing (m) | Time (mins) | Depth (m) | Sealed (m) | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Monitoring Installation Pipe Work

| Type | Pipe ID | From (m) | To (m) | Dia(mm) | Pipe Type | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | |

Backfill Details

| From (m) | To (m) | Legend | Description |
|---|---|---|---|
| | | | |

Standard Penetration Test Results

| Depth (m) | Type | N Value | Casing (m) | Water (m) | SWPen(mm) | Blows1 | Pen1(mm) | Blows2 | Pen2(mm) | Blows3 | Pen3(mm) | Blows4 | Pen4(mm) | Blows5 | Pen5(mm) | Blows6 | Pen6(mm) | Hammer | E. Ratio% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | |

Reason for Hole Termination: Terminated in timber below foundation level.

Groundwater levels can be subject to seasonal, tidal and other fluctuations and should not be taken as constant.



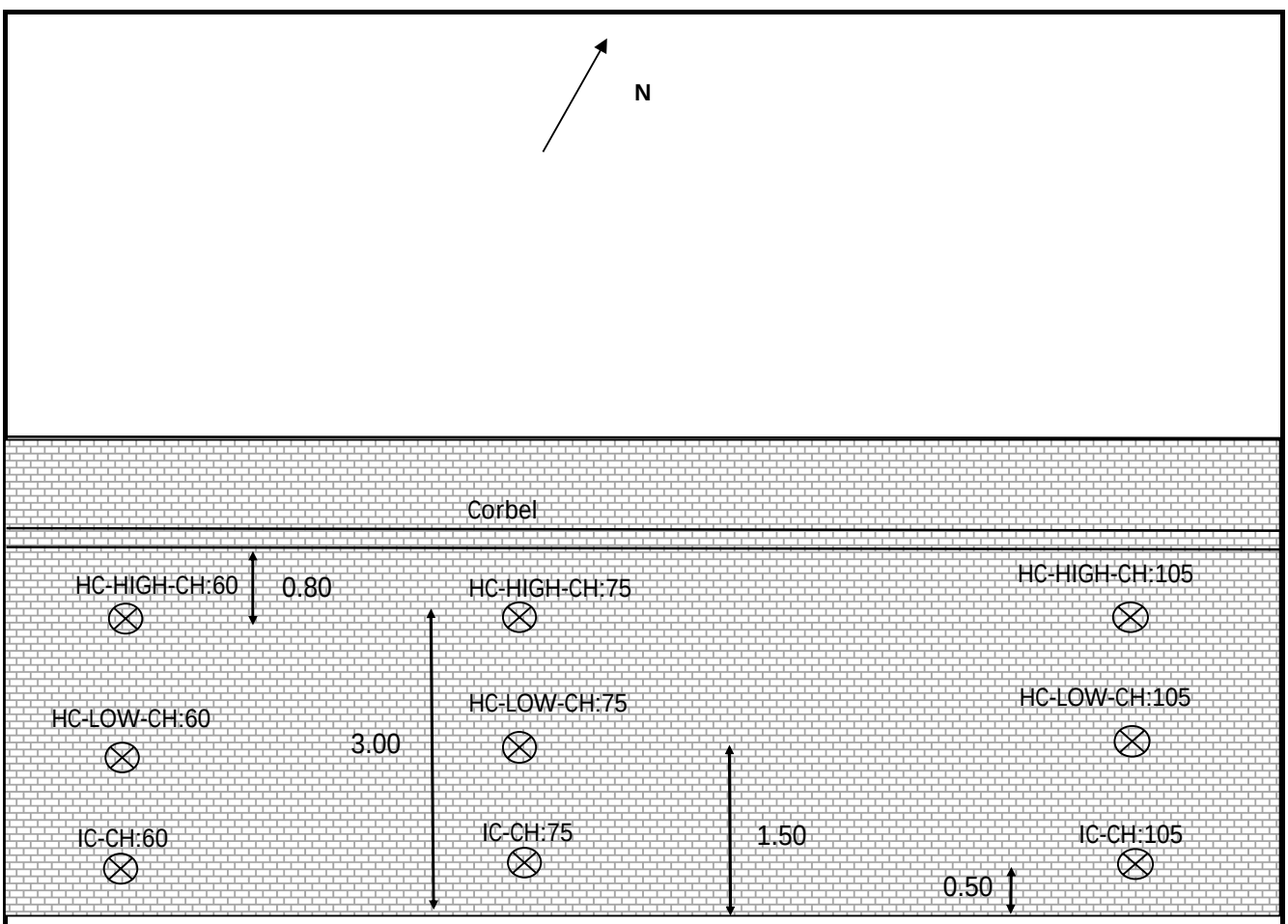

IC-CH.105: 0.00-1.80m

bam ritchies

# Structural Core Photographs

**Contract No:** 326R

**Contract:** Victoria North HiF Infrastructure & Enabling Works Phase 3 GI




Facing View

Notes: Structural measurements in M

Not to scale

Title: **Victoria North HiF Phase 3 GI**

bam ritchies

| | | | | | |
|---|---|---|---|---|---|
| JOB: | Victoria North | | | | |
| Structure: | Creamline Dairies Retaining Wall | Prepared: SA | Drawn: SA | Contract No: 326R | |
| | | Date: 20-May | Date: 20-May | | |
| Chainage: | 60 to 105 | Approved: APB | Contract Title: Victoria North HiF Enabling Works | | |
| | | Date: 07-Jun | Drawing No. | Rev: | |

**Appendix 2**

2 Key to monitoring records
2A Gas & Groundwater monitoring results
2B Inclinometer monitoring results

# KEY TO MONITORING RECORDS

| Instrument Type | Description |
|---|---|
| (abbreviations based on AGS 4.0 : 2011) | |
| ANEM | Anenometer |
| DM | Discontinuity monitoring |
| EPCE | Embedment pressure cell |
| EPCH | Embedment pressure cell |
| EPCP | Embedment pressure cell |
| EPIE | Electronic Piezometer |
| ESET | Electronic settlement cell/gauges |
| ETM | Magnetic Extensometer |
| ETR | Rod Extensometer |
| ETT | Tape Extensometer |
| GMP | Gas monitoring point |
| GWMP | Groundwater monitoring point |
| HPIE | Hydraulic piezometer |
| HSET | Hydraulic settlement cell/gauges |
| ICE | Inclinometer |
| ICM | Inclinometer - Manual |
| IPCE | Interface pressure cell |
| IPCH | Interface pressure cell |
| IPCP | Interface pressure cell |
| LC | Load cell |
| MSET | Levelling point or plate |
| PPCE | Push in pressure cell |
| PPCH | Push in pressure cell |
| PPCP | Push in pressure cell |
| PPIE | Pneumatic Piezometer |
| PSET | Pneumatic settlement cell/gauges |
| RAIN | Rain Gauge |
| RIVER | River Gauging Station |
| SG | Strain gauge |
| SLIP | Slip indicator |
| SP | Standpipe |
| SPIE | Standpipe piezometer |
| TMB | Tiltmeter |
| TMU | Tiltmeter - Uniaxial |
| TP | Temperature measuring point |
| TS | Total station point |

| Monitoring Type | Description |
|---|---|
| (abbreviations based on AGS 4.0 : 2011) | |
| ANGA | Rotation/Tilt in direction A |
| ANGB | Rotation/Tilt in direction B |
| ANGC | Rotation in direction C |
| BAR | Barometric pressure at time of monitoring |
| BRG | Bearing |
| CURR | Current |
| DDEP | Depth to DNAPL |
| DBSE | Depth to base of instument on monitoring round |
| DSPA | Displacement in direction A |
| DSPB | Displacement in direction B |
| DSPC | Displacement in direction C |
| DSTA | Distance A from LOCA_ID (slip indicator top rod) |
| DSTB | Distance B from LOCA_ID (slip indicator top rod) |
| DSTL | Distance |
| EAST | Absolute position (Easting) |
| ERAT | Volume extraction rate |
| FLOW | Flow |
| FORC | Force |
| GAUG | Gauge length |
| GCD | Carbon dioxide concentration |
| GCDP | Peak carbon dioxide concentration |
| GCDS | Steady carbon dioxide concentration |
| GCM | Carbon monoxide concentration |
| GCMP | Peak carbon monoxide concentration |
| GCMS | Steady carbon monoxide concentration |
| GFLO | Gas flow rate |
| GM | Measured methane as percentage of LEL |
| GMP | Peak methane as percentage of LEL |
| GMS | Steady methane as percentage of LEL |
| GOX | Oxygen concentration |
| GOXP | Steady oxygen concentration |
| GOXS | Peak oxygen concentration |
| GPRS | Differential Pressure |
| HYS | Hydrogen sulphide concentration |
| HYSP | Peak hydrogen sulphide concentration |
| HYSS | Steady hydrogen sulphide concentration |
| LDEP | Depth to LNAPL |
| LEV | Absolute position (Level) |
| NRTH | Absolute position (Northing) |
| PRES | Pressuremeter test hole |
| RAIN | Rainfall |
| RFLOW | River flowrate measurement |
| RLEVEL | River level measurement |
| ROTS | Rotational speed |
| STAT | Status |
| STRA | Strain in direction A |
| STRB | Strain in direction C |
| STRC | Strain in direction A |
| TEMP | Atmospheric temperature |
| TGM | Total methane concentration |
| TGMP | Peak total methane concentration |
| TGMS | Steady total methane concentration |
| TORQ | Torque |
| TRST | Thrust |
| UPT | Up/run time |
| VEL | Velocity |
| VOL | Volume |
| VOLT | Voltage |
| WDEP | Depth to water from LOCA_ID datum |
| WHD | Head of water above tip |
| LNAPL | Light Nonaqueous Phase Liquid |
| DNAPL | Dense Nonaqueous Phase Liquid |

References

AGS: 2011 Electronic Transfer of Geotechnical and Geoenvironmental Data AGS4 INCL GD15

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Victoria North HIF Infrastructure & Enablin
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH303 | 1 | 11.00 | 26/04/2022 10:05 | 1 | 1010 | Battery operated dipr | 6423 | | 8.20 | | 11.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH302 | 1 | 14.00 | 26/04/2022 10:10 | 1 | 1010 | Battery operated dipr | 6423 | | 6.06 | | 14.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH301 | 1 | 15.00 | 26/04/2022 10:15 | 1 | 1010 | Battery operated dipr | 6423 | | 11.66 | | 15.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH315 | 1 | 12.50 | 26/04/2022 10:20 | 1 | 1010 | Battery operated dipr | 6423 | | 9.75 | | 12.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH320 | 1 | 4.20 | 26/04/2022 10:25 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 4.20 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH310 | 1 | 16.00 | 26/04/2022 10:30 | 1 | 1010 | Battery operated dipr | 6423 | | 4.20 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH321 | 1 | 4.50 | 26/04/2022 10:35 | 1 | 1010 | Battery operated dipr | 6423 | | 4.29 | | 4.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH322 | 1 | 5.80 | 26/04/2022 10:40 | 1 | 1010 | Battery operated dipr | 6423 | | 3.58 | | 5.80 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH323 | 1 | 1.70 | 26/04/2022 10:45 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 1.70 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH304 | 1 | 10.00 | 26/04/2022 10:50 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH305 | 1 | 10.00 | 26/04/2022 10:55 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH314 | 1 | 12.00 | 26/04/2022 11:00 | 1 | 1010 | Battery operated dipr | 6423 | | 10.03 | | 12.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH313 | 1 | 8.00 | 26/04/2022 11:05 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH309 | 1 | 11.50 | 26/04/2022 11:10 | 1 | 1010 | Battery operated dipr | 6423 | | 2.69 | | 11.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH325 | 1 | 3.50 | 26/04/2022 11:20 | 1 | 1010 | Battery operated dipr | 6423 | | 3.22 | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH307 | 1 | 2.50 | 26/04/2022 11:25 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 2.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH306 | 1 | 5.60 | 26/04/2022 11:30 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 5.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH312 | 1 | 4.00 | 26/04/2022 11:35 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |
| BH311 | 1 | 16.00 | 26/04/2022 11:40 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Fieldworks | Water Only |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Victoria North HIF Infrastructure & Enablin
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | Reading Type |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| 01_BH101 | 1 | 5.00 | 29/04/2022 12:15 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 11.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| 01_BH102 | 1 | 6.50 | 29/04/2022 12:20 | 1 | 1010 | Battery operated dipr | 6423 | | 3.00 | | 14.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| 01_BH103 | 1 | 3.50 | 29/04/2022 12:25 | 1 | 1010 | Battery operated dipr | 6423 | | 1.10 | | 15.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| 01_BH104 | 1 | 9.00 | 29/04/2022 12:30 | 1 | 1010 | Battery operated dipr | 6423 | | NA | | 12.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Unable to access due skip over hole | Water Only |
| 01_BH105 | 1 | 9.50 | 29/04/2022 12:35 | 1 | 1010 | Battery operated dipr | 6423 | | 3.67 | | 4.20 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| 01_BH112 | 1 | 4.00 | 29/04/2022 12:40 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Victoria North HIF Infrastructure & Enabling
Client: BAM Ritchies
Engineer: IP/ APB

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| 01_BH101 | 1 | 5.00 | 11/05/2022 09:00 | 1 | | 50m Dip Meter | 6423 | | DRY | | 5.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| 01_BH106 | 1 | 10.00 | 11/05/2022 09:15 | 1 | | 50m Dip Meter | 6423 | | N/A | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks/ No access, unable to | Water Only |
| BH303 | 1 | 11.00 | 11/05/2022 10:30 | 1 | | 50m Dip Meter | 6423 | | DRY | | 11.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH304 | 1 | 10.00 | 11/05/2022 11:00 | 1 | | 50m Dip Meter | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH305 | 1 | 10.00 | 11/05/2022 11:30 | 1 | | 50m Dip Meter | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH306 | 1 | 5.60 | 11/05/2022 14:30 | 1 | | 50m Dip Meter | 6423 | | 3.90 | | 5.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH307 | 1 | 2.50 | 11/05/2022 15:00 | 1 | | 50m Dip Meter | 6423 | | DRY | | 2.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH309 | 1 | 11.50 | 11/05/2022 13:15 | 1 | | 50m Dip Meter | 6423 | | 2.85 | | 11.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH310 | 1 | 16.00 | 11/05/2022 14:15 | 1 | | 50m Dip Meter | 6423 | | 4.15 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH311 | 1 | 16.00 | 11/05/2022 09:30 | 1 | | 50m Dip Meter | 6423 | | 8.50 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH312 | 1 | 4.00 | 11/05/2022 10:00 | 1 | | 50m Dip Meter | 6423 | | 3.85 | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH313 | 1 | 8.00 | 11/05/2022 12:00 | 1 | | 50m Dip Meter | 6423 | | DRY | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH315 | 1 | 12.50 | 11/05/2022 12:30 | 1 | | 50m Dip Meter | 6423 | | 9.80 | | 12.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH320 | 1 | 4.20 | 11/05/2022 13:00 | 1 | | 50m Dip Meter | 6423 | | DRY | | 4.20 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH321 | 1 | 4.50 | 11/05/2022 13:30 | 1 | | 50m Dip Meter | 6423 | | 3.28 | | 4.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH322 | 1 | 5.80 | 11/05/2022 13:45 | 1 | | 50m Dip Meter | 6423 | | 3.50 | | 5.80 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH323 | 1 | 1.70 | 11/05/2022 14:00 | 1 | | 50m Dip Meter | 6423 | | DRY | | 1.70 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH324 | 1 | 14.80 | 11/05/2022 12:00 | 1 | | 50m Dip Meter | 6423 | | 11.78 | | 14.80 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| BH325 | 1 | 3.50 | 11/05/2022 14:45 | 1 | | 50m Dip Meter | 6423 | | DRY | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| GEO_BH201 | 1 | 8.00 | 11/05/2022 09:40 | 1 | | 50m Dip Meter | 6423 | | N/A | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks/ Buried under new ha | Water Only |
| GEO_BH202 | 1 | 9.00 | 11/05/2022 10:00 | 1 | | 50m Dip Meter | 6423 | | 5.00 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| GEO_BH204 | 1 | 10.00 | 11/05/2022 10:15 | 1 | | 50m Dip Meter | 6423 | | 2.75 | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| GEO_BH206 | 1 | 6.00 | 11/05/2022 10:30 | 1 | | 50m Dip Meter | 6423 | | N/A | | 6.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks/ No access, unable to | Water Only |
| GEO_BH207 | 1 | 15.50 | 11/05/2022 10:45 | 1 | | 50m Dip Meter | 6423 | | N/A | | 15.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks/ No access, unable to | Water Only |
| GEO_BH208 | 1 | 13.00 | 11/05/2022 11:00 | 1 | | 50m Dip Meter | 6423 | | 11.90 | | 13.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| GEO_BH210 | 1 | 19.60 | 11/05/2022 13:45 | 1 | | 50m Dip Meter | 6423 | | 8.33 | | 19.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| GEO_BH211A | 1 | 10.50 | 11/05/2022 11:15 | 1 | | 50m Dip Meter | 6423 | | N/A | | 10.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks/ No access, unable to | Water Only |
| GEO_BH212A | 1 | | 11/05/2022 11:30 | 1 | | 50m Dip Meter | 6423 | | N/A | | 0.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | No installation, concreted over | Water Only |
| GEO_BH214A | 1 | 4.00 | 11/05/2022 11:45 | 1 | | 50m Dip Meter | 6423 | | 3.40 | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| GEO_WS201B | 1 | 1.30 | 11/05/2022 12:15 | 1 | | 50m Dip Meter | 6423 | | N/A | | 1.30 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks/ No access, unable to | Water Only |
| GEO_WS207 | 1 | 4.90 | 11/05/2022 12:30 | 1 | | 50m Dip Meter | 6423 | | 0.30 | | 4.90 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| GEO_WS208 | 1 | 4.10 | 11/05/2022 12:45 | 1 | | 50m Dip Meter | 6423 | | 1.60 | | 4.10 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks | Water Only |
| GEO_WS209 | 1 | 3.80 | 11/05/2022 13:00 | 1 | | 50m Dip Meter | 6423 | | N/A | | 3.80 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks/ No access, unable to | Water Only |
| GEO_WS210 | 1 | 2.60 | 11/05/2022 13:15 | 1 | | 50m Dip Meter | 6423 | | N/A | | 2.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks/ No access, unable to | Water Only |
| GEO_WS212 | 1 | 3.00 | 11/05/2022 13:30 | 1 | | 50m Dip Meter | 6423 | | N/A | | 3.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, ligh | BAM Ritchies | Post fieldworks/ No access, unable to | Water Only |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 peak | LEL CH4 s/s | CH4 peak | CH4 s/s | CO2 peak | CO2 s/s | O2 peak | O2 s/s | H2S peak | H2S s/s | CO peak | CO s/s | Flow peak | Flow s/s | Diff. Pressure | Serial | PID peak | PID s/s | Weather | Contractor | Remark | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH101 | 1 | 5.00 | 26/05/2022 08:23 | 1 | 1012 | Battery operated dipr | 6423 | | DRY | | 5.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH101 | 1 | 5.00 | 26/05/2022 08:17 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.1 | 0.1 | 21.6 | 21.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:17 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:17 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:18 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:18 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:18 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:18 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:19 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:20 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.2 | 0.2 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:20 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.8 | 6.8 | 10.5 | 10.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:20 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.9 | 6.9 | 8.3 | 8.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:21 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.9 | 6.9 | 8.1 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:21 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.9 | 6.9 | 8.1 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:21 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.9 | 6.9 | 8.1 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:21 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.9 | 6.9 | 8.1 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 26/05/2022 08:22 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.9 | 6.9 | 8.1 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:32 | 1 | 1012 | Battery operated dipr | 6423 | | 4.90 | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH201 | 1 | 8.00 | 26/05/2022 08:26 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 1.1 | 1.1 | 11.8 | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:26 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.6 | 1.6 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 1.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:26 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.7 | 1.7 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 1.6 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:27 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.7 | 1.7 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:27 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.7 | 1.7 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 2.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:27 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.7 | 1.7 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 | 2.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:27 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.7 | 1.7 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 2.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:28 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.7 | 1.7 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | 2.6 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:29 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 1.5 | 1.5 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:29 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.2 | 1.2 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:29 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.2 | 1.2 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:30 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.2 | 1.2 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | -0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:30 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.2 | 1.2 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | -0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:30 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.2 | 1.2 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | -0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:30 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.2 | 1.2 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | -0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 26/05/2022 08:31 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.2 | 1.2 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | -0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 26/05/2022 09:09 | 1 | 1012 | Battery operated dipr | 6423 | | DRY | | 1.30 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| WS201B | 1 | 1.30 | 26/05/2022 09:06 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks/ Unable to monitor he | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 26/05/2022 09:06 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 26/05/2022 09:06 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 26/05/2022 09:07 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 26/05/2022 09:07 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 26/05/2022 09:07 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 26/05/2022 09:07 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 26/05/2022 09:08 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:16 | 1 | 1012 | Battery operated dipr | 6423 | | 5.20 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH202 | 1 | 9.00 | 26/05/2022 09:10 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.1 | 0.1 | 22.0 | 22.0 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:10 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | -0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:10 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.3 | 0.3 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:11 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.3 | 0.3 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:11 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.3 | 0.3 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:11 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.3 | 0.3 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:11 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.3 | 0.3 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:12 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.3 | 0.3 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:13 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.2 | 0.2 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:13 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:13 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:14 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:14 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:14 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:14 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 26/05/2022 09:15 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:46 | 1 | 1012 | Battery operated dipr | 6423 | | 3.15 | | 6.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH206 | 1 | 6.00 | 26/05/2022 09:40 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.1 | 0.1 | 21.6 | 21.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:40 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.4 | 1.4 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:40 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.4 | 1.4 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.4 | 1.4 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.4 | 1.4 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.4 | 1.4 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.4 | 1.4 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:42 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.4 | 1.4 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:43 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 1.3 | 1.3 | 18.7 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:43 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.5 | 6.5 | 10.4 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:43 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.5 | 6.5 | 9.3 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:44 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.5 | 6.5 | 9.1 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:44 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.6 | 6.6 | 9.1 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:44 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.6 | 6.6 | 9.1 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:44 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.6 | 6.6 | 9.1 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 26/05/2022 09:45 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.6 | 6.6 | 9.1 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH103 | 1 | 3.50 | 26/05/2022 09:49 | 1 | 1012 | Battery operated dipr | 6423 | | 1.83 | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH304 | 1 | 10.00 | 26/05/2022 10:29 | 1 | 1012 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH304 | 1 | 10.00 | 26/05/2022 10:23 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 6.1 | 6.1 | 16.1 | 16.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:23 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.6 | 6.6 | 12.0 | 12.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:23 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.7 | 6.7 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 peak | LEL CH4 s/s | CH4 peak | CH4 s/s | CO2 peak | CO2 s/s | O2 peak | O2 s/s | H2S peak | H2S s/s | CO peak | CO s/s | Flow peak | Flow s/s | Diff. Pressure | Serial | PID peak | PID s/s | Weather | Contractor | Remark | Reading Type |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH304 | 1 | 10.00 | 26/05/2022 10:24 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.8 | 6.8 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:24 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.8 | 6.8 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:24 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.8 | 6.8 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:24 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.8 | 6.8 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:25 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.8 | 6.8 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:26 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 5.3 | 5.3 | 12.8 | 12.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:26 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.1 | 5.1 | 13.5 | 13.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:26 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 4.2 | 4.2 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:27 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 4.3 | 4.3 | 14.0 | 14.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:27 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 4.0 | 4.0 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:27 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 4.5 | 4.5 | 14.3 | 14.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:27 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 4.5 | 4.5 | 14.3 | 14.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 26/05/2022 10:28 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 4.5 | 4.5 | 14.3 | 14.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:38 | 1 | 1012 | Battery operated dipr | 6423 | | 12.70 | | 15.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH207 | 1 | 15.50 | 26/05/2022 10:32 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.1 | 0.1 | 16.4 | 16.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:32 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.3 | 21.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:32 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:33 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:33 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:33 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:33 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:34 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:35 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:35 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:35 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:36 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:36 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:36 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:36 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 26/05/2022 10:37 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.1 | 0.1 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 26/05/2022 10:44 | 1 | 1012 | Battery operated dipr | 6423 | | 3.00 | | 6.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH102 | 1 | 6.50 | 26/05/2022 10:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.5 | 0.5 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks/ Unable to monitor he | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 26/05/2022 10:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.5 | 0.5 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 26/05/2022 10:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.5 | 0.5 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.6 | -0.6 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 26/05/2022 10:42 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.5 | 0.5 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 26/05/2022 10:42 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.5 | 0.5 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 26/05/2022 10:42 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.5 | 0.5 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 26/05/2022 10:42 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.5 | 0.5 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 26/05/2022 10:43 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.5 | 0.5 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 26/05/2022 11:21 | 1 | 1012 | Battery operated dipr | 6423 | | 6.00 | | 10.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH205 | 1 | 10.50 | 26/05/2022 11:18 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 2.1 | 2.1 | 14.0 | 14.0 | 0.0 | 0.0 | 1.0 | 1.0 | -8.9 | -8.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks/ Unable to monitor he | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 26/05/2022 11:18 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.1 | 2.1 | 8.0 | 8.0 | 0.0 | 0.0 | 0.0 | 0.0 | -8.1 | -8.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 26/05/2022 11:18 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.1 | 2.1 | 7.8 | 7.8 | 0.0 | 0.0 | 0.0 | 0.0 | -7.3 | -7.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 26/05/2022 11:19 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.1 | 2.1 | 7.8 | 7.8 | 0.0 | 0.0 | 0.0 | 0.0 | -6.4 | -6.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 26/05/2022 11:19 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.1 | 2.1 | 7.8 | 7.8 | 0.0 | 0.0 | 0.0 | 0.0 | -5.9 | -5.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 26/05/2022 11:19 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.1 | 2.1 | 7.8 | 7.8 | 0.0 | 0.0 | 0.0 | 0.0 | -5.3 | -5.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 26/05/2022 11:19 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.1 | 2.1 | 7.8 | 7.8 | 0.0 | 0.0 | 0.0 | 0.0 | -4.7 | -4.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 26/05/2022 11:20 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.1 | 2.1 | 7.8 | 7.8 | 0.0 | 0.0 | 0.0 | 0.0 | -4.5 | -4.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 26/05/2022 11:58 | 1 | 1012 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH204 | 1 | 10.00 | 26/05/2022 11:55 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 8.3 | 8.3 | 17.6 | 17.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks/ Unable to monitor he | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 26/05/2022 11:55 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 8.5 | 8.5 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 26/05/2022 11:55 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 8.5 | 8.5 | 12.4 | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 26/05/2022 11:56 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 8.5 | 8.5 | 12.3 | 12.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 26/05/2022 11:56 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 8.5 | 8.5 | 12.3 | 12.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 26/05/2022 11:56 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 8.5 | 8.5 | 12.3 | 12.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 26/05/2022 11:56 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 8.5 | 8.5 | 12.3 | 12.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 26/05/2022 11:57 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 8.5 | 8.5 | 12.3 | 12.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH203 | 1 | 24.00 | 26/05/2022 12:02 | 1 | 1012 | Battery operated dipr | 6423 | | 12.20 | | 24.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH315 | 1 | 12.50 | 26/05/2022 12:41 | 1 | 1012 | Battery operated dipr | 6423 | | 9.80 | | 12.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH315 | 1 | 12.50 | 26/05/2022 12:35 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:35 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.7 | 1.7 | 16.4 | 16.4 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:35 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.7 | 1.7 | 15.2 | 15.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:36 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.8 | 1.8 | 15.0 | 15.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.5 | 0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:36 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.8 | 1.8 | 15.0 | 15.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.8 | 0.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:36 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.8 | 1.8 | 15.0 | 15.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.2 | 1.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:36 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.8 | 1.8 | 15.0 | 15.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.3 | 1.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:37 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.8 | 1.8 | 15.0 | 15.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.4 | 1.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:38 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.2 | 0.2 | 16.8 | 16.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:38 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 20.7 | 20.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:38 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:39 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:39 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:39 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:39 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 26/05/2022 12:40 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:20 | 1 | 1012 | Battery operated dipr | 6423 | | DRY | | 4.20 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH320 | 1 | 4.20 | 26/05/2022 13:14 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 2.4 | 2.4 | 19.6 | 19.6 | 0.0 | 0.0 | 96.0 | 96.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:14 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.4 | 2.4 | 18.8 | 18.8 | 0.0 | 0.0 | 191.0 | 191.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:14 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.4 | 2.4 | 18.8 | 18.8 | 0.0 | 0.0 | 206.0 | 206.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:15 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.4 | 2.4 | 18.8 | 18.8 | 0.0 | 0.0 | 219.0 | 219.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:15 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.4 | 2.4 | 18.8 | 18.8 | 0.0 | 0.0 | 227.0 | 227.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:15 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.4 | 2.4 | 18.8 | 18.8 | 0.0 | 0.0 | 227.0 | 227.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No.: 326R
Contract Name: Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth (mbgl) | Date Time | Reading Ref | Atm. Pressure (bar) | Method | Serial | LNAPL (mbgl) | Water (mbgl) | DNAPL (mbgl) | Base of install (mbgl) | Method | Serial | Atm. Temp. (degC) | LEL CH4 peak (%LEL) | LEL CH4 s/s (%LEL) | CH4 peak (%vol) | CH4 s/s (%vol) | CO2 peak (%vol) | CO2 s/s (%vol) | O2 peak (%vol) | O2 s/s (%vol) | H2S peak (ppm) | H2S s/s (ppm) | CO peak (ppm) | CO s/s (ppm) | Flow peak (l/hr) | Flow s/s (l/hr) | Diff. Pressure (mbar) | Serial | PID peak (ppmv) | PID s/s (ppmv) | Weather | Contractor | Remark | |
| BH320 | 1 | 4.20 | 26/05/2022 13:15 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.4 | 2.4 | 18.8 | 18.8 | 0.0 | 0.0 | 227.0 | 227.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:16 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.4 | 2.4 | 18.8 | 18.8 | 0.0 | 0.0 | 227.0 | 227.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:17 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.3 | 0.3 | 19.5 | 19.5 | 0.0 | 0.0 | 133.0 | 133.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:17 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 21.1 | 21.1 | 0.0 | 0.0 | 5.0 | 5.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:17 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.3 | 21.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:18 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:18 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:18 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:18 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 26/05/2022 13:19 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.2 | 0.2 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH310 | 1 | 16.00 | 26/05/2022 13:22 | 1 | 1012 | Battery operated dipr | 6423 | | 4.20 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH321 | 1 | 4.50 | 26/05/2022 14:01 | 1 | 1012 | Battery operated dipr | 6423 | | 4.40 | | 4.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks/ Insufficient water to s | Water Only |
| BH321 | 1 | 4.50 | 26/05/2022 13:55 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 8.5 | 8.5 | 14.2 | 14.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:55 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.6 | 8.6 | 9.6 | 9.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:55 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.7 | 8.7 | 9.4 | 9.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:56 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.7 | 8.7 | 9.3 | 9.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:56 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.7 | 8.7 | 9.3 | 9.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:56 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.7 | 8.7 | 9.3 | 9.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:56 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.7 | 8.7 | 9.3 | 9.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:57 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.7 | 8.7 | 9.3 | 9.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:58 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 8.4 | 8.4 | 9.4 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:58 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.4 | 8.4 | 9.3 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:58 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.5 | 8.5 | 9.3 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:59 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.5 | 8.5 | 9.3 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:59 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.5 | 8.5 | 9.3 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:59 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.5 | 8.5 | 9.3 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 13:59 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.5 | 8.5 | 9.3 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 26/05/2022 14:00 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.5 | 8.5 | 9.3 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH322 | 1 | 5.80 | 26/05/2022 14:03 | 1 | 1012 | Battery operated dipr | 6423 | | 3.70 | | 5.80 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks/ Insufficient water to s | Water Only |
| BH323 | 1 | 1.70 | 26/05/2022 14:12 | 1 | 1012 | Battery operated dipr | 6423 | | DRY | | 1.70 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH323 | 1 | 1.70 | 26/05/2022 14:06 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 7.0 | 7.0 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:06 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.0 | 7.0 | 16.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:06 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.1 | 7.1 | 15.1 | 15.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:07 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.2 | 7.2 | 14.9 | 14.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:07 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:07 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:07 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:08 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:09 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 6.8 | 6.8 | 15.1 | 15.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:09 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.9 | 6.9 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:09 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.0 | 7.0 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:10 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.0 | 7.0 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:10 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.0 | 7.0 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:10 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.0 | 7.0 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:10 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.0 | 7.0 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 26/05/2022 14:11 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.0 | 7.0 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH212 | 1 | 9.00 | 26/05/2022 14:14 | 1 | 1012 | Battery operated dipr | 6423 | | NA | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks/ Installation well subr | Water Only |
| BH307 | 1 | 2.50 | 26/05/2022 14:22 | 1 | 1012 | Battery operated dipr | 6423 | | DRY | | 2.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH307 | 1 | 2.50 | 26/05/2022 14:16 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.2 | 0.2 | 21.3 | 21.3 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:16 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 3.3 | 3.3 | 15.5 | 15.5 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:16 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 3.3 | 3.3 | 15.2 | 15.2 | 2.0 | 2.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:17 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.9 | 2.9 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:17 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.0 | 3.0 | 15.6 | 15.6 | 2.0 | 2.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:17 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.3 | 3.3 | 15.0 | 15.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:17 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.3 | 3.3 | 15.0 | 15.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:18 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.3 | 3.3 | 15.0 | 15.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:19 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 2.6 | 2.6 | 16.5 | 16.5 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:19 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 17.3 | 17.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:19 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 17.3 | 17.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:20 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 17.3 | 17.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:20 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 17.3 | 17.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:20 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 17.3 | 17.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:20 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 17.3 | 17.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 26/05/2022 14:21 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 17.3 | 17.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:31 | 1 | 1012 | Battery operated dipr | 6423 | | DRY | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH325 | 1 | 3.50 | 26/05/2022 14:25 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.9 | 0.9 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:25 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:25 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:26 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:26 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:26 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:26 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:27 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:28 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.8 | 0.8 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:28 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:28 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:29 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:29 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:29 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:29 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 26/05/2022 14:30 | 2 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 26/05/2022 14:37 | 1 | 1012 | Battery operated dipr | 6423 | | DRY | | 3.10 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks/ Unable to monitor he | Water Only |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 peak | LEL CH4 s/s | CH4 peak | CH4 s/s | CO2 peak | CO2 s/s | O2 peak | O2 s/s | H2S peak | H2S s/s | CO peak | CO s/s | Flow peak | Flow s/s | Diff. Pressure | Serial | PID peak | PID s/s | Weather | Contractor | Remark | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH213 | 1 | 3.10 | 26/05/2022 14:34 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.6 | 0.6 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 26/05/2022 14:34 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 26/05/2022 14:34 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 26/05/2022 14:35 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 26/05/2022 14:35 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 26/05/2022 14:35 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 26/05/2022 14:35 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 26/05/2022 14:36 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 26/05/2022 14:43 | 1 | 1012 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks/ Unable to monitor he | Water Only |
| BH112 | 1 | 4.00 | 26/05/2022 14:40 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 2.3 | 2.3 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 26/05/2022 14:40 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 26/05/2022 14:40 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 26/05/2022 14:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 26/05/2022 14:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 26/05/2022 14:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 26/05/2022 14:41 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 26/05/2022 14:42 | 1 | 1012 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.3 | 2.3 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:51 | 1 | 1019 | Battery operated dipr | 6423 | | 12.50 | | 17.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH209 | 1 | 17.00 | 27/05/2022 07:45 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.8 | 0.8 | 21.0 | 20.9 | 0.0 | 0.0 | 2.0 | 2.0 | -5.9 | -5.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:45 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.4 | 5.4 | 13.3 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | -5.7 | -5.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:45 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.1 | 7.1 | 8.8 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | -5.4 | -5.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:46 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.3 | 7.3 | 8.6 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | -5.1 | -5.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:46 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.3 | 7.3 | 8.6 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | -4.9 | -4.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:46 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.3 | 7.3 | 8.6 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | -4.7 | -4.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:46 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.3 | 7.3 | 8.6 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | -4.4 | -4.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:47 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.3 | 7.3 | 8.6 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | -4.2 | -4.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:48 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 1.4 | 1.4 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | -8.9 | -8.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:48 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.8 | 1.8 | 16.9 | 16.9 | 0.0 | 0.0 | 0.0 | 0.0 | -8.4 | -8.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:48 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.0 | 2.0 | 16.8 | 16.8 | 0.0 | 0.0 | 0.0 | 0.0 | -7.9 | -7.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:49 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.1 | 2.1 | 16.7 | 16.7 | 0.0 | 0.0 | 0.0 | 0.0 | -7.5 | -7.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:49 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.2 | 2.2 | 16.6 | 16.6 | 0.0 | 0.0 | 0.0 | 0.0 | -7.1 | -7.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:49 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.2 | 2.2 | 16.6 | 16.6 | 0.0 | 0.0 | 0.0 | 0.0 | -6.8 | -6.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:49 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.2 | 2.2 | 16.6 | 16.6 | 0.0 | 0.0 | 0.0 | 0.0 | -6.4 | -6.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 27/05/2022 07:50 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.2 | 2.2 | 16.6 | 16.6 | 0.0 | 0.0 | 0.0 | 0.0 | -6.1 | -6.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:59 | 1 | 1019 | Battery operated dipr | 6423 | | DRY | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH313 | 1 | 8.00 | 27/05/2022 07:53 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 2.7 | 2.7 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:53 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.7 | 2.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:53 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.7 | 2.7 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:54 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.8 | 2.8 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:54 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.8 | 2.8 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:54 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.8 | 2.8 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:54 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.8 | 2.8 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:55 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.8 | 2.8 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:56 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 2.5 | 2.5 | 15.7 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:56 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:56 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.7 | 2.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:57 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.7 | 2.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:57 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.7 | 2.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:57 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.7 | 2.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:57 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.7 | 2.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 27/05/2022 07:58 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.7 | 2.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:08 | 1 | 1019 | Battery operated dipr | 6423 | | 10.20 | | 12.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH314 | 1 | 12.00 | 27/05/2022 08:02 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 568 | 1 | 28.4 | 28.4 | 14.1 | 14.1 | 13.2 | 13.2 | 0.0 | 0.0 | 3.0 | 3.0 | -7.5 | -7.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:02 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 658 | 658 | 32.9 | 32.9 | 17.6 | 17.6 | 6.0 | 6.0 | 0.0 | 0.0 | 3.0 | 3.0 | -6.1 | -6.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:02 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 682 | 682 | 34.1 | 34.1 | 18.5 | 18.5 | 5.3 | 5.3 | 0.0 | 0.0 | 3.0 | 3.0 | -5.5 | -5.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:03 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 686 | 686 | 34.3 | 34.3 | 18.7 | 18.7 | 5.3 | 5.3 | 0.0 | 0.0 | 3.0 | 3.0 | -4.5 | -4.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:03 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 686 | 686 | 34.3 | 34.3 | 18.7 | 18.7 | 5.3 | 5.3 | 0.0 | 0.0 | 3.0 | 3.0 | -3.7 | -3.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:03 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 686 | 686 | 34.3 | 34.3 | 18.7 | 18.7 | 5.3 | 5.3 | 0.0 | 0.0 | 3.0 | 3.0 | -3.4 | -3.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:03 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 686 | 686 | 34.3 | 34.3 | 18.7 | 18.7 | 5.3 | 5.3 | 0.0 | 0.0 | 3.0 | 3.0 | -3.0 | -3.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:04 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 686 | 686 | 34.3 | 34.3 | 18.7 | 18.7 | 5.3 | 5.3 | 0.0 | 0.0 | 3.0 | 3.0 | -2.5 | -2.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:05 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 590 | 1 | 29.5 | 29.5 | 15.2 | 15.2 | 6.8 | 6.8 | 0.0 | 0.0 | 1.0 | 1.0 | -7.0 | -7.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:05 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 500 | 500 | 25.0 | 25.0 | 13.4 | 13.4 | 10.0 | 10.0 | 0.0 | 0.0 | 2.0 | 2.0 | -6.0 | -6.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:05 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 482 | 482 | 24.1 | 24.1 | 13.0 | 13.0 | 10.3 | 10.3 | 0.0 | 0.0 | 2.0 | 2.0 | -5.0 | -5.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:06 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 480 | 480 | 24.0 | 24.0 | 12.9 | 12.9 | 10.3 | 10.3 | 0.0 | 0.0 | 2.0 | 2.0 | -4.4 | -4.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:06 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 480 | 480 | 24.0 | 24.0 | 12.9 | 12.9 | 10.3 | 10.3 | 0.0 | 0.0 | 2.0 | 2.0 | -3.7 | -3.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:06 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 480 | 480 | 24.0 | 24.0 | 12.9 | 12.9 | 10.3 | 10.3 | 0.0 | 0.0 | 2.0 | 2.0 | -3.4 | -3.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:06 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 480 | 480 | 24.0 | 24.0 | 12.9 | 12.9 | 10.3 | 10.3 | 0.0 | 0.0 | 2.0 | 2.0 | -2.4 | -2.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 27/05/2022 08:07 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 480 | 480 | 24.0 | 24.0 | 12.9 | 12.9 | 10.3 | 10.3 | 0.0 | 0.0 | 2.0 | 2.0 | -2.4 | -2.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 27/05/2022 08:41 | 1 | 1019 | Battery operated dipr | 6423 | | DRY | | 19.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH305 | 1 | 10.00 | 27/05/2022 08:50 | 1 | 1019 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH305 | 1 | 10.00 | 27/05/2022 08:44 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.2 | 0.2 | 21.4 | 21.4 | 0.0 | 0.0 | 17.0 | 17.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:44 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:44 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.5 | 18.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:45 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.5 | 18.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:45 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.5 | 18.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:45 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.5 | 18.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:45 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.5 | 18.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:46 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.5 | 18.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:47 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 4.3 | 4.3 | 18.3 | 18.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:47 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.4 | 4.4 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:47 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.4 | 4.4 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:48 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.4 | 4.4 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | Reading Type |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH305 | 1 | 10.00 | 27/05/2022 08:48 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.4 | 4.4 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:48 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.4 | 4.4 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:48 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.4 | 4.4 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 27/05/2022 08:49 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.4 | 4.4 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:59 | 1 | 1019 | Battery operated dipr | 6423 | | DRY | | 13.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH208 | 1 | 13.00 | 27/05/2022 08:53 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 4.7 | 4.7 | 17.8 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:53 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.9 | 6.9 | 14.2 | 14.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:53 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.6 | 7.6 | 13.8 | 13.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:54 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.8 | 7.8 | 13.8 | 13.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:54 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.8 | 7.8 | 13.8 | 13.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:54 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.8 | 7.8 | 13.8 | 13.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:54 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.8 | 7.8 | 13.8 | 13.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:55 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.8 | 7.8 | 13.8 | 13.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:56 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 3.4 | 3.4 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:56 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.4 | 3.4 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:56 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.5 | 3.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:57 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.5 | 3.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:57 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.5 | 3.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:57 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.5 | 3.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 27/05/2022 08:58 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.5 | 3.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH105 | 1 | 9.50 | 27/05/2022 09:03 | 1 | 1019 | Battery operated dipr | 6423 | | 3.80 | | 9.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH306 | 1 | 5.60 | 27/05/2022 09:43 | 1 | 1019 | Battery operated dipr | 6423 | | 4.80 | | 5.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH306 | 1 | 5.60 | 27/05/2022 09:37 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 7.8 | 7.8 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:37 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.9 | 7.9 | 11.5 | 11.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:37 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.9 | 7.9 | 11.0 | 11.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:38 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.9 | 7.9 | 11.1 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:38 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.9 | 7.9 | 11.1 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:38 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.9 | 7.9 | 11.1 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:38 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.9 | 7.9 | 11.1 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:39 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.9 | 7.9 | 11.1 | 11.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:40 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 7.5 | 7.5 | 11.5 | 11.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:40 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.8 | 7.8 | 11.2 | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:40 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.8 | 7.8 | 11.2 | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:41 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.8 | 7.8 | 11.2 | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:41 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.8 | 7.8 | 11.2 | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:41 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.8 | 7.8 | 11.2 | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:41 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.8 | 7.8 | 11.2 | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 27/05/2022 09:42 | 2 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.8 | 7.8 | 11.2 | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311 | 1 | 16.00 | 27/05/2022 10:16 | 1 | 1019 | Battery operated dipr | 6423 | | NA | | 16.00 | | | | | | | | | | | | | | | | | | | | | | | | Post Fieldworks/ Installation well subm | Water Only |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH101 | 1 | 5.00 | 06/06/2022 08:12 | 1 | 1011 | Battery operated dipr | 6423 | | DRY | | 5.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH101 | 1 | 5.00 | 06/06/2022 08:06 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 4.7 | 4.7 | 20.1 | 20.1 | 0.0 | 0.0 | 17.0 | 17.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 06/06/2022 08:06 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.6 | 5.6 | 6.7 | 6.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 06/06/2022 08:06 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 5.7 | 5.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 06/06/2022 08:07 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 5.7 | 5.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 06/06/2022 08:07 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 5.7 | 5.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 06/06/2022 08:07 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 5.7 | 5.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 06/06/2022 08:07 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 5.7 | 5.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 06/06/2022 08:08 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 5.7 | 5.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 2 | 5.00 | 06/06/2022 08:09 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 6.3 | 6.3 | 6.1 | 6.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 2 | 5.00 | 06/06/2022 08:09 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.1 | 7.1 | 5.5 | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 2 | 5.00 | 06/06/2022 08:09 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.4 | 7.4 | 5.3 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 2 | 5.00 | 06/06/2022 08:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.4 | 7.4 | 5.3 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 2 | 5.00 | 06/06/2022 08:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.4 | 7.4 | 5.3 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 2 | 5.00 | 06/06/2022 08:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.4 | 7.4 | 5.3 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 2 | 5.00 | 06/06/2022 08:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.4 | 7.4 | 5.3 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH101 | 2 | 5.00 | 06/06/2022 08:11 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.4 | 7.4 | 5.3 | 5.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 06/06/2022 08:22 | 1 | 1011 | Battery operated dipr | 6423 | | 5.80 | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH201 | 1 | 8.00 | 06/06/2022 08:16 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 2.1 | 2.1 | 10.2 | 10.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 06/06/2022 08:16 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.1 | 2.1 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 06/06/2022 08:16 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.1 | 2.1 | 16.8 | 16.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 06/06/2022 08:17 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.1 | 2.1 | 17.0 | 17.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 06/06/2022 08:17 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.1 | 2.1 | 17.0 | 17.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 06/06/2022 08:17 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.1 | 2.1 | 17.0 | 17.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 06/06/2022 08:17 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.1 | 2.1 | 17.0 | 17.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 06/06/2022 08:18 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.1 | 2.1 | 17.0 | 17.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 2 | 8.00 | 06/06/2022 08:19 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 1.2 | 1.2 | 18.3 | 18.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 2 | 8.00 | 06/06/2022 08:19 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.2 | 1.2 | 19.1 | 19.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 2 | 8.00 | 06/06/2022 08:19 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.1 | 1.1 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 2 | 8.00 | 06/06/2022 08:20 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.1 | 1.1 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 2 | 8.00 | 06/06/2022 08:20 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.1 | 1.1 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH201 | 2 | 8.00 | 06/06/2022 08:21 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.1 | 1.1 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 06/06/2022 09:03 | 1 | 1011 | Battery operated dipr | 6423 | | DRY | | 1.30 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| WS201B | 1 | 1.30 | 06/06/2022 08:57 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 2.0 | 2.0 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 06/06/2022 08:57 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.0 | 2.0 | 20.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 06/06/2022 08:57 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.0 | 2.0 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 06/06/2022 08:58 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.0 | 2.0 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 06/06/2022 08:58 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.0 | 2.0 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 06/06/2022 08:58 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.0 | 2.0 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 06/06/2022 08:59 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 2.0 | 2.0 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 2 | 1.30 | 06/06/2022 09:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 1.1 | 1.1 | 20.7 | 20.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 2 | 1.30 | 06/06/2022 09:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.3 | 1.3 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 2 | 1.30 | 06/06/2022 09:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.5 | 1.5 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 2 | 1.30 | 06/06/2022 09:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.7 | 1.7 | 20.7 | 20.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 2 | 1.30 | 06/06/2022 09:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.7 | 1.7 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 2 | 1.30 | 06/06/2022 09:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.7 | 1.7 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 2 | 1.30 | 06/06/2022 09:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.7 | 1.7 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| WS201B | 2 | 1.30 | 06/06/2022 09:02 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.7 | 1.7 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 06/06/2022 10:06 | 1 | 1011 | Battery operated dipr | 6423 | | 5.29 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH202 | 1 | 9.00 | 06/06/2022 10:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.2 | 0.2 | 21.5 | 21.5 | 0.0 | 0.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 06/06/2022 10:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.6 | 0.6 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 06/06/2022 10:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.6 | 0.6 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 06/06/2022 10:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 06/06/2022 10:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 06/06/2022 10:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 06/06/2022 10:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 06/06/2022 10:02 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 2 | 9.00 | 06/06/2022 10:03 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.5 | 0.5 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 2 | 9.00 | 06/06/2022 10:03 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 2 | 9.00 | 06/06/2022 10:03 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 2 | 9.00 | 06/06/2022 10:04 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.3 | 21.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 2 | 9.00 | 06/06/2022 10:04 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 2 | 9.00 | 06/06/2022 10:04 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 2 | 9.00 | 06/06/2022 10:04 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH202 | 2 | 9.00 | 06/06/2022 10:05 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 06/06/2022 10:31 | 1 | 1011 | Battery operated dipr | 6423 | | | | 6.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Filled to brim water | Water Only |
| BH103 | 1 | 3.50 | 06/06/2022 10:35 | 1 | 1011 | Battery operated dipr | 6423 | | 2.50 | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH304 | 1 | 10.00 | 06/06/2022 12:15 | 1 | 1011 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH304 | 1 | 10.00 | 06/06/2022 12:09 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.2 | 0.2 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 06/06/2022 12:09 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.6 | 5.6 | 17.2 | 17.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 06/06/2022 12:09 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.7 | 5.7 | 15.7 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 06/06/2022 12:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 15.5 | 15.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 06/06/2022 12:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 15.5 | 15.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 06/06/2022 12:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 15.5 | 15.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 06/06/2022 12:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 15.5 | 15.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH304 | 1 | 10.00 | 06/06/2022 12:11 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 5.8 | 5.8 | 15.5 | 15.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH304 | 2 | 10.00 | 06/06/2022 12:12 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 1.5 | 1.5 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 2 | 10.00 | 06/06/2022 12:12 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.8 | 1.8 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 2 | 10.00 | 06/06/2022 12:12 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.0 | 3.0 | 17.6 | 17.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 2 | 10.00 | 06/06/2022 12:13 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.0 | 5.0 | 15.1 | 15.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 2 | 10.00 | 06/06/2022 12:13 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.2 | 5.2 | 14.9 | 14.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 2 | 10.00 | 06/06/2022 12:13 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.2 | 5.2 | 14.9 | 14.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 2 | 10.00 | 06/06/2022 12:13 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.2 | 5.2 | 14.9 | 14.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH304 | 2 | 10.00 | 06/06/2022 12:14 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.2 | 5.2 | 14.9 | 14.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 06/06/2022 11:03 | 1 | 1011 | Battery operated dipr | 6423 | | 12.78 | | 15.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH207 | 1 | 15.50 | 06/06/2022 10:57 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 06/06/2022 10:57 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 06/06/2022 10:57 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 06/06/2022 10:58 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 06/06/2022 10:58 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 06/06/2022 10:58 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 06/06/2022 10:58 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 06/06/2022 10:59 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH207 | 2 | 15.50 | 06/06/2022 11:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 2 | 15.50 | 06/06/2022 11:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 2 | 15.50 | 06/06/2022 11:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 2 | 15.50 | 06/06/2022 11:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 2 | 15.50 | 06/06/2022 11:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 2 | 15.50 | 06/06/2022 11:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH207 | 2 | 15.50 | 06/06/2022 11:02 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 06/06/2022 12:53 | 1 | 1011 | Battery operated dipr | 6423 | | 3.20 | | 6.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH102 | 1 | 6.50 | 06/06/2022 12:47 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.2 | 0.2 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | -0.8 | -0.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 06/06/2022 12:47 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.6 | 21.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.9 | -0.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 06/06/2022 12:47 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.6 | 21.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.8 | -0.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 06/06/2022 12:48 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.6 | 21.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.6 | -0.6 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 06/06/2022 12:48 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.6 | 21.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 06/06/2022 12:48 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.6 | 21.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 06/06/2022 12:48 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.6 | 21.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 06/06/2022 12:49 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.2 | 0.2 | 21.6 | 21.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH102 | 2 | 6.50 | 06/06/2022 12:50 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.2 | 0.2 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 2 | 6.50 | 06/06/2022 12:50 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.7 | 0.7 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 2 | 6.50 | 06/06/2022 12:50 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.7 | 0.7 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 2 | 6.50 | 06/06/2022 12:51 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.7 | 0.7 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 2 | 6.50 | 06/06/2022 12:51 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.7 | 0.7 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 2 | 6.50 | 06/06/2022 12:51 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.7 | 0.7 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH102 | 2 | 6.50 | 06/06/2022 12:52 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.7 | 0.7 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH205 | 2 | 10.50 | 06/06/2022 09:21 | 1 | 1011 | Battery operated dipr | 6423 | | 6.42 | | 10.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH205 | 2 | 10.50 | 06/06/2022 09:18 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.7 | 0.7 | 21.3 | 21.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Gas monitor failing on heavy gas tap; | Gas, PID and Groundwater |
| BH205 | 2 | 10.50 | 06/06/2022 09:18 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.7 | 0.7 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH205 | 2 | 10.50 | 06/06/2022 09:18 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.7 | 0.7 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH205 | 2 | 10.50 | 06/06/2022 09:19 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.7 | 0.7 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH205 | 2 | 10.50 | 06/06/2022 09:19 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 19.8 | 19.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH205 | 2 | 10.50 | 06/06/2022 09:19 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.5 | 0.5 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH205 | 2 | 10.50 | 06/06/2022 09:19 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.4 | 0.4 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH205 | 2 | 10.50 | 06/06/2022 09:20 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.4 | 0.4 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH204 | 2 | 10.00 | 06/06/2022 13:04 | 1 | 1011 | Battery operated dipr | 6423 | | 2.87 | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH204 | 2 | 10.00 | 06/06/2022 13:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.6 | 0.6 | 21.0 | 21.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Gas monitor failing on heavy gas tap; | Gas, PID and Groundwater |
| BH204 | 2 | 10.00 | 06/06/2022 13:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 21.4 | 21.4 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH204 | 2 | 10.00 | 06/06/2022 13:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 21.5 | 21.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH204 | 2 | 10.00 | 06/06/2022 13:02 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 21.5 | 21.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH204 | 2 | 10.00 | 06/06/2022 13:02 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 21.5 | 21.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH204 | 2 | 10.00 | 06/06/2022 13:02 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 21.5 | 21.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH204 | 2 | 10.00 | 06/06/2022 13:03 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 21.5 | 21.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH203 | 1 | 24.00 | 06/06/2022 13:07 | 1 | 1011 | Battery operated dipr | 6423 | | 12.33 | | 24.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH315 | 1 | 12.50 | 06/06/2022 13:16 | 1 | 1011 | Battery operated dipr | 6423 | | 9.80 | | 12.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH315 | 1 | 12.50 | 06/06/2022 13:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 12 | 1 | 0.6 | 0.6 | 2.1 | 2.1 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 06/06/2022 13:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 12 | 12 | 0.6 | 0.6 | 2.5 | 2.5 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 06/06/2022 13:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 12 | 12 | 0.6 | 0.6 | 2.7 | 2.7 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 06/06/2022 13:11 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 12 | 12 | 0.6 | 0.6 | 2.9 | 2.9 | 11.5 | 11.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 06/06/2022 13:11 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 12 | 12 | 0.6 | 0.6 | 2.9 | 2.9 | 11.5 | 11.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 06/06/2022 13:11 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 12 | 12 | 0.6 | 0.6 | 2.9 | 2.9 | 11.5 | 11.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 06/06/2022 13:11 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 12 | 12 | 0.6 | 0.6 | 2.9 | 2.9 | 11.5 | 11.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 06/06/2022 13:12 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 12 | 12 | 0.6 | 0.6 | 2.9 | 2.9 | 11.5 | 11.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH315 | 2 | 12.50 | 06/06/2022 13:13 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 1 | 0.5 | 0.5 | 2.8 | 2.8 | 12.7 | 12.7 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 2 | 12.50 | 06/06/2022 13:13 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 2.0 | 2.0 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | -0.6 | -0.6 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 2 | 12.50 | 06/06/2022 13:13 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 2.1 | 2.1 | 14.3 | 14.3 | 0.0 | 0.0 | 0.0 | 0.0 | -0.8 | -0.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 2 | 12.50 | 06/06/2022 13:14 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 2.3 | 2.3 | 13.0 | 13.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.9 | -0.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 2 | 12.50 | 06/06/2022 13:14 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 2.4 | 2.4 | 13.3 | 13.3 | 0.0 | 0.0 | 0.0 | 0.0 | -1.0 | -1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 2 | 12.50 | 06/06/2022 13:14 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 2.4 | 2.4 | 13.1 | 13.1 | 0.0 | 0.0 | 0.0 | 0.0 | -1.0 | -1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH315 | 2 | 12.50 | 06/06/2022 13:14 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 2.4 | 2.4 | 13.1 | 13.1 | 0.0 | 0.0 | 0.0 | 0.0 | -1.0 | -1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH315 | 2 | 12.50 | 06/06/2022 13:15 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 2.4 | 2.4 | 13.1 | 13.1 | 0.0 | 0.0 | 0.0 | 0.0 | -1.0 | -1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 06/06/2022 13:28 | 1 | 1011 | Battery operated dipr | 6423 | | DRY | | 4.20 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH320 | 1 | 4.20 | 06/06/2022 13:22 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 5.3 | 5.3 | 12.4 | 12.4 | 0.0 | 0.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 06/06/2022 13:22 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.4 | 5.4 | 9.9 | 9.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 06/06/2022 13:22 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.5 | 5.5 | 9.6 | 9.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 06/06/2022 13:23 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.6 | 5.6 | 9.3 | 9.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 06/06/2022 13:23 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.7 | 5.7 | 9.0 | 9.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 06/06/2022 13:23 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.9 | 5.9 | 8.7 | 8.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 06/06/2022 13:23 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.9 | 5.9 | 8.7 | 8.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 06/06/2022 13:24 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.9 | 5.9 | 8.7 | 8.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH320 | 2 | 4.20 | 06/06/2022 13:25 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 1.5 | 1.5 | 13.1 | 13.1 | 0.0 | 0.0 | 4.0 | 4.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 2 | 4.20 | 06/06/2022 13:25 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.3 | 1.3 | 18.6 | 18.6 | 0.0 | 0.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 2 | 4.20 | 06/06/2022 13:25 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.2 | 1.2 | 19.2 | 19.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 2 | 4.20 | 06/06/2022 13:26 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 19.5 | 19.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 2 | 4.20 | 06/06/2022 13:26 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 19.5 | 19.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 2 | 4.20 | 06/06/2022 13:26 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 19.5 | 19.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 2 | 4.20 | 06/06/2022 13:26 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 19.5 | 19.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH320 | 2 | 4.20 | 06/06/2022 13:27 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 19.5 | 19.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH310 | 1 | 16.00 | 06/06/2022 13:37 | 1 | 1011 | Battery operated dipr | 6423 | | 4.19 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH321 | 1 | 4.50 | 06/06/2022 13:46 | 1 | 1011 | Battery operated dipr | 6423 | | DRY | | 4.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH321 | 1 | 4.50 | 06/06/2022 13:40 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 10.0 | 10.0 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 06/06/2022 13:40 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 10.2 | 10.2 | 7.5 | 7.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 06/06/2022 13:40 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 10.3 | 10.3 | 6.6 | 6.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 06/06/2022 13:41 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 10.3 | 10.3 | 6.4 | 6.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 06/06/2022 13:41 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 10.3 | 10.3 | 6.4 | 6.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 06/06/2022 13:41 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 10.3 | 10.3 | 6.4 | 6.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 06/06/2022 13:41 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 10.3 | 10.3 | 6.4 | 6.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 06/06/2022 13:42 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 10.3 | 10.3 | 6.4 | 6.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH321 | 2 | 4.50 | 06/06/2022 13:43 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 9.9 | 9.9 | 7.0 | 7.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 2 | 4.50 | 06/06/2022 13:43 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 10.4 | 10.4 | 6.2 | 6.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 2 | 4.50 | 06/06/2022 13:43 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 10.5 | 10.5 | 6.1 | 6.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 2 | 4.50 | 06/06/2022 13:44 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 10.6 | 10.6 | 6.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 2 | 4.50 | 06/06/2022 13:44 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 10.6 | 10.6 | 6.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 2 | 4.50 | 06/06/2022 13:44 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 10.6 | 10.6 | 6.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 2 | 4.50 | 06/06/2022 13:44 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 10.6 | 10.6 | 6.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH321 | 2 | 4.50 | 06/06/2022 13:45 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 10.6 | 10.6 | 6.0 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH322 | 1 | 5.80 | 06/06/2022 13:53 | 1 | 1011 | Battery operated dipr | 6423 | | 3.83 | | 5.80 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH323 | 1 | 1.70 | 06/06/2022 14:06 | 1 | 1011 | Battery operated dipr | 6423 | | DRY | | 1.70 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH323 | 1 | 1.70 | 06/06/2022 14:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 6.7 | 6.7 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 06/06/2022 14:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.7 | 6.7 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 06/06/2022 14:00 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.8 | 6.8 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 06/06/2022 14:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.8 | 6.8 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 06/06/2022 14:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.9 | 6.9 | 14.2 | 14.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 06/06/2022 14:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.9 | 6.9 | 14.2 | 14.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 06/06/2022 14:01 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.9 | 6.9 | 14.2 | 14.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 06/06/2022 14:02 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.9 | 6.9 | 14.2 | 14.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH323 | 2 | 1.70 | 06/06/2022 14:03 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 6.5 | 6.5 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 2 | 1.70 | 06/06/2022 14:03 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.7 | 6.7 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 2 | 1.70 | 06/06/2022 14:03 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.7 | 6.7 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 2 | 1.70 | 06/06/2022 14:04 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.7 | 6.7 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 2 | 1.70 | 06/06/2022 14:04 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.7 | 6.7 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 2 | 1.70 | 06/06/2022 14:04 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.7 | 6.7 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH323 | 2 | 1.70 | 06/06/2022 14:05 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.7 | 6.7 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH212 | 1 | 9.00 | 07/06/2022 08:39 | 1 | 1010 | Battery operated dipr | 6423 | | 3.40 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH307 | 1 | 2.50 | 07/06/2022 08:32 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 2.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH307 | 1 | 2.50 | 07/06/2022 08:26 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 1.8 | 1.8 | 20.1 | 20.1 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 07/06/2022 08:26 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 1.8 | 1.8 | 19.4 | 19.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 07/06/2022 08:26 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 1.7 | 1.7 | 19.3 | 19.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 07/06/2022 08:27 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 1.7 | 1.7 | 19.3 | 19.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 07/06/2022 08:27 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 1.7 | 1.7 | 19.3 | 19.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 07/06/2022 08:27 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 1.7 | 1.7 | 19.3 | 19.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 07/06/2022 08:28 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 10 | 10 | 0.5 | 0.5 | 1.7 | 1.7 | 19.3 | 19.3 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH307 | 2 | 2.50 | 07/06/2022 08:29 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 1.5 | 1.5 | 19.5 | 19.5 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 2 | 2.50 | 07/06/2022 08:29 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.4 | 1.4 | 19.5 | 19.5 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 2 | 2.50 | 07/06/2022 08:29 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.4 | 1.4 | 19.5 | 19.5 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 2 | 2.50 | 07/06/2022 08:30 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.4 | 1.4 | 19.5 | 19.5 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 2 | 2.50 | 07/06/2022 08:30 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.4 | 1.4 | 19.5 | 19.5 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 2 | 2.50 | 07/06/2022 08:30 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.4 | 1.4 | 19.5 | 19.5 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH307 | 2 | 2.50 | 07/06/2022 08:31 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 1.4 | 1.4 | 19.5 | 19.5 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 07/06/2022 08:51 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH325 | 1 | 3.50 | 07/06/2022 08:43 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.9 | 0.9 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 07/06/2022 08:43 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.8 | 0.8 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 07/06/2022 08:43 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.8 | 0.8 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | mbar | | ppmv | ppmv | | | | |
| | | | | | | | | | | | | | | | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | | | | | | | |
| BH325 | 1 | 3.50 | 07/06/2022 08:44 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.8 | 0.8 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 07/06/2022 08:44 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.8 | 0.8 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 07/06/2022 08:44 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.8 | 0.8 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 07/06/2022 08:44 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.8 | 0.8 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 07/06/2022 08:45 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.8 | 0.8 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH325 | 2 | 3.50 | 07/06/2022 08:48 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.4 | 0.4 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 2 | 3.50 | 07/06/2022 08:48 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.4 | 0.4 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 2 | 3.50 | 07/06/2022 08:48 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.4 | 0.4 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 2 | 3.50 | 07/06/2022 08:49 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.4 | 0.4 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 2 | 3.50 | 07/06/2022 08:49 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.4 | 0.4 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 2 | 3.50 | 07/06/2022 08:49 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.4 | 0.4 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH325 | 2 | 3.50 | 07/06/2022 08:50 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.4 | 0.4 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH213 | 2 | 3.10 | 07/06/2022 09:08 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 3.10 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Gas monitor failing on heavy gas tap: | Water Only |
| BH213 | 2 | 3.10 | 07/06/2022 09:05 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 0.6 | 0.6 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH213 | 2 | 3.10 | 07/06/2022 09:05 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.5 | 0.5 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH213 | 2 | 3.10 | 07/06/2022 09:05 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH213 | 2 | 3.10 | 07/06/2022 09:06 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH213 | 2 | 3.10 | 07/06/2022 09:06 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH213 | 2 | 3.10 | 07/06/2022 09:06 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH213 | 2 | 3.10 | 07/06/2022 09:07 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 07/06/2022 09:21 | 1 | 1010 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH112 | 1 | 4.00 | 07/06/2022 09:15 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 2.8 | 2.8 | 17.2 | 17.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 07/06/2022 09:15 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.9 | 2.9 | 16.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 07/06/2022 09:15 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.9 | 2.9 | 16.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 07/06/2022 09:16 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.9 | 2.9 | 16.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 07/06/2022 09:16 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.9 | 2.9 | 16.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 07/06/2022 09:16 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.9 | 2.9 | 16.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 07/06/2022 09:17 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.9 | 2.9 | 16.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH112 | 2 | 4.00 | 07/06/2022 09:18 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 2.4 | 2.4 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 2 | 4.00 | 07/06/2022 09:17 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.9 | 2.9 | 16.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH112 | 2 | 4.00 | 07/06/2022 09:18 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 2.4 | 2.4 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 2 | 4.00 | 07/06/2022 09:18 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.1 | 2.1 | 17.8 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 2 | 4.00 | 07/06/2022 09:18 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.1 | 2.1 | 17.8 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 2 | 4.00 | 07/06/2022 09:19 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.1 | 2.1 | 17.8 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 2 | 4.00 | 07/06/2022 09:19 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.1 | 2.1 | 17.8 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 2 | 4.00 | 07/06/2022 09:19 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.1 | 2.1 | 17.8 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH112 | 2 | 4.00 | 07/06/2022 09:20 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.1 | 2.1 | 17.8 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH209 | 1 | 17.00 | 06/06/2022 11:16 | 1 | 1011 | Battery operated dipr | 6423 | | 12.36 | | 17.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH209 | 1 | 17.00 | 06/06/2022 11:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 1.0 | 1.0 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 06/06/2022 11:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 4.7 | 4.7 | 15.6 | 15.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | -0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 06/06/2022 11:10 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.1 | 6.1 | 9.8 | 9.8 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 06/06/2022 11:11 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 06/06/2022 11:11 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 06/06/2022 11:11 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.6 | -0.6 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 06/06/2022 11:11 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.7 | -0.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 06/06/2022 11:12 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.9 | -0.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH209 | 2 | 17.00 | 06/06/2022 11:13 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 5.3 | 5.3 | 10.4 | 10.4 | 0.0 | 0.0 | 0.0 | 0.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 2 | 17.00 | 06/06/2022 11:13 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 4.4 | 4.4 | 12.4 | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | -0.8 | -0.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 2 | 17.00 | 06/06/2022 11:13 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.9 | 3.9 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | -1.0 | -1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 2 | 17.00 | 06/06/2022 11:14 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.8 | 3.8 | 12.7 | 12.7 | 0.0 | 0.0 | 0.0 | 0.0 | -1.0 | -1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 2 | 17.00 | 06/06/2022 11:14 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.8 | 3.8 | 12.7 | 12.7 | 0.0 | 0.0 | 0.0 | 0.0 | -1.0 | -1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 2 | 17.00 | 06/06/2022 11:14 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.8 | 3.8 | 12.7 | 12.7 | 0.0 | 0.0 | 0.0 | 0.0 | -1.0 | -1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH209 | 2 | 17.00 | 06/06/2022 11:15 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.8 | 3.8 | 12.7 | 12.7 | 0.0 | 0.0 | 0.0 | 0.0 | -1.0 | -1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH105 | 1 | 9.50 | 06/06/2022 11:21 | 1 | 1011 | Battery operated dipr | 6423 | | 3.72 | | 9.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH313 | 1 | 8.00 | 06/06/2022 11:29 | 1 | 1011 | Battery operated dipr | 6423 | | DRY | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH313 | 1 | 8.00 | 06/06/2022 11:23 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 2.9 | 2.9 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 06/06/2022 11:23 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.9 | 2.9 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 06/06/2022 11:23 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.8 | 2.8 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 06/06/2022 11:24 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.8 | 2.8 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 06/06/2022 11:24 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.8 | 2.8 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 06/06/2022 11:24 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.8 | 2.8 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 06/06/2022 11:24 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.8 | 2.8 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 06/06/2022 11:25 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.8 | 2.8 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH313 | 2 | 8.00 | 06/06/2022 11:26 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 2.7 | 2.7 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 2 | 8.00 | 06/06/2022 11:26 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 2 | 8.00 | 06/06/2022 11:26 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 2 | 8.00 | 06/06/2022 11:27 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 2 | 8.00 | 06/06/2022 11:27 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 2 | 8.00 | 06/06/2022 11:27 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH313 | 2 | 8.00 | 06/06/2022 11:28 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 06/06/2022 11:45 | 1 | 1011 | Battery operated dipr | 6423 | | 9.86 | | 12.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH314 | 1 | 12.00 | 06/06/2022 11:39 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 840 | 1 | 42.0 | 42.0 | 12.3 | 12.3 | 12.5 | 12.5 | 6.0 | 6.0 | 4.0 | 4.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 06/06/2022 11:39 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 946 | 946 | 47.3 | 47.3 | 17.7 | 17.7 | 13.0 | 13.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH314 | 1 | 12.00 | 06/06/2022 11:39 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1124 | 1124 | 56.2 | 56.2 | 21.3 | 21.3 | 0.4 | 0.4 | 0.0 | 0.0 | 3.0 | 3.0 | 0.6 | 0.6 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 06/06/2022 11:40 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1158 | 1158 | 57.9 | 57.9 | 21.9 | 21.9 | 0.2 | 0.2 | 0.0 | 0.0 | 3.0 | 3.0 | 1.0 | 1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 06/06/2022 11:40 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1172 | 1172 | 58.6 | 58.6 | 22.2 | 22.2 | 0.2 | 0.2 | 0.0 | 0.0 | 3.0 | 3.0 | 1.3 | 1.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 06/06/2022 11:40 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1178 | 1178 | 58.9 | 58.9 | 22.3 | 22.3 | 0.1 | 0.1 | 0.0 | 0.0 | 3.0 | 3.0 | 1.4 | 1.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 06/06/2022 11:40 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1178 | 1178 | 58.9 | 58.9 | 22.4 | 22.4 | 0.1 | 0.1 | 0.0 | 0.0 | 3.0 | 3.0 | 1.5 | 1.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 06/06/2022 11:41 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1178 | 1178 | 58.9 | 58.9 | 22.4 | 22.4 | 0.1 | 0.1 | 0.0 | 0.0 | 3.0 | 3.0 | 1.5 | 1.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH314 | 2 | 12.00 | 06/06/2022 11:42 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1058 | 1 | 52.9 | 52.9 | 21.5 | 21.5 | 0.7 | 0.7 | 0.0 | 0.0 | 5.0 | 5.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 2 | 12.00 | 06/06/2022 11:42 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1084 | 1084 | 54.2 | 54.2 | 22.4 | 22.4 | 0.1 | 0.1 | 0.0 | 0.0 | 6.0 | 6.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 2 | 12.00 | 06/06/2022 11:42 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1092 | 1092 | 54.6 | 54.6 | 22.6 | 22.6 | 0.1 | 0.1 | 0.0 | 0.0 | 6.0 | 6.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 2 | 12.00 | 06/06/2022 11:43 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1092 | 1092 | 54.6 | 54.6 | 22.6 | 22.6 | 0.1 | 0.1 | 0.0 | 0.0 | 6.0 | 6.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 2 | 12.00 | 06/06/2022 11:43 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1092 | 1092 | 54.6 | 54.6 | 22.6 | 22.6 | 0.1 | 0.1 | 0.0 | 0.0 | 6.0 | 6.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 2 | 12.00 | 06/06/2022 11:43 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1092 | 1092 | 54.6 | 54.6 | 22.6 | 22.6 | 0.1 | 0.1 | 0.0 | 0.0 | 6.0 | 6.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 2 | 12.00 | 06/06/2022 11:43 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1092 | 1092 | 54.6 | 54.6 | 22.6 | 22.6 | 0.1 | 0.1 | 0.0 | 0.0 | 6.0 | 6.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH314 | 2 | 12.00 | 06/06/2022 11:44 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 1092 | 1092 | 54.6 | 54.6 | 22.6 | 22.6 | 0.1 | 0.1 | 0.0 | 0.0 | 6.0 | 6.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 06/06/2022 11:50 | 1 | 1011 | Battery operated dipr | 6423 | | DRY | | 19.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH305 | 1 | 10.00 | 06/06/2022 11:58 | 1 | 1011 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH305 | 1 | 10.00 | 06/06/2022 11:52 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.4 | 0.4 | 21.6 | 21.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 06/06/2022 11:52 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.2 | 4.2 | 18.4 | 18.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 06/06/2022 11:52 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.0 | 18.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 06/06/2022 11:53 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.0 | 4.0 | 17.9 | 17.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 06/06/2022 11:53 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.0 | 4.0 | 17.9 | 17.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 06/06/2022 11:53 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.0 | 4.0 | 17.9 | 17.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 06/06/2022 11:53 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.0 | 4.0 | 17.9 | 17.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 06/06/2022 11:54 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.0 | 4.0 | 17.9 | 17.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH305 | 2 | 10.00 | 06/06/2022 11:55 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 4.3 | 4.3 | 18.0 | 18.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 2 | 10.00 | 06/06/2022 11:55 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.1 | 18.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 2 | 10.00 | 06/06/2022 11:55 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.3 | 18.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 2 | 10.00 | 06/06/2022 11:56 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.3 | 18.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 2 | 10.00 | 06/06/2022 11:56 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.3 | 18.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 2 | 10.00 | 06/06/2022 11:56 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.3 | 18.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 2 | 10.00 | 06/06/2022 11:56 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.3 | 18.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH305 | 2 | 10.00 | 06/06/2022 11:57 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 4.3 | 4.3 | 18.3 | 18.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 06/06/2022 12:39 | 1 | 1011 | Battery operated dipr | 6423 | | 11.97 | | 13.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH208 | 1 | 13.00 | 06/06/2022 12:33 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 4.5 | 4.5 | 15.5 | 15.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 06/06/2022 12:33 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.3 | 6.3 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 06/06/2022 12:33 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 6.9 | 6.9 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 06/06/2022 12:34 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 06/06/2022 12:34 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 06/06/2022 12:34 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 06/06/2022 12:35 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 7.2 | 7.2 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH208 | 2 | 13.00 | 06/06/2022 12:36 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 3.5 | 3.5 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 2 | 13.00 | 06/06/2022 12:36 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.5 | 3.5 | 18.1 | 18.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 2 | 13.00 | 06/06/2022 12:36 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.6 | 3.6 | 18.1 | 18.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 2 | 13.00 | 06/06/2022 12:37 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.6 | 3.6 | 18.1 | 18.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 2 | 13.00 | 06/06/2022 12:37 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.6 | 3.6 | 18.1 | 18.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 2 | 13.00 | 06/06/2022 12:37 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.6 | 3.6 | 18.1 | 18.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH208 | 2 | 13.00 | 06/06/2022 12:38 | 1 | 1011 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.6 | 3.6 | 18.1 | 18.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 07/06/2022 09:02 | 1 | 1010 | Battery operated dipr | 6423 | | 4.00 | | 5.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| BH306 | 1 | 5.60 | 07/06/2022 08:56 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 7.8 | 7.8 | 20.3 | 20.3 | 0.0 | 0.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 07/06/2022 08:56 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.9 | 7.9 | 11.4 | 11.4 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 07/06/2022 08:56 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.9 | 7.9 | 9.7 | 9.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 07/06/2022 08:57 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.9 | 7.9 | 9.6 | 9.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 07/06/2022 08:57 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.9 | 7.9 | 9.6 | 9.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 07/06/2022 08:57 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.9 | 7.9 | 9.6 | 9.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 07/06/2022 08:58 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.9 | 7.9 | 9.6 | 9.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH306 | 2 | 5.60 | 07/06/2022 08:59 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 0.6 | 0.6 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 2 | 5.60 | 07/06/2022 08:59 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.5 | 0.5 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 2 | 5.60 | 07/06/2022 08:59 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 2 | 5.60 | 07/06/2022 09:00 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 2 | 5.60 | 07/06/2022 09:00 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 2 | 5.60 | 07/06/2022 09:00 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 2 | 5.60 | 07/06/2022 09:00 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH306 | 2 | 5.60 | 07/06/2022 09:01 | 1 | 1010 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.6 | 0.6 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | | Gas, PID and Groundwater |
| BH311 | 1 | 16.00 | 07/06/2022 09:37 | 1 | 1010 | Battery operated dipr | 6423 | | | | 16.00 | | | | | | | | | | | | | | | | | | | | | | | | Filled to brim with water unable to mo | Water Only |

# RESULTS OF MULTI-METER WATER READINGS

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? NO

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Details | | | | | | | | | | | | | | Remarks | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | Well volumes pumped | Temp | Actual Conductivity | Specific Conductivity | Total Disolved Solids | Resistivity | Density | Turbidity | pH | ORP | RDO Concentration | RDO Saturation | Oxygen Partial Pressure | Weather | Contractor | Remark |
| | | mbgl | | | bar | | | | degC | µS/cm | µS/cm | ppt | Ω·cm | g/cm³ | NTU | - | mV | mg/L | %sat | Torr | | | |
| GEO_BH201 | 1 | 8.00 | 06/06/2022 08:32 | 1 | 1011 | | | 1 | 11.2 | | 897 | | | | | 7.23 | 20.5 | | 39 | | | | |
| GEO_BH201 | 1 | 8.00 | 06/06/2022 08:42 | 1 | 1011 | | | 2 | 11.3 | | 870 | | | | | 7.28 | -33 | | 43.6 | | | | |
| GEO)_BH202 | 1 | 9.00 | 06/06/2022 10:16 | 1 | 1011 | | | 1 | 10.8 | | 1237 | | | | | 7.58 | -51.9 | | 37.7 | | | | |
| GEO_BH202 | 1 | 9.00 | 06/06/2022 10:26 | 1 | 1011 | | | 2 | 10.9 | | 1192 | | | | | 7.45 | -27 | | 32 | | | | could only obtain 2 well volumes |
| 01_BH103 | 1 | 3.50 | 06/06/2022 10:45 | 1 | 1011 | | | 1 | 10.6 | | 1441 | | | | | 7 | -52 | | 19.8 | | | | |
| 01_BH103 | 1 | 3.50 | 06/06/2022 10:55 | 1 | 1011 | | | 2 | 10.6 | | 1340 | | | | | 7.07 | -48.6 | | 2.4 | | | | |
| GEO_BH205 | 1 | 10.50 | 06/06/2022 09:31 | 1 | 1011 | | | 1 | 10.7 | | 831 | | | | | 7.37 | 91.6 | | 65.6 | | | | |
| GEO_BH205 | 1 | 10.50 | 06/06/2022 09:41 | 1 | 1011 | | | 2 | 10.8 | | 932 | | | | | 7.3 | -6.4 | | 54.1 | | | | |
| GEO_BH205 | 1 | 10.50 | 06/06/2022 09:51 | 1 | 1011 | | | 3 | 10.8 | | 981 | | | | | 7.23 | -38.5 | | 28 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |

# LIST OF MONITORING VISIT ENVIRONMENTAL WATER SAMPLES

Contract No. 326R
Contract Name Manc Vic North

Client: BAM Ritchies
Engineer: Imtiyaaz Patel

YOUR SAFETY IS MY SAFETY

| Sample Details | | | | | | | Environmental Container Barcodes | | | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location ID | Top Depth mbgl | Reference | Type | ID | Base Depth mbgl | Date Time Sampled | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| BH201 | 7.70 | GWBH-BH201 7.70 | W | GWBH-BH201 7.70 | 8.00 | 06/06/2022 08:42 | | | | | | | | | |
| BH205 | 8.42 | GWBH-BH205 8.42 | W | GWBH-BH205 8.42 | 10.50 | 06/06/2022 09:51 | | | | | | | | | |
| BH202 | 8.30 | GWBH-BH202 8.30 | W | GWBH-BH202 8.30 | 9.00 | 06/06/2022 10:26 | | | | | | | | | |
| BH103 | 3.45 | GWBH-BH103 3.45 | W | GWBH-BH103 3.45 | 3.50 | 06/06/2022 10:55 | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH101 | 1 | 5.00 | 20/06/2022 08:52 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 5.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH101 | 1 | 5.00 | 20/06/2022 08:46 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 5.6 | 5.6 | 18.5 | 18.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:46 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.0 | 6.0 | 5.6 | 5.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:46 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.1 | 6.1 | 4.2 | 4.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:47 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.1 | 6.1 | 4.0 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:47 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.1 | 6.1 | 4.0 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:47 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.1 | 6.1 | 4.0 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:47 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.1 | 6.1 | 4.0 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:48 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 6.1 | 6.1 | 4.0 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH101 | 1 | 5.00 | 20/06/2022 08:49 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 6.3 | 6.3 | 4.4 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:49 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.5 | 7.5 | 4.5 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:49 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 7.7 | 7.7 | 4.4 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:50 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.1 | 8.1 | 4.3 | 4.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:50 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.1 | 8.1 | 4.3 | 4.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:50 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.1 | 8.1 | 4.3 | 4.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:50 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.1 | 8.1 | 4.3 | 4.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 20/06/2022 08:51 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 8.1 | 8.1 | 4.3 | 4.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 09:02 | 1 | 1017 | Battery operated dipr | 6423 | | 5.94 | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH201 | 1 | 8.00 | 20/06/2022 08:56 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 2.0 | 2.0 | 7.2 | 7.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 08:56 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.0 | 2.0 | 15.6 | 15.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 08:56 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.0 | 2.0 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 08:57 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.0 | 2.0 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 08:57 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.9 | 1.9 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 08:57 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.9 | 1.9 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 08:57 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.9 | 1.9 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 08:58 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.9 | 1.9 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH201 | 1 | 8.00 | 20/06/2022 08:59 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.3 | 0.3 | 18.0 | 18.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 08:59 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 08:59 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 09:00 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 09:00 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 09:00 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 20/06/2022 09:01 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.3 | 0.3 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 20/06/2022 09:08 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 1.30 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| WS201B | 1 | 1.30 | 20/06/2022 09:05 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 0.6 | 0.6 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 20/06/2022 09:05 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 20/06/2022 09:05 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 20/06/2022 09:06 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 20/06/2022 09:06 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 20/06/2022 09:06 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 20/06/2022 09:06 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 20/06/2022 09:07 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.6 | 0.6 | 19.6 | 19.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH202 | 1 | 9.00 | 20/06/2022 09:42 | 1 | 1017 | Battery operated dipr | 6423 | | 5.40 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH202 | 1 | 9.00 | 20/06/2022 09:36 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 0.3 | 0.3 | 18.4 | 18.4 | 0.0 | 0.0 | 9.0 | 9.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:36 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.5 | 0.5 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:36 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.5 | 0.5 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:37 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.5 | 0.5 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:37 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.5 | 0.5 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:37 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.5 | 0.5 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:37 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.5 | 0.5 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:38 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.5 | 0.5 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH202 | 1 | 9.00 | 20/06/2022 09:39 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 0.1 | 0.1 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:39 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:39 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 20.7 | 20.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:40 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:40 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:40 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:40 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 20/06/2022 09:41 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 20/06/2022 09:45 | 1 | 1017 | Battery operated dipr | 6423 | | | | 6.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH103 | 1 | 3.50 | 20/06/2022 09:50 | 1 | 1017 | Battery operated dipr | 6423 | | 2.50 | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH304 | 1 | 10.00 | 20/06/2022 10:18 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH304 | 1 | 10.00 | 20/06/2022 10:12 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 7.0 | 7.0 | 10.9 | 10.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:12 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.2 | 7.2 | 10.9 | 10.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:12 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.2 | 7.2 | 11.0 | 11.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:13 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.2 | 7.2 | 11.0 | 11.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:13 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.2 | 7.2 | 11.0 | 11.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:13 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.2 | 7.2 | 11.0 | 11.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:14 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.2 | 7.2 | 11.0 | 11.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH304 | 1 | 10.00 | 20/06/2022 10:15 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 5.8 | 5.8 | 12.3 | 12.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:15 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 5.5 | 5.5 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:15 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 5.2 | 5.2 | 12.2 | 12.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 5.2 | 5.2 | 12.2 | 12.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 5.2 | 5.2 | 12.2 | 12.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 5.2 | 5.2 | 12.2 | 12.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH304 | 1 | 10.00 | 20/06/2022 10:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 5.2 | 5.2 | 12.2 | 12.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 20/06/2022 10:17 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 5.2 | 5.2 | 12.2 | 12.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:58 | 1 | 1017 | Battery operated dipr | 6423 | | 12.70 | | 15.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH207 | 1 | 15.50 | 20/06/2022 09:52 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 0.5 | 0.5 | 21.0 | 21.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:52 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.6 | 0.6 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:52 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.7 | 0.7 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:53 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.4 | 0.4 | 21.1 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:53 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.9 | 0.9 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:53 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.3 | 0.3 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:53 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.3 | 0.3 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:54 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.3 | 0.3 | 21.2 | 21.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH207 | 1 | 15.50 | 20/06/2022 09:55 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:55 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:55 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:56 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:56 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:56 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 20/06/2022 09:57 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:45 | 1 | 1017 | Battery operated dipr | 6423 | | 3.25 | | 6.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH102 | 1 | 6.50 | 20/06/2022 11:39 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 1.5 | 1.5 | 20.3 | 20.3 | 0.0 | 0.0 | 2.0 | 2.0 | -2.1 | -2.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:39 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.5 | 0.5 | 21.0 | 21.0 | 0.0 | 0.0 | 1.0 | 1.0 | -2.0 | -2.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:39 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.5 | 0.5 | 20.9 | 20.9 | 0.0 | 0.0 | 1.0 | 1.0 | -1.9 | -1.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.5 | 0.5 | 20.9 | 20.9 | 0.0 | 0.0 | 1.0 | 1.0 | -1.8 | -1.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.5 | 0.5 | 20.9 | 20.9 | 0.0 | 0.0 | 1.0 | 1.0 | -1.7 | -1.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.5 | 0.5 | 20.9 | 20.9 | 0.0 | 0.0 | 1.0 | 1.0 | -1.6 | -1.6 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.5 | 0.5 | 20.9 | 20.9 | 0.0 | 0.0 | 1.0 | 1.0 | -1.5 | -1.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:41 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.5 | 0.5 | 20.9 | 20.9 | 0.0 | 0.0 | 1.0 | 1.0 | -1.4 | -1.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH102 | 1 | 6.50 | 20/06/2022 11:42 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 0.6 | 0.6 | 21.0 | 21.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:42 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.0 | 1.0 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:42 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.4 | 1.4 | 19.6 | 19.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 19.4 | 19.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.7 | 1.7 | 19.2 | 19.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.9 | 1.9 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.9 | 1.9 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 20/06/2022 11:44 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.9 | 1.9 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 20/06/2022 09:26 | 2 | 1017 | Battery operated dipr | 6423 | | 6.11 | | 10.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH205 | 1 | 10.50 | 20/06/2022 09:23 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 0.8 | 0.8 | 19.8 | 19.8 | 0.0 | 0.0 | 5.0 | 5.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 20/06/2022 09:23 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.8 | 1.8 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | -0.8 | -0.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 20/06/2022 09:23 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.8 | 1.8 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.7 | -0.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 20/06/2022 09:24 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.8 | 1.8 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 20/06/2022 09:24 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.9 | 1.9 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 20/06/2022 09:24 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.9 | 1.9 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 20/06/2022 09:24 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.9 | 1.9 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 20/06/2022 09:25 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.9 | 1.9 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 20/06/2022 11:56 | 2 | 1017 | Battery operated dipr | 6423 | | 2.96 | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH204 | 1 | 10.00 | 20/06/2022 11:53 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 1.5 | 1.5 | 20.7 | 20.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 20/06/2022 11:53 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 20/06/2022 11:53 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 20/06/2022 11:54 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 20/06/2022 11:54 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 20/06/2022 11:54 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 20/06/2022 11:55 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH203 | 1 | 24.00 | 20/06/2022 12:03 | 1 | 1017 | Battery operated dipr | 6423 | | 12.24 | | 24.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH315 | 1 | 12.50 | 20/06/2022 12:15 | 1 | 1017 | Battery operated dipr | 6423 | | 9.82 | | 12.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH315 | 1 | 12.50 | 20/06/2022 12:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 0.5 | 0.5 | 18.6 | 18.6 | 0.0 | 0.0 | 3.0 | 3.0 | -0.2 | -0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 10.4 | 10.4 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 10.3 | 10.3 | 0.0 | 0.0 | 1.0 | 1.0 | -0.2 | -0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:10 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 10.1 | 10.1 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:10 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 10.1 | 10.1 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:10 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 10.1 | 10.1 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:11 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 10.1 | 10.1 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH315 | 1 | 12.50 | 20/06/2022 12:12 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 1 | 0.0 | 0.0 | 1.6 | 1.6 | 15.0 | 15.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:12 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.7 | 1.7 | 14.2 | 14.2 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:12 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.8 | 1.8 | 14.2 | 14.2 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:13 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.8 | 1.8 | 14.2 | 14.2 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:13 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.8 | 1.8 | 14.2 | 14.2 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:13 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.8 | 1.8 | 14.2 | 14.2 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 20/06/2022 12:14 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.8 | 1.8 | 14.2 | 14.2 | 0.0 | 0.0 | 1.0 | 1.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:30 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 4.20 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH320 | 1 | 4.20 | 20/06/2022 12:24 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 1 | 0.0 | 0.0 | 1.7 | 1.7 | 17.5 | 17.5 | 0.0 | 0.0 | 23.0 | 23.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:24 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 19.8 | 19.8 | 0.0 | 0.0 | 29.0 | 29.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:24 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 19.8 | 19.8 | 0.0 | 0.0 | 29.0 | 29.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:25 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 19.8 | 19.8 | 0.0 | 0.0 | 29.0 | 29.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:25 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 19.8 | 19.8 | 0.0 | 0.0 | 29.0 | 29.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:25 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 19.8 | 19.8 | 0.0 | 0.0 | 29.0 | 29.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

bam ritchies

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH320 | 1 | 4.20 | 20/06/2022 12:25 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 19.8 | 19.8 | 0.0 | 0.0 | 29.0 | 29.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:26 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 19.8 | 19.8 | 0.0 | 0.0 | 29.0 | 29.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH320 | 1 | 4.20 | 20/06/2022 12:27 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 1 | 0.0 | 0.0 | 0.1 | 0.1 | 21.0 | 21.0 | 0.0 | 0.0 | 10.0 | 10.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:27 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.1 | 0.1 | 21.0 | 21.0 | 0.0 | 0.0 | 10.0 | 10.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:27 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.3 | 0.3 | 20.9 | 20.9 | 0.0 | 0.0 | 13.0 | 13.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:28 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.2 | 1.2 | 20.5 | 20.5 | 0.0 | 0.0 | 21.0 | 21.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:28 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.5 | 1.5 | 20.1 | 20.1 | 0.0 | 0.0 | 28.0 | 28.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:28 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 20.0 | 20.0 | 0.0 | 0.0 | 32.0 | 32.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:28 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 19.9 | 19.9 | 0.0 | 0.0 | 36.0 | 36.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 20/06/2022 12:29 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.6 | 1.6 | 19.9 | 19.9 | 0.0 | 0.0 | 38.0 | 38.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH310 | 1 | 16.00 | 20/06/2022 12:44 | 1 | 1017 | Battery operated dipr | 6423 | | 4.25 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH321 | 1 | 4.50 | 20/06/2022 12:55 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 4.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH321 | 1 | 4.50 | 20/06/2022 12:49 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 9.7 | 9.7 | 11.8 | 11.8 | 0.0 | 0.0 | 13.0 | 13.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:49 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.9 | 9.9 | 8.9 | 8.9 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:49 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 10.0 | 10.0 | 8.5 | 8.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:50 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 10.2 | 10.2 | 8.1 | 8.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:50 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 10.3 | 10.3 | 7.7 | 7.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:50 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 10.4 | 10.4 | 7.4 | 7.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:50 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 10.4 | 10.4 | 7.1 | 7.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:51 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 10.7 | 10.7 | 6.1 | 6.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH321 | 1 | 4.50 | 20/06/2022 12:52 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 8.9 | 8.9 | 13.3 | 13.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:52 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.6 | 9.6 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:52 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.7 | 9.7 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:53 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.7 | 9.7 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:53 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.7 | 9.7 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:53 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.7 | 9.7 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:53 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.7 | 9.7 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 20/06/2022 12:54 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.7 | 9.7 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH322 | 1 | 5.80 | 20/06/2022 13:01 | 1 | 1017 | Battery operated dipr | 6423 | | 3.82 | | 5.80 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH323 | 1 | 1.70 | 20/06/2022 13:18 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 1.70 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH323 | 1 | 1.70 | 20/06/2022 13:12 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 6.8 | 6.8 | 13.5 | 13.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:12 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 8.1 | 8.1 | 12.7 | 12.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:12 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 8.9 | 8.9 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:13 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.2 | 9.2 | 11.9 | 11.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:13 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.4 | 9.4 | 11.8 | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:13 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.4 | 9.4 | 11.8 | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:13 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.4 | 9.4 | 11.8 | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:14 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 9.4 | 9.4 | 11.8 | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH323 | 1 | 1.70 | 20/06/2022 13:15 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 8.4 | 8.4 | 13.1 | 13.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:15 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.3 | 8.3 | 13.0 | 13.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:15 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.6 | 8.6 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.9 | 8.9 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.1 | 9.1 | 11.9 | 11.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.1 | 9.1 | 11.9 | 11.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 20/06/2022 13:17 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.1 | 9.1 | 11.9 | 11.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH212 | 1 | 9.00 | 21/06/2022 08:33 | 1 | 1013 | Battery operated dipr | 6423 | | 3.40 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH307 | 1 | 2.50 | 21/06/2022 08:28 | 1 | 1013 | Battery operated dipr | 6423 | | DRY | | 2.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH307 | 1 | 2.50 | 21/06/2022 08:22 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 1 | 0.4 | 0.4 | 0.1 | 0.1 | 21.6 | 21.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:22 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 1.0 | 1.0 | 2.0 | 2.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:22 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 1.0 | 1.0 | 2.0 | 2.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:23 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 1.0 | 1.0 | 2.0 | 2.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:23 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 1.0 | 1.0 | 2.0 | 2.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:23 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 1.0 | 1.0 | 2.0 | 2.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:24 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 8 | 8 | 0.4 | 0.4 | 0.1 | 0.1 | 21.7 | 21.7 | 1.0 | 1.0 | 2.0 | 2.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH307 | 1 | 2.50 | 21/06/2022 08:25 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 2.6 | 2.6 | 19.1 | 19.1 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:25 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 18.4 | 18.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:25 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 18.4 | 18.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:26 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 18.4 | 18.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:26 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 18.4 | 18.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:26 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 18.4 | 18.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 21/06/2022 08:27 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 2.6 | 2.6 | 18.4 | 18.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:41 | 1 | 1013 | Battery operated dipr | 6423 | | DRY | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH325 | 1 | 3.50 | 21/06/2022 08:35 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.8 | 0.8 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:35 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:35 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.1 | 1.1 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:36 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.1 | 1.1 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:36 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.1 | 1.1 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:36 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.1 | 1.1 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:37 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 1.1 | 1.1 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH325 | 1 | 3.50 | 21/06/2022 08:38 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 0.6 | 0.6 | 19.8 | 19.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:38 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:38 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:39 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH325 | 1 | 3.50 | 21/06/2022 08:39 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:39 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:39 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 21/06/2022 08:40 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:53 | 1 | 1013 | Battery operated dipr | 6423 | | DRY | | 3.10 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH213 | 1 | 3.10 | 21/06/2022 08:47 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 1.0 | 1.0 | 19.2 | 19.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:47 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.2 | 1.2 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:47 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.2 | 1.2 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:48 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.2 | 1.2 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:48 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.2 | 1.2 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:48 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.2 | 1.2 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:48 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.2 | 1.2 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:49 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.2 | 1.2 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH213 | 1 | 3.10 | 21/06/2022 08:50 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.2 | 0.2 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:50 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.2 | 0.2 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:50 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.2 | 0.2 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:51 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.2 | 0.2 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:51 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.2 | 0.2 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:51 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.2 | 0.2 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:51 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.2 | 0.2 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 21/06/2022 08:52 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.2 | 0.2 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:15 | 1 | 1013 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH112 | 1 | 4.00 | 21/06/2022 09:09 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 3.2 | 3.2 | 14.0 | 14.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:09 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 16.3 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:09 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 16.3 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:10 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 16.3 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:10 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 16.3 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:10 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 16.3 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:10 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 16.3 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:11 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 16.3 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH112 | 1 | 4.00 | 21/06/2022 09:12 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 3.2 | 3.2 | 16.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:12 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 16.4 | 16.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:12 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 16.4 | 16.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:13 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:13 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:13 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:13 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:13 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 21/06/2022 09:13 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH209 | 1 | 17.00 | 20/06/2022 10:34 | 1 | 1017 | Battery operated dipr | 6423 | | 12.48 | | 17.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH209 | 1 | 17.00 | 20/06/2022 10:28 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 1.2 | 1.2 | 14.7 | 14.7 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:28 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 5.7 | 5.7 | 9.4 | 9.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:28 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.8 | 6.8 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:29 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:29 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:29 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:30 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.9 | 6.9 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH209 | 1 | 17.00 | 20/06/2022 10:31 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 0.3 | 0.3 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:31 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.2 | 0.2 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:31 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:32 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:32 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:32 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 20/06/2022 10:33 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 0.1 | 0.1 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH105 | 1 | 9.50 | 20/06/2022 10:39 | 1 | 1017 | Battery operated dipr | 6423 | | 3.70 | | 9.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH313 | 1 | 8.00 | 20/06/2022 10:46 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH313 | 1 | 8.00 | 20/06/2022 10:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 2.8 | 2.8 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.9 | 2.9 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.0 | 2.0 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:41 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.0 | 2.0 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:41 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.0 | 2.0 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:41 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.0 | 2.0 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:42 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.0 | 2.0 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH313 | 1 | 8.00 | 20/06/2022 10:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 2.2 | 2.2 | 17.1 | 17.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.5 | 2.5 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.7 | 2.7 | 15.5 | 15.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:44 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.8 | 2.8 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:44 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.8 | 2.8 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:44 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.8 | 2.8 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:44 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.8 | 2.8 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 20/06/2022 10:45 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.8 | 2.8 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 11:01 | 1 | 1017 | Battery operated dipr | 6423 | | 10.04 | | 12.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH314 | 1 | 12.00 | 20/06/2022 10:55 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 224 | 1 | 11.2 | 11.2 | 3.3 | 3.3 | 16.5 | 16.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:55 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 128 | 128 | 6.4 | 6.4 | 1.0 | 1.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:55 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 50 | 50 | 2.5 | 2.5 | 0.8 | 0.8 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

bam ritchies

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | Reading Type |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | peak %LEL | s/s %LEL | peak %vol | s/s %vol | peak %vol | s/s %vol | peak %vol | s/s %vol | peak ppm | s/s ppm | peak ppm | s/s ppm | peak l/hr | s/s l/hr | mbar | | peak ppmv | s/s ppmv | | | | |
| BH314 | 1 | 12.00 | 20/06/2022 10:56 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 46 | 46 | 2.3 | 2.3 | 0.7 | 0.7 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:56 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 42 | 42 | 2.1 | 2.1 | 0.7 | 0.7 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:56 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 42 | 42 | 2.1 | 2.1 | 0.7 | 0.7 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:56 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 42 | 42 | 2.1 | 2.1 | 0.7 | 0.7 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:57 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 42 | 42 | 2.1 | 2.1 | 0.7 | 0.7 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH314 | 1 | 12.00 | 20/06/2022 10:58 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 1128 | 1 | 56.4 | 56.4 | 20.2 | 20.2 | 3.3 | 3.3 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:58 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 1134 | 1134 | 56.7 | 56.7 | 20.6 | 20.6 | 0.5 | 0.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:58 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 1134 | 1134 | 56.7 | 56.7 | 20.6 | 20.6 | 0.5 | 0.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:59 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 1134 | 1134 | 56.7 | 56.7 | 20.6 | 20.6 | 0.5 | 0.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:59 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 1134 | 1134 | 56.7 | 56.7 | 20.6 | 20.6 | 0.5 | 0.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 10:59 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 1134 | 1134 | 56.7 | 56.7 | 20.6 | 20.6 | 0.5 | 0.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 20/06/2022 11:00 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 1134 | 1134 | 56.7 | 56.7 | 20.6 | 20.6 | 0.5 | 0.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 20/06/2022 11:07 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 19.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH305 | 1 | 10.00 | 20/06/2022 11:16 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH305 | 1 | 10.00 | 20/06/2022 11:10 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 1 | 0.3 | 0.3 | 2.1 | 2.1 | 17.5 | 17.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:10 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 2.1 | 2.1 | 19.4 | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:10 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:11 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:11 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:11 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:12 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH305 | 1 | 10.00 | 20/06/2022 11:13 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 1 | 0.8 | 0.8 | 2.8 | 2.8 | 18.9 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:13 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 3.1 | 3.1 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:13 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 3.2 | 3.2 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:14 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 3.2 | 3.2 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:14 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 3.2 | 3.2 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:14 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 3.2 | 3.2 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 20/06/2022 11:15 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 3.2 | 3.2 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:27 | 1 | 1017 | Battery operated dipr | 6423 | | 11.99 | | 13.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH208 | 1 | 13.00 | 20/06/2022 11:21 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 22 | 1 | 1.1 | 1.1 | 3.3 | 3.3 | 18.5 | 18.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:21 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 6 | 6 | 0.3 | 0.3 | 5.5 | 5.5 | 15.2 | 15.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:21 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.3 | 6.3 | 14.9 | 14.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:22 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.6 | 6.6 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:22 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 6.7 | 6.7 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:22 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.2 | 7.2 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:22 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.2 | 7.2 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:23 | 1 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.2 | 7.2 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH208 | 1 | 13.00 | 20/06/2022 11:24 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 1.0 | 1.0 | 20.0 | 20.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:24 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.0 | 1.0 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:24 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.0 | 1.0 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:25 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.0 | 1.0 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:25 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.0 | 1.0 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:25 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.0 | 1.0 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 20/06/2022 11:26 | 2 | 1017 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 1.0 | 1.0 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 09:04 | 1 | 1013 | Battery operated dipr | 6423 | | 4.02 | | 5.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH306 | 1 | 5.60 | 21/06/2022 08:58 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 1 | 0.2 | 0.2 | 7.7 | 7.7 | 12.6 | 12.6 | 1.0 | 1.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 08:58 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.8 | 7.8 | 10.5 | 10.5 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 08:58 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.8 | 7.8 | 10.4 | 10.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 08:59 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.8 | 7.8 | 10.4 | 10.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 08:59 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.8 | 7.8 | 10.4 | 10.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 08:59 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.8 | 7.8 | 10.4 | 10.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 09:00 | 1 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.8 | 7.8 | 10.4 | 10.4 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Post fieldworks | |
| BH306 | 1 | 5.60 | 21/06/2022 09:01 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 1 | 0.1 | 0.1 | 7.5 | 7.5 | 10.5 | 10.5 | 1.0 | 1.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 09:01 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 4 | 4 | 0.2 | 0.2 | 7.7 | 7.7 | 10.4 | 10.4 | 1.0 | 1.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 09:01 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.7 | 7.7 | 10.4 | 10.4 | 0.0 | 0.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 09:02 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.7 | 7.7 | 10.4 | 10.4 | 0.0 | 0.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 09:02 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.7 | 7.7 | 10.4 | 10.4 | 0.0 | 0.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 09:02 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.7 | 7.7 | 10.4 | 10.4 | 0.0 | 0.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 21/06/2022 09:03 | 2 | 1013 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.7 | 7.7 | 10.4 | 10.4 | 0.0 | 0.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:24 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 5.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:18 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 6.2 | 6.2 | 16.3 | 16.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:18 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 6.4 | 6.4 | 5.5 | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:18 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 6.5 | 6.5 | 4.6 | 4.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 6.5 | 6.5 | 4.5 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 6.5 | 6.5 | 4.4 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 6.5 | 6.5 | 4.4 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 6.5 | 6.5 | 4.4 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 6.5 | 6.5 | 4.4 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:21 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.3 | 7.3 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:21 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.1 | 8.1 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:21 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:22 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:22 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:22 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:22 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 04/07/2022 08:23 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 5.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:35 | 1 | 1016 | Battery operated dipr | 6423 | | 5.40 | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:29 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.3 | 1.3 | 11.8 | 11.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:29 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.4 | 1.4 | 15.7 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:29 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.4 | 1.4 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:30 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.4 | 1.4 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:30 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.4 | 1.4 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:30 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.4 | 1.4 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:30 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.4 | 1.4 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.4 | 1.4 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:32 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.4 | 0.4 | 18.4 | 18.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:32 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.3 | 0.3 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:32 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.3 | 0.3 | 20.7 | 20.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.3 | 0.3 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.3 | 0.3 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.3 | 0.3 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.3 | 0.3 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 04/07/2022 08:34 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.3 | 0.3 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:12 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 1.30 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:06 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.4 | 1.4 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:06 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.4 | 1.4 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:06 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.4 | 1.4 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:07 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.4 | 1.4 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:07 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.4 | 1.4 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:07 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.4 | 1.4 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:08 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.4 | 1.4 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:09 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.0 | 1.0 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:09 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.9 | 0.9 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:09 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.9 | 0.9 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:10 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:10 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:10 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 04/07/2022 09:11 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:11 | 1 | 1016 | Battery operated dipr | 6423 | | 5.56 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:05 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.4 | 0.4 | 20.6 | 20.6 | 0.0 | 0.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:05 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 18.3 | 18.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:05 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:06 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:06 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:06 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:07 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:08 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 19.0 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:08 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.6 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:08 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:09 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:09 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:09 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 04/07/2022 11:10 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:28 | 1 | 1016 | Battery operated dipr | 6423 | | 3.22 | | 6.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:22 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.7 | 7.7 | 14.4 | 14.4 | 0.0 | 0.0 | 9.0 | 9.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:22 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.9 | 7.9 | 9.4 | 9.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:22 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.9 | 7.9 | 8.9 | 8.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:23 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.0 | 8.0 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:23 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.0 | 8.0 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:23 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.0 | 8.0 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:24 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.0 | 8.0 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:25 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.5 | 7.5 | 9.2 | 9.2 | 0.0 | 0.0 | 31.0 | 31.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:25 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.8 | 7.8 | 8.7 | 8.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:25 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.8 | 7.8 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:26 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.8 | 7.8 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:26 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.8 | 7.8 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:26 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.8 | 7.8 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:26 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.8 | 7.8 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 04/07/2022 10:27 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 7.8 | 7.8 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH303 | 1 | 12.70 | 04/07/2022 10:34 | 1 | 1016 | Battery operated dipr | 6423 | | 8.06 | | 12.70 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| 01_BH103 | 1 | 3.50 | 04/07/2022 11:34 | 1 | 1016 | Battery operated dipr | 6423 | | 2.52 | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH304 | 1 | 10.00 | 04/07/2022 13:59 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH304 | 1 | 10.00 | 04/07/2022 13:53 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:53 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.1 | 4.1 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:53 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.2 | 4.2 | 15.9 | 15.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:54 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.2 | 4.2 | 15.8 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:54 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.3 | 4.3 | 15.8 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:54 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.3 | 4.3 | 15.8 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:54 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.3 | 4.3 | 15.8 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:55 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.3 | 4.3 | 15.8 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:56 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 4.6 | 4.6 | 15.7 | 15.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:56 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.0 | 6.0 | 11.8 | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:56 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.5 | 6.5 | 10.6 | 10.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:57 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.8 | 6.8 | 10.3 | 10.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:57 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.0 | 7.0 | 10.2 | 10.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:57 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.1 | 7.1 | 10.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:57 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.3 | 7.3 | 9.7 | 9.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 04/07/2022 13:58 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.3 | 7.3 | 9.7 | 9.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 12:02 | 1 | 1016 | Battery operated dipr | 6423 | | 12.70 | | 15.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:56 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:56 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.0 | 1.0 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:56 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.7 | 1.7 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:57 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.0 | 2.0 | 18.9 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:57 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.4 | 0.4 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:57 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.3 | 0.3 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:57 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.0 | 1.0 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:58 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.0 | 1.0 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:59 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 19.8 | 19.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:59 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.4 | 0.4 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 11:59 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.4 | 0.4 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 12:00 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.1 | 2.1 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 12:00 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.3 | 0.3 | 20.7 | 20.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 12:00 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 12:00 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 04/07/2022 12:01 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:07 | 1 | 1016 | Battery operated dipr | 6423 | | 3.23 | | 6.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.0 | 6.0 | 10.4 | 10.4 | 0.0 | 0.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 4.4 | 4.4 | 14.5 | 14.5 | 0.0 | 0.0 | 1.0 | 1.0 | 1.1 | 1.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.9 | 3.9 | 15.7 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 | 1.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.8 | 3.8 | 15.8 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 1.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.8 | 3.8 | 15.8 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.8 | 3.8 | 15.8 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 | 2.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.8 | 3.8 | 15.8 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 | 2.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:03 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.8 | 3.8 | 15.8 | 15.8 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 2.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.7 | 2.7 | 16.5 | 16.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.1 | 3.1 | 16.4 | 16.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 4.4 | 4.4 | 14.4 | 14.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 5.5 | 5.5 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.1 | 6.1 | 11.6 | 11.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.2 | 6.2 | 11.6 | 11.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.2 | 6.2 | 11.6 | 11.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 04/07/2022 14:06 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.2 | 6.2 | 11.6 | 11.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:19 | 1 | 1016 | Battery operated dipr | 6423 | | 6.10 | | 10.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:13 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.7 | 0.7 | 19.5 | 19.5 | 0.0 | 0.0 | 4.0 | 4.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:13 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.5 | 1.5 | 16.5 | 16.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:13 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.5 | 1.5 | 16.3 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.5 | 1.5 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.5 | 1.5 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.5 | 1.5 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.5 | 1.5 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 1.5 | 1.5 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:16 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.2 | 0.2 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:16 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:16 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:17 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:17 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:17 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 04/07/2022 09:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 05/07/2022 08:07 | 2 | 1020 | Battery operated dipr | 6423 | | 2.95 | | 10.00 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH204 | 1 | 10.00 | 05/07/2022 08:04 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.3 | 0.3 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 05/07/2022 08:04 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 05/07/2022 08:04 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 05/07/2022 08:05 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 05/07/2022 08:05 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 05/07/2022 08:05 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 05/07/2022 08:05 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 05/07/2022 08:06 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH203 | 1 | 24.00 | 05/07/2022 08:39 | 1 | 1020 | Battery operated dipr | 6423 | | 12.32 | | 24.00 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH315 | 1 | 12.50 | 05/07/2022 09:17 | 1 | 1020 | Battery operated dipr | 6423 | | 9.89 | | 12.50 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH315 | 1 | 12.50 | 05/07/2022 09:11 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.8 | 3.8 | 19.8 | 19.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:11 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.9 | 3.9 | 12.0 | 12.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:11 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.9 | 3.9 | 9.5 | 9.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:12 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.0 | 4.0 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:12 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.0 | 4.0 | 8.5 | 8.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:12 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.0 | 4.0 | 8.5 | 8.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:12 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.0 | 4.0 | 8.5 | 8.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:13 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 4.0 | 4.0 | 8.5 | 8.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:14 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.0 | 1.0 | 10.4 | 10.4 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | -0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:14 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.3 | 1.3 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:14 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 1.8 | 1.8 | 13.8 | 13.8 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:15 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.2 | 2.2 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:15 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.3 | 2.3 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:15 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.3 | 2.3 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:15 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.3 | 2.3 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 05/07/2022 09:16 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.3 | 2.3 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:55 | 1 | 1020 | Battery operated dipr | 6423 | | DRY | | 4.20 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH320 | 1 | 4.20 | 05/07/2022 09:49 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.4 | 2.4 | 19.5 | 19.5 | 0.0 | 0.0 | 5.0 | 5.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:49 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.4 | 2.4 | 18.1 | 18.1 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:49 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.4 | 2.4 | 18.1 | 18.1 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:50 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.4 | 2.4 | 18.1 | 18.1 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:50 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.4 | 2.4 | 18.1 | 18.1 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:50 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.4 | 2.4 | 18.1 | 18.1 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:50 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.4 | 2.4 | 18.1 | 18.1 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:51 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.4 | 2.4 | 18.1 | 18.1 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:52 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 2.1 | 2.1 | 21.0 | 21.0 | 18.1 | 18.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:52 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 21.0 | 21.0 | 20.7 | 20.7 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:52 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.9 | 20.9 | 20.7 | 20.7 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:53 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.5 | 20.5 | 20.7 | 20.7 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:53 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.1 | 20.1 | 20.7 | 20.7 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:53 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 20.0 | 20.0 | 20.7 | 20.7 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:53 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 19.9 | 19.9 | 20.7 | 20.7 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 05/07/2022 09:54 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.2 | 0.2 | 19.9 | 19.9 | 20.7 | 20.7 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH309 | 1 | 11.50 | 05/07/2022 09:57 | 1 | 1020 | Battery operated dipr | 6423 | | 2.76 | | 11.50 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH310 | 1 | 16.00 | 05/07/2022 09:59 | 1 | 1020 | Battery operated dipr | 6423 | | 4.26 | | 16.00 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH321 | 1 | 4.50 | 05/07/2022 10:37 | 1 | 1020 | Battery operated dipr | 6423 | | DRY | | 4.50 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH321 | 1 | 4.50 | 05/07/2022 10:31 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.3 | 9.3 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:31 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.5 | 9.5 | 13.3 | 13.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:31 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.6 | 9.6 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:32 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.7 | 9.7 | 12.4 | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:32 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.7 | 9.7 | 12.4 | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:32 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.7 | 9.7 | 12.4 | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:32 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.7 | 9.7 | 12.4 | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:33 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.7 | 9.7 | 12.4 | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:34 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 9.5 | 9.5 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:34 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 9.7 | 9.7 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:34 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.7 | 9.7 | 12.1 | 12.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:35 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.7 | 9.7 | 12.1 | 12.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:35 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.7 | 9.7 | 12.1 | 12.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:35 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.7 | 9.7 | 12.1 | 12.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 05/07/2022 10:36 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 9.7 | 9.7 | 12.1 | 12.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH322 | 1 | 5.80 | 05/07/2022 10:39 | 1 | 1020 | Battery operated dipr | 6423 | | 3.90 | | 5.80 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH323 | 1 | 1.70 | 05/07/2022 10:47 | 1 | 1020 | Battery operated dipr | 6423 | | DRY | | 1.70 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH323 | 1 | 1.70 | 05/07/2022 10:41 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.1 | 8.1 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:41 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.1 | 8.1 | 15.6 | 15.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:41 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.3 | 8.3 | 13.5 | 13.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:42 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:42 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:42 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:42 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:43 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.4 | 8.4 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:44 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.1 | 8.1 | 13.0 | 13.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:44 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.2 | 8.2 | 13.0 | 13.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH323 | 1 | 1.70 | 05/07/2022 10:44 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.3 | 8.3 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:45 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.3 | 8.3 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:45 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.3 | 8.3 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:45 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.3 | 8.3 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:45 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.3 | 8.3 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 05/07/2022 10:46 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 8.3 | 8.3 | 12.9 | 12.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS208 | 1 | 4.10 | 05/07/2022 10:49 | 1 | 1020 | Battery operated dipr | 6423 | | 1.62 | | 4.10 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH212 | 1 | 9.00 | 05/07/2022 10:51 | 1 | 1020 | Battery operated dipr | 6423 | | 3.51 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH307 | 1 | 2.50 | 05/07/2022 11:29 | 1 | 1020 | Battery operated dipr | 6423 | | DRY | | 2.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH307 | 1 | 2.50 | 05/07/2022 11:23 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.5 | 3.5 | 20.6 | 20.6 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:23 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.5 | 3.5 | 15.8 | 15.8 | 1.0 | 1.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:23 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.5 | 3.5 | 15.1 | 15.1 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:24 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.6 | 3.6 | 15.0 | 15.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:24 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.6 | 3.6 | 15.0 | 15.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:24 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.6 | 3.6 | 15.0 | 15.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:24 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.6 | 3.6 | 15.0 | 15.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:25 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.6 | 3.6 | 15.0 | 15.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH307 | 1 | 2.50 | 05/07/2022 11:26 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 15.7 | 15.7 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:26 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.1 | 3.1 | 15.6 | 15.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:26 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.0 | 3.0 | 15.6 | 15.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:27 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.0 | 3.0 | 15.5 | 15.5 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:27 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.0 | 3.0 | 15.5 | 15.5 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:27 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.0 | 3.0 | 15.5 | 15.5 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:27 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.0 | 3.0 | 15.5 | 15.5 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 05/07/2022 11:28 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.0 | 3.0 | 15.5 | 15.5 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| RE15 | 1 | 10.00 | 05/07/2022 11:31 | 1 | 1020 | Battery operated dipr | 6423 | | 3.45 | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH325 | 1 | 3.50 | 05/07/2022 12:09 | 1 | 1020 | Battery operated dipr | 6423 | | DRY | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH325 | 1 | 3.50 | 05/07/2022 12:03 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.8 | 0.8 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:03 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.8 | 0.8 | 19.0 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:03 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.9 | 0.9 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:04 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.9 | 0.9 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:04 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.9 | 0.9 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:04 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.9 | 0.9 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:04 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.9 | 0.9 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:05 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 0.9 | 0.9 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH325 | 1 | 3.50 | 05/07/2022 12:06 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:06 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 19.0 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:06 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:07 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:07 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:07 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 05/07/2022 12:08 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH214A | 1 | 4.00 | 05/07/2022 12:10 | 1 | 1020 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:18 | 1 | 1020 | Battery operated dipr | 6423 | | DRY | | 3.10 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:12 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.7 | 0.7 | 20.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:12 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.7 | 0.7 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:12 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.7 | 0.7 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:13 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.7 | 0.7 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:13 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.7 | 0.7 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:13 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.7 | 0.7 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:14 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.7 | 0.7 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:15 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 19.3 | 19.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:15 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:15 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:16 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:16 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:16 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH213 | 1 | 3.10 | 05/07/2022 12:17 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.5 | 0.5 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:44 | 1 | 1020 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:38 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.2 | 20.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:38 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:38 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:39 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:39 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:39 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:39 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:40 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:41 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:41 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:41 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:42 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:42 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:42 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:42 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 05/07/2022 12:43 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.1 | 0.1 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | Reading Type |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:18 | 1 | 1016 | Battery operated dipr | 6423 | | 10.50 | | 17.00 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:12 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 4.9 | 4.9 | 13.2 | 13.2 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:12 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.6 | 6.6 | 9.0 | 9.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:12 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.2 | 7.2 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:13 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.2 | 7.2 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:13 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.2 | 7.2 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:13 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.2 | 7.2 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:13 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.2 | 7.2 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.2 | 7.2 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:15 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.6 | 0.6 | 16.8 | 16.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:15 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:15 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.6 | 0.6 | 19.5 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:16 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.6 | 0.6 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:16 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.6 | 0.6 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:16 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.6 | 0.6 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:16 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.6 | 0.6 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 04/07/2022 12:17 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 0.6 | 0.6 | 19.7 | 19.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH105 | 1 | 9.50 | 04/07/2022 12:27 | 1 | 1016 | Battery operated dipr | 6423 | | 3.88 | | 9.50 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH313 | 1 | 8.00 | 04/07/2022 12:55 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 8.00 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH313 | 1 | 8.00 | 04/07/2022 12:49 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.8 | 2.8 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:49 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 15.6 | 15.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:49 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.0 | 3.0 | 15.2 | 15.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.0 | 3.0 | 15.2 | 15.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.0 | 3.0 | 15.2 | 15.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.0 | 3.0 | 15.2 | 15.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.0 | 3.0 | 15.2 | 15.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:51 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.0 | 3.0 | 15.2 | 15.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:52 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.8 | 2.8 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:52 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 15.4 | 15.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:52 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:53 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:53 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:53 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 04/07/2022 12:54 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.9 | 2.9 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH106 | 1 | 10.00 | 04/07/2022 12:57 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH211A | 1 | 10.50 | 04/07/2022 12:59 | 1 | 1016 | Battery operated dipr | 6423 | | 8.06 | | 10.50 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH210 | 1 | 19.60 | 04/07/2022 13:31 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 19.60 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH305 | 1 | 10.00 | 04/07/2022 13:39 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH305 | 1 | 10.00 | 04/07/2022 13:33 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.3 | 3.3 | 21.3 | 21.3 | 0.0 | 0.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:33 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.2 | 3.2 | 19.0 | 19.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:33 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.3 | 3.3 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:34 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.3 | 3.3 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:34 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.3 | 3.3 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:34 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.3 | 3.3 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:34 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.3 | 3.3 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:35 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 3.3 | 3.3 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:36 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.3 | 3.3 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:36 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.5 | 3.5 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:36 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.6 | 3.6 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:37 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.6 | 3.6 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:37 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.6 | 3.6 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:37 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.6 | 3.6 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 04/07/2022 13:38 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 3.6 | 3.6 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:47 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 13.00 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH208 | 1 | 13.00 | 04/07/2022 13:41 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 4.4 | 4.4 | 17.7 | 17.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:41 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.1 | 6.1 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:41 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 6.8 | 6.8 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:42 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.1 | 7.1 | 14.6 | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:42 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.2 | 7.2 | 14.6 | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:42 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.2 | 7.2 | 14.6 | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:42 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.2 | 7.2 | 14.6 | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:43 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.2 | 7.2 | 14.6 | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:44 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.5 | 2.5 | 15.6 | 15.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:44 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.5 | 2.5 | 18.3 | 18.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:44 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.5 | 2.5 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:45 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.5 | 2.5 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:45 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.5 | 2.5 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:45 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.5 | 2.5 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 04/07/2022 13:46 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 2.5 | 2.5 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH324 | 1 | 14.80 | 04/07/2022 13:49 | 1 | 1016 | Battery operated dipr | 6423 | | 11.86 | | 14.80 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_WS207 | 1 | 4.90 | 04/07/2022 13:51 | 1 | 1016 | Battery operated dipr | 6423 | | 0.36 | | 4.90 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH306 | 1 | 5.60 | 05/07/2022 12:26 | 1 | 1020 | Battery operated dipr | 6423 | | 4.03 | | 5.60 | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH306 | 1 | 5.60 | 05/07/2022 12:20 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.1 | 8.1 | 16.4 | 16.4 | 1.0 | 1.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:20 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.3 | 8.3 | 11.1 | 11.1 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH306 | 1 | 5.60 | 05/07/2022 12:20 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.4 | 8.4 | 10.6 | 10.6 | 2.0 | 2.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:21 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.4 | 8.4 | 10.6 | 10.6 | 2.0 | 2.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:21 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.4 | 8.4 | 10.6 | 10.6 | 2.0 | 2.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:21 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.4 | 8.4 | 10.6 | 10.6 | 2.0 | 2.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:21 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.4 | 8.4 | 10.6 | 10.6 | 2.0 | 2.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:22 | 1 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.4 | 8.4 | 10.6 | 10.6 | 2.0 | 2.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH306 | 1 | 5.60 | 05/07/2022 12:23 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 7.9 | 7.9 | 11.0 | 11.0 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:23 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.2 | 8.2 | 10.7 | 10.7 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:23 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.3 | 8.3 | 10.7 | 10.7 | 1.0 | 1.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:24 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.3 | 8.3 | 10.7 | 10.7 | 1.0 | 1.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:24 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.3 | 8.3 | 10.7 | 10.7 | 1.0 | 1.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:24 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.3 | 8.3 | 10.7 | 10.7 | 1.0 | 1.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:24 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.3 | 8.3 | 10.7 | 10.7 | 1.0 | 1.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 05/07/2022 12:25 | 2 | 1020 | | | | | | | GA5000 | G501278 | 13.0 | 0 | 0 | 0.0 | 0.0 | 8.3 | 8.3 | 10.7 | 10.7 | 1.0 | 1.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312 | 1 | 4.00 | 05/07/2022 12:48 | 1 | 1020 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |

# LIST OF MONITORING VISIT ENVIRONMENTAL WATER SAMPLES

Contract No. 326R
Contract Name Manc Vic North

Client: BAM Ritchies
Engineer: Imtiyaaz Patel

YOUR SAFETY IS MY SAFETY

| Sample Details | | | | | | | Environmental Container Barcodes | | | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location ID | Top Depth mbgl | Reference | Type | ID | Base Depth mbgl | Date Time Sampled | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| BH201 | 7.60 | GWBH-BH201 7.60 | W | GWBH-BH201 7.60 | 8.00 | 04/07/2022 09:05 | | | | | | | | | |
| BH205 | 8.50 | GWBH-BH205 8.50 | W | GWBH-BH205 8.50 | 10.50 | 04/07/2022 09:49 | | | | | | | | | |
| BH303 | 10.72 | GWBH-BH303 10.72 | W | GWBH-BH303 10.72 | 12.70 | 04/07/2022 11:04 | | | | | | | | | |
| BH202 | 8.70 | GWBH-BH202 8.70 | W | GWBH-BH202 8.70 | 9.00 | 04/07/2022 11:31 | | | | | | | | | |
| BH103 | 3.10 | GWBH-BH103 3.10 | W | GWBH-BH103 3.10 | 3.50 | 04/07/2022 11:54 | | | | | | | | | |
| BH105 | 5.10 | GWBH-BH105 5.10 | W | GWBH-BH105 5.10 | 9.50 | 04/07/2022 12:47 | | | | | | | | | |
| BH211A | 9.10 | GWBH-BH211A 9.10 | W | GWBH-BH211A 9.10 | 10.50 | 04/07/2022 13:29 | | | | | | | | | |
| BH102 | 3.40 | GWBH-BH102 3.40 | W | GWBH-BH102 3.40 | 6.50 | 04/07/2022 14:37 | | | | | | | | | |
| BH204 | 3.10 | GWBH-BH204 3.10 | W | GWBH-BH204 3.10 | 10.00 | 05/07/2022 08:37 | | | | | | | | | |
| BH203 | 12.32 | GWBH-BH203 12.32 | W | GWBH-BH203 12.32 | 24.00 | 05/07/2022 09:09 | | | | | | | | | |
| BH315 | 11.44 | GWBH-BH315 11.44 | W | GWBH-BH315 11.44 | 12.50 | 05/07/2022 09:47 | | | | | | | | | |
| BH310 | 4.43 | GWBH-BH310 4.43 | W | GWBH-BH310 4.43 | 16.00 | 05/07/2022 10:29 | | | | | | | | | |
| BH212 | 3.48 | GWBH-BH212 3.48 | W | GWBH-BH212 3.48 | 9.00 | 05/07/2022 11:21 | | | | | | | | | |
| RE15 | 3.55 | GWBH-RE15 3.55 | W | GWBH-RE15 3.55 | 10.00 | 05/07/2022 12:01 | | | | | | | | | |
| BH306 | 4.91 | GWBH-BH306 4.91 | W | GWBH-BH306 4.91 | 5.60 | 05/07/2022 12:36 | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

# RESULTS OF MULTI-METER WATER READINGS

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? NO

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Details | | | Temp | Actual Conductivity | Specific Conductivity | Total Disolved Solids | Resistivity | Density | Turbidity | pH | ORP | RDO Concentration | RDO Saturation | Oxygen Partial Pressure | Remarks | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | Well volumes pumped | | | | | | | | | | | | | Weather | Contractor | Remark |
| | | mbgl | | | bar | | | | degC | µS/cm | µS/cm | ppt | Ω·cm | g/cm³ | NTU | - | mV | mg/L | %sat | Torr | | | |
| BH201 | 1 | 8.00 | 04/07/2022 08:45 | 1 | 1016 | | | 1 | 11.2 | | 916 | | | | | 7.16 | 137.3 | | 25.1 | | | | |
| BH201 | 1 | 8.00 | 04/07/2022 08:55 | 1 | 1016 | | | 2 | 11.3 | | 912 | | | | | 7.15 | 24.8 | | 23.4 | | | | |
| BH201 | 1 | 8.00 | 04/07/2022 09:05 | 1 | 1016 | | | 3 | 11.6 | | 903 | | | | | 7.16 | -42.6 | | 40.3 | | | | |
| BH205 | 1 | 10.50 | 04/07/2022 09:29 | 1 | 1016 | | | 1 | 11 | | 835 | | | | | 7.35 | 109.4 | | 64.4 | | | | |
| BH205 | 1 | 10.50 | 04/07/2022 09:39 | 1 | 1016 | | | 2 | 10.9 | | 914 | | | | | 7.27 | -13.2 | | 37.6 | | | | |
| BH205 | 1 | 10.50 | 04/07/2022 09:49 | 1 | 1016 | | | 3 | 11 | | 1007 | | | | | 7.23 | -26 | | 26.7 | | | | |
| BH303 | 1 | 12.70 | 04/07/2022 10:44 | 1 | 1016 | | | 1 | 12.7 | | 1476 | | | | | 7.21 | 10.6 | | 22.4 | | | | |
| BH303 | 1 | 12.70 | 04/07/2022 10:54 | 1 | 1016 | | | 2 | 12.7 | | 1561 | | | | | 7.24 | 18.2 | | 28.7 | | | | |
| BH303 | 1 | 12.70 | 04/07/2022 11:04 | 1 | 1016 | | | 3 | 12.6 | | 1559 | | | | | 7.29 | 34.9 | | 27.4 | | | | |
| BH202 | 1 | 9.00 | 04/07/2022 11:21 | 1 | 1016 | | | 1 | 11.5 | | 1225 | | | | | 7.49 | -42.2 | | 22.7 | | | | |
| BH202 | 1 | 9.00 | 04/07/2022 11:31 | 1 | 1016 | | | 2 | 11.3 | | 1212 | | | | | 7.44 | -47.7 | | 27.1 | | | | |
| BH103 | 1 | 3.50 | 04/07/2022 11:44 | 1 | 1016 | | | 1 | 11.6 | | 1352 | | | | | 6.93 | -41.5 | | 14.9 | | | | |
| BH103 | 1 | 3.50 | 04/07/2022 11:54 | 1 | 1016 | | | 2 | 11.7 | | 1327 | | | | | 6.99 | -37.5 | | 16.4 | | | | |
| BH105 | 1 | 9.50 | 04/07/2022 12:37 | 1 | 1016 | | | 1 | 11.6 | | 814 | | | | | 7.07 | 50.2 | | 40.1 | | | | |
| BH105 | 1 | 9.50 | 04/07/2022 12:47 | 1 | 1016 | | | 2 | 12 | | 828 | | | | | 7.03 | 53.9 | | 38.7 | | | | bottom of hole dipping at 5.8m |
| BH211A | 1 | 10.50 | 04/07/2022 13:09 | 1 | 1016 | | | 1 | 12.8 | | 1244 | | | | | 7.25 | -129.1 | | 2.3 | | | | |
| BH211A | 1 | 10.50 | 04/07/2022 13:19 | 1 | 1016 | | | 2 | 12.7 | | 1177 | | | | | 7.24 | -155.9 | | 0.5 | | | | |
| BH211A | 1 | 10.50 | 04/07/2022 13:29 | 1 | 1016 | | | 3 | 13.1 | | 1116 | | | | | 7.31 | -29.4 | | 0 | | | | |
| BH102 | 1 | 6.50 | 04/07/2022 14:17 | 1 | 1016 | | | 1 | 11.6 | | 1264 | | | | | 7 | -97.4 | | 12 | | | | |
| BH102 | 1 | 6.50 | 04/07/2022 14:27 | 1 | 1016 | | | 2 | 11.4 | | 1274 | | | | | 7 | -103.5 | | 10.3 | | | | |
| BH102 | 1 | 6.50 | 04/07/2022 14:37 | 1 | 1016 | | | 3 | 11.4 | | 1283 | | | | | 7.01 | -104.6 | | 12.9 | | | | |
| BH204 | 1 | 10.00 | 05/07/2022 08:17 | 1 | 1020 | | | 1 | 11.8 | | 922 | | | | | 7.29 | -106.4 | | 21.6 | | | | |
| BH204 | 1 | 10.00 | 05/07/2022 08:27 | 1 | 1020 | | | 2 | 11.7 | | 919 | | | | | 7.32 | -105.6 | | 21.7 | | | | |
| BH204 | 1 | 10.00 | 05/07/2022 08:37 | 1 | 1020 | | | 3 | 11.6 | | 925 | | | | | 7.31 | -108.2 | | 19.8 | | | | |
| BH203 | 1 | 24.00 | 05/07/2022 08:49 | 1 | 1020 | | | 1 | 11.7 | | 686 | | | | | 7.49 | -132.6 | | 25.2 | | | | |
| BH203 | 1 | 24.00 | 05/07/2022 08:59 | 1 | 1020 | | | 2 | 11.8 | | 686 | | | | | 7.49 | -133.2 | | 32.7 | | | | |
| BH203 | 1 | 24.00 | 05/07/2022 09:09 | 1 | 1020 | | | 3 | 11.7 | | 691 | | | | | 7.47 | -138.7 | | 34.6 | | | | |
| BH315 | 1 | 12.50 | 05/07/2022 09:27 | 1 | 1020 | | | 1 | 11.7 | | 1316 | | | | | 7.23 | -134.8 | | 1.5 | | | | |
| BH315 | 1 | 12.50 | 05/07/2022 09:37 | 1 | 1020 | | | 2 | 11.6 | | 1243 | | | | | 7.25 | -143.8 | | 0.9 | | | | |
| BH315 | 1 | 12.50 | 05/07/2022 09:47 | 1 | 1020 | | | 3 | 11.6 | | 1157 | | | | | 7.25 | -138.5 | | 1.4 | | | | |
| BH310 | 1 | 16.00 | 05/07/2022 10:09 | 1 | 1020 | | | 1 | 11.4 | | 566 | | | | | 7.58 | -118.2 | | 19.2 | | | | |
| BH310 | 1 | 16.00 | 05/07/2022 10:19 | 1 | 1020 | | | 2 | 11.4 | | 568 | | | | | 7.58 | -124.7 | | 19.9 | | | | |
| BH310 | 1 | 16.00 | 05/07/2022 10:29 | 1 | 1020 | | | 3 | 11.4 | | 566 | | | | | 7.58 | -123.7 | | 17.7 | | | | |
| BH212 | 1 | 9.00 | 05/07/2022 11:01 | 1 | 1020 | | | 1 | 12.6 | | 699 | | | | | 6.89 | 231.3 | | 30.9 | | | | |
| BH212 | 1 | 9.00 | 05/07/2022 11:11 | 1 | 1020 | | | 2 | 12.5 | | 844 | | | | | 6.79 | 268.4 | | 29.8 | | | | |
| BH212 | 1 | 9.00 | 05/07/2022 11:21 | 1 | 1020 | | | 3 | 12.5 | | 853 | | | | | 6.77 | 261.1 | | 27.1 | | | | |
| RE15 | 1 | 10.00 | 05/07/2022 11:41 | 1 | 1020 | | | 1 | 12.6 | | 1154 | | | | | 6.87 | 87 | | 31.3 | | | | |
| RE15 | 1 | 10.00 | 05/07/2022 11:51 | 1 | 1020 | | | 2 | 12.5 | | 1164 | | | | | 6.88 | 26.9 | | 26.9 | | | | |
| RE15 | 1 | 10.00 | 05/07/2022 12:01 | 1 | 1020 | | | 3 | 12.2 | | 1179 | | | | | 6.87 | 19.4 | | 19.4 | | | | |
| BH306 | 1 | 5.60 | 05/07/2022 12:36 | 1 | 1020 | | | 1 | 13.1 | | 1265 | | | | | 6.93 | 106.6 | | 25.4 | | | | was only able to obtain 1 volume bottom dipping at 5.29m |
| | | | | | | | | | | | | | | | | | | | | | | | |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No.: 326R
Contract Name: Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 peak | LEL CH4 s/s | CH4 peak | CH4 s/s | CO2 peak | CO2 s/s | O2 peak | O2 s/s | H2S peak | H2S s/s | CO peak | CO s/s | Flow peak | Flow s/s | Diff. Pressure | Serial | PID peak | PID s/s | Weather | Contractor | Remark | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:06 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 5.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:00 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 15.1 | 18.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:00 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.3 | 7.3 | 5.6 | 5.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:00 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 4.2 | 4.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 4.3 | 4.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 4.0 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 3.5 | 3.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 3.5 | 3.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 3.5 | 3.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:03 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 9.7 | 9.7 | 7.3 | 7.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.10 | 0.10 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:03 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 9.7 | 9.7 | 7.3 | 7.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.20 | 0.20 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:03 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 9.7 | 9.7 | 7.3 | 7.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:03 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 9.5 | 9.5 | 4.5 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 9.5 | 9.5 | 4.5 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 8.7 | 8.7 | 4.5 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 8.7 | 8.7 | 4.2 | 4.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 5.00 | 18/07/2022 08:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 8.7 | 8.7 | 4.2 | 4.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH101 | 1 | 8.00 | 18/07/2022 08:15 | 1 | 1016 | Battery operated dipr | 6423 | | 5.84 | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:10 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 10.9 | 10.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:10 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 10.9 | 10.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:10 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 14.9 | 14.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:11 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 14.9 | 14.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:11 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.9 | 1.9 | 15.2 | 15.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:11 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.9 | 1.9 | 15.2 | 15.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:11 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.9 | 1.9 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:12 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.9 | 1.9 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:12 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 16.1 | 16.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:12 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 0.5 | 0.5 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:12 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 0.4 | 0.4 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:13 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 0.4 | 0.4 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:13 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 0.3 | 0.3 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:13 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 0.3 | 0.3 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:13 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 0.3 | 0.3 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH201 | 1 | 8.00 | 18/07/2022 08:14 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 0.3 | 0.3 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 18/07/2022 08:19 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 1.30 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_WS201B | 1 | 1.30 | 18/07/2022 08:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.8 | 1.8 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 18/07/2022 08:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.8 | 1.8 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 18/07/2022 08:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.8 | 1.8 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 18/07/2022 08:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.8 | 1.8 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 18/07/2022 08:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.8 | 1.8 | 18.0 | 18.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 18/07/2022 08:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.8 | 1.8 | 18.0 | 18.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 18/07/2022 08:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.8 | 1.8 | 18.0 | 18.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_WS201B | 1 | 1.30 | 18/07/2022 08:21 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.8 | 1.8 | 18.0 | 18.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:30 | 1 | 1016 | Battery operated dipr | 6423 | | 3.36 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | | Water Only |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:30 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 24 | 24 | 1.2 | 1.2 | 1.1 | 1.1 | 20.3 | 20.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:30 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 24 | 24 | 1.2 | 1.2 | 1.1 | 1.1 | 20.2 | 20.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:30 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 24 | 24 | 1.2 | 1.2 | 1.1 | 1.1 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 24 | 24 | 1.2 | 1.2 | 1.1 | 1.1 | 19.6 | 19.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 24 | 24 | 1.2 | 1.2 | 1.1 | 1.1 | 19.1 | 19.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 24 | 24 | 1.2 | 1.2 | 1.1 | 1.1 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 24 | 24 | 1.2 | 1.2 | 1.1 | 1.1 | 15.8 | 15.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:32 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 24 | 24 | 1.2 | 1.2 | 1.1 | 1.1 | 15.2 | 15.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:32 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 22 | 22 | 1.1 | 1.1 | 1.1 | 1.1 | 15.2 | 15.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:32 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 22 | 22 | 1.1 | 1.1 | 0.9 | 0.9 | 15.2 | 15.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:32 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 22 | 22 | 1.1 | 1.1 | 0.8 | 0.8 | 15.2 | 15.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 22 | 22 | 1.1 | 1.1 | 1.1 | 1.1 | 15.2 | 15.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 22 | 22 | 1.1 | 1.1 | 1.6 | 1.6 | 15.2 | 15.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 22 | 22 | 1.1 | 1.1 | 3.3 | 3.3 | 15.2 | 15.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 22 | 22 | 1.1 | 1.1 | 3.8 | 3.8 | 15.2 | 15.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH202 | 1 | 9.00 | 18/07/2022 13:34 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 22 | 22 | 1.1 | 1.1 | 4.5 | 4.5 | 15.2 | 15.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 18/07/2022 08:50 | 1 | 1016 | Battery operated dipr | 6423 | | 3.28 | | 6.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH206 | 1 | 6.00 | 18/07/2022 08:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.3 | 0.3 | 17.9 | 17.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 18/07/2022 08:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 8.4 | 8.4 | 9.4 | 9.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 18/07/2022 08:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 8.5 | 8.5 | 9.2 | 9.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 18/07/2022 08:51 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 8.5 | 8.5 | 9.1 | 9.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 18/07/2022 08:51 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 8.5 | 8.5 | 9.1 | 9.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 18/07/2022 08:51 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 8.5 | 8.5 | 9.1 | 9.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 18/07/2022 08:52 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 8.5 | 8.5 | 9.1 | 9.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH206 | 1 | 6.00 | 18/07/2022 08:52 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 8.5 | 8.5 | 9.1 | 9.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH303 | 1 | 12.70 | 18/07/2022 08:59 | 1 | 1016 | Battery operated dipr | 6423 | | 8.00 | | 12.70 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH103 | 1 | 3.50 | 18/07/2022 08:48 | 1 | 1017 | Battery operated dipr | 6423 | | 2.57 | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH304 | 1 | 10.00 | 18/07/2022 09:19 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH304 | 1 | 10.00 | 18/07/2022 09:14 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:14 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:14 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 20.0 | 20.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:15 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:15 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.5 | 20.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:15 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.7 | 20.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:15 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.7 | 20.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH304 | 1 | 10.00 | 18/07/2022 09:16 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.7 | 20.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH304 | 1 | 10.00 | 18/07/2022 09:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:16 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:17 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:17 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:17 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:17 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 18/07/2022 09:18 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:12 | 1 | 1017 | Battery operated dipr | 6423 | | 12.78 | | 15.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:08 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:08 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:08 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.7 | 20.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:10 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.7 | 20.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEO_BH207 | 1 | 15.50 | 18/06/2022 09:10 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:10 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:10 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:11 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:11 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:11 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH207 | 1 | 15.50 | 18/07/2022 09:12 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:44 | 1 | 1016 | Battery operated dipr | 6423 | | 5.71 | | 6.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:40 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 18.3 | 18.3 | 0.0 | 0.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:40 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 16.6 | 16.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:40 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 16.2 | 16.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:41 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 16.2 | 16.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:41 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 16.2 | 16.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:41 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 16.2 | 16.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:42 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 16.2 | 16.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:42 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 19.2 | 19.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:42 | 1 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 16.2 | 16.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:42 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 19.2 | 19.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:42 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.7 | 20.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:42 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:43 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:43 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:43 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH102 | 1 | 6.50 | 18/07/2022 08:44 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 18/07/2022 08:26 | 2 | 1016 | Battery operated dipr | 6423 | | 6.23 | | 10.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH205 | 1 | 10.50 | 18/07/2022 08:26 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.3 | 1.3 | 18.1 | 18.1 | 0.0 | 0.0 | 4.0 | 4.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 18/07/2022 08:26 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.3 | 1.3 | 18.2 | 18.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 18/07/2022 08:26 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.3 | 1.3 | 18.2 | 18.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 18/07/2022 08:27 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.3 | 1.3 | 18.7 | 18.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 18/07/2022 08:27 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.3 | 1.3 | 19.3 | 19.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 18/07/2022 08:27 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.3 | 1.3 | 20.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 18/07/2022 08:27 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.3 | 1.3 | 20.7 | 20.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH205 | 1 | 10.50 | 18/07/2022 08:28 | 2 | 1016 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.3 | 1.3 | 20.8 | 20.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 18/07/2022 10:47 | 2 | 1017 | Battery operated dipr | 6423 | | 2.96 | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH204 | 1 | 10.00 | 18/07/2022 10:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 0.2 | 0.2 | 17.3 | 17.3 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 18/07/2022 10:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.3 | 20.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 18/07/2022 10:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 18/07/2022 10:44 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 18/07/2022 10:44 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 18/07/2022 11:44 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH204 | 1 | 10.00 | 18/07/2022 11:55 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.1 | 0.1 | 20.8 | 20.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH203 | 1 | 24.00 | 18/07/2022 10:49 | 1 | 1017 | Battery operated dipr | 6423 | | 12.29 | | 24.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH315 | 1 | 12.50 | 18/07/2022 10:55 | 1 | 1017 | Battery operated dipr | 6423 | | 9.98 | | 12.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH315 | 1 | 12.50 | 18/07/2022 10:49 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 1.6 | 1.6 | 16.3 | 16.3 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:49 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 1.5 | 1.5 | 14.6 | 14.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:49 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 1.5 | 1.5 | 14.5 | 14.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:50 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 1.5 | 1.5 | 14.5 | 14.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:50 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 1.5 | 1.5 | 14.5 | 14.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:50 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 1.5 | 1.5 | 14.5 | 14.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:52 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 1.5 | 1.5 | 14.5 | 14.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH315 | 1 | 12.50 | 18/07/2022 10:52 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 18.4 | 18.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:52 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:52 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:53 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:53 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 18/07/2022 10:53 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH315 | 1 | 12.50 | 18/07/2022 10:54 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:05 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 4.20 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH320 | 1 | 4.20 | 18/07/2022 10:59 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 14.7 | 14.7 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 10:59 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.8 | 3.8 | 14.6 | 14.6 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 10:59 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.8 | 3.8 | 14.2 | 14.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:00 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.8 | 3.8 | 14.2 | 14.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:00 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.8 | 3.8 | 14.2 | 14.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:00 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.8 | 3.8 | 14.2 | 14.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:00 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.8 | 3.8 | 14.2 | 14.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:01 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.8 | 3.8 | 14.2 | 14.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH320 | 1 | 4.20 | 18/07/2022 11:01 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 4.3 | 4.3 | 13.4 | 13.4 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:01 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 6.0 | 6.0 | 8.2 | 8.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:01 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 6.7 | 6.7 | 8.0 | 8.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:02 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 7.0 | 7.0 | 7.6 | 7.6 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:02 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 7.2 | 7.2 | 7.4 | 7.4 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:02 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 7.4 | 7.4 | 7.2 | 7.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:02 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 7.4 | 7.4 | 7.2 | 7.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 18/07/2022 11:03 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 7.4 | 7.4 | 7.2 | 7.2 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH310 | 1 | 16.00 | 18/07/2022 11:09 | 1 | 1017 | Battery operated dipr | 6423 | | 4.22 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH321 | 1 | 4.50 | 18/07/2022 11:32 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 4.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH321 | 1 | 4.50 | 18/07/2022 11:26 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 11.3 | 11.3 | 11.2 | 11.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:26 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 11.7 | 11.7 | 9.8 | 9.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:26 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 11.9 | 11.9 | 9.4 | 9.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:27 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 12.1 | 12.1 | 8.9 | 8.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:27 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 12.3 | 12.3 | 8.5 | 8.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:27 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 12.6 | 12.6 | 8.2 | 8.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:27 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 12.8 | 12.8 | 7.7 | 7.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:28 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 12.8 | 12.8 | 7.7 | 7.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH321 | 1 | 4.50 | 18/07/2022 11:28 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 11.4 | 11.4 | 9.7 | 9.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:28 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 11.5 | 11.5 | 9.9 | 9.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:28 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 11.5 | 11.5 | 9.9 | 9.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:29 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 11.5 | 11.5 | 9.9 | 9.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:29 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 11.5 | 11.5 | 9.9 | 9.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:29 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 11.5 | 11.5 | 9.9 | 9.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 18/07/2022 11:30 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 11.5 | 11.5 | 9.9 | 9.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH322 | 1 | 5.80 | 19/07/2022 11:35 | 1 | 1017 | Battery operated dipr | 6423 | | 3.99 | | 5.80 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH323 | 1 | 1.70 | 18/07/2022 11:46 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 1.70 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH323 | 1 | 1.70 | 18/07/2022 11:46 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 12.1 | 12.1 | 9.4 | 9.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:46 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 12.9 | 12.9 | 9.1 | 9.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:46 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 13.2 | 13.2 | 8.9 | 8.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:47 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 13.4 | 13.4 | 8.7 | 8.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:47 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 13.6 | 13.6 | 8.6 | 8.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:47 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 13.6 | 13.6 | 8.6 | 8.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:47 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 13.6 | 13.6 | 8.6 | 8.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:48 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 13.6 | 13.6 | 8.6 | 8.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH323 | 1 | 1.70 | 18/07/2022 11:48 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 12.2 | 12.2 | 9.8 | 9.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:48 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 12.3 | 12.3 | 9.7 | 9.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:48 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 12.5 | 12.5 | 9.5 | 9.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:49 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 12.8 | 12.8 | 9.1 | 9.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:49 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 13.1 | 13.1 | 8.9 | 8.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:49 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 13.1 | 13.1 | 8.9 | 8.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:49 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 13.1 | 13.1 | 8.9 | 8.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 18/07/2022 11:50 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 13.1 | 13.1 | 8.9 | 8.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH212 | 1 | 9.00 | 18/07/2022 12:15 | 1 | 1017 | Battery operated dipr | 6423 | | 3.52 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| RE15 | 1 | 10.00 | 18/07/2022 12:16 | 1 | 1017 | Battery operated dipr | 6423 | | 3.45 | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH307 | 1 | 2.50 | 18/07/2022 12:13 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 2.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH307 | 1 | 2.50 | 18/07/2022 12:08 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.8 | 7.8 | 10.6 | 10.6 | 2.0 | 2.0 | 4.0 | 4.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:08 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.9 | 7.9 | 9.6 | 9.6 | 2.0 | 2.0 | 5.0 | 5.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:08 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.9 | 7.9 | 9.6 | 9.6 | 2.0 | 2.0 | 5.0 | 5.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.9 | 7.9 | 9.6 | 9.6 | 2.0 | 2.0 | 5.0 | 5.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.9 | 7.9 | 9.6 | 9.6 | 2.0 | 2.0 | 5.0 | 5.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.9 | 7.9 | 9.6 | 9.6 | 2.0 | 2.0 | 5.0 | 5.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.9 | 7.9 | 9.6 | 9.6 | 2.0 | 2.0 | 5.0 | 5.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:10 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.9 | 7.9 | 9.6 | 9.6 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH307 | 1 | 2.50 | 18/07/2022 12:10 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 5.9 | 5.9 | 13.2 | 13.2 | 2.0 | 2.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:10 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 5.8 | 5.8 | 13.2 | 13.2 | 2.0 | 2.0 | 4.0 | 4.0 | 0.3 | 0.3 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:10 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 13.1 | 13.1 | 2.0 | 2.0 | 4.0 | 4.0 | 0.3 | 0.3 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:11 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 13.1 | 13.1 | 2.0 | 2.0 | 4.0 | 4.0 | 0.3 | 0.3 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:11 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 13.1 | 13.1 | 2.0 | 2.0 | 4.0 | 4.0 | 0.3 | 0.3 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:11 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 13.1 | 13.1 | 2.0 | 2.0 | 4.0 | 4.0 | 0.3 | 0.3 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 18/07/2022 12:12 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 13.1 | 13.1 | 2.0 | 2.0 | 4.0 | 4.0 | 0.3 | 0.3 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:19 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH325 | 1 | 3.50 | 18/07/2022 12:19 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 0.5 | 0.5 | 17.5 | 17.5 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:19 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.7 | 19.7 | 1.0 | 1.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:19 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.9 | 19.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:20 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.9 | 19.9 | 1.0 | 1.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH325 | 1 | 3.50 | 18/07/2022 12:20 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.9 | 19.9 | 1.0 | 1.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:20 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.9 | 19.9 | 1.0 | 1.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:20 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.9 | 19.9 | 1.0 | 1.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:21 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.9 | 19.9 | 1.0 | 1.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH325 | 1 | 3.50 | 18/07/2022 12:21 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.6 | 19.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:21 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.6 | 19.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:21 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.6 | 19.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:22 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.6 | 19.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:22 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.6 | 19.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:22 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.6 | 19.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:22 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.6 | 19.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 18/07/2022 12:23 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.6 | 19.6 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:32 | 1 | 1013 | Battery operated dipr | 6423 | | DRY | | 3.10 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH213 | 1 | 3.10 | 18/07/2022 12:29 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.2 | 19.2 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:29 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.2 | 19.2 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:29 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.2 | 19.2 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:30 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.2 | 19.2 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:30 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.2 | 19.2 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:30 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.2 | 19.2 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:30 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.2 | 19.2 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:31 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.2 | 19.2 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH213 | 1 | 3.10 | 18/07/2022 12:31 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 17.9 | 17.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:31 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 17.8 | 17.8 | 1.0 | 1.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:31 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 17.8 | 17.8 | 1.0 | 1.0 | 2.0 | 2.0 | 0.3 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:32 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 17.8 | 17.8 | 1.0 | 1.0 | 2.0 | 2.0 | 0.3 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:32 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 17.8 | 17.8 | 1.0 | 1.0 | 2.0 | 2.0 | 0.3 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:32 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 17.8 | 17.8 | 1.0 | 1.0 | 2.0 | 2.0 | 0.3 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 18/07/2022 12:33 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 17.8 | 17.8 | 1.0 | 1.0 | 2.0 | 2.0 | 0.3 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:51 | 1 | 1013 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:46 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 5.2 | 5.2 | 14.0 | 14.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:46 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.7 | 3.7 | 15.7 | 15.7 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:46 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.5 | 3.5 | 15.8 | 15.8 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:47 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.4 | 3.4 | 15.8 | 15.8 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:47 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.4 | 3.4 | 15.8 | 15.8 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:47 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.4 | 3.4 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:47 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.4 | 3.4 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:48 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.4 | 3.4 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:48 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.4 | 3.4 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:48 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.4 | 3.4 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:49 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.4 | 3.4 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:49 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.3 | 3.3 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:49 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.3 | 3.3 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:49 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.3 | 3.3 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH112 | 1 | 4.00 | 18/07/2022 12:50 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 3.3 | 3.3 | 15.9 | 15.9 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH309 | 1 | 11.50 | 18/07/2022 11:20 | 1 | 1017 | Battery operated dipr | 6423 | | 2.78 | | 11.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:30 | 1 | 1017 | Battery operated dipr | 6423 | | 12.43 | | 17.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:25 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.1 | 2.1 | 19.0 | 19.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:25 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 5.6 | 5.6 | 15.5 | 15.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:25 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 12.0 | 12.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:26 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 10.2 | 10.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:26 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 9.5 | 9.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:26 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 9.5 | 9.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:27 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 7.4 | 7.4 | 9.5 | 9.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:27 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.3 | 0.3 | 15.3 | 15.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:27 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.3 | 0.3 | 15.3 | 15.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:27 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 19.7 | 19.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:28 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 19.7 | 19.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:28 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:28 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH209 | 1 | 17.00 | 18/07/2022 09:29 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.1 | 21.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| 01_BH105 | 1 | 9.50 | 18/07/2022 09:36 | 1 | 1017 | Battery operated dipr | 6423 | | 3.64 | | 9.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH211A | 1 | 11.60 | 18/07/2022 09:42 | 1 | 1016 | Battery operated dipr | 6423 | | 8.36 | | 11.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| 01_BH106 | 1 | 11.30 | 18/07/2022 09:44 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 11.30 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH210 | 1 | 19.60 | 18/07/2022 09:46 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 19.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH214A | 1 | 5.00 | 18/07/2022 12:26 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 5.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH311B | 1 | 16.00 | 19/07/2022 08:56 | 1 | 1009 | Battery operated dipr | 6423 | | 8.47 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH311B | 1 | 16.00 | 19/07/2022 08:53 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 0.3 | 0.3 | 19.8 | 19.8 | 1.0 | 1.0 | 53.0 | 53.0 | -0.7 | -0.7 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 19/07/2022 08:53 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 0.4 | 0.4 | 19.2 | 19.2 | 1.0 | 1.0 | 155.0 | 155.0 | -1.0 | -1.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 19/07/2022 08:53 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 0.5 | 0.5 | 18.7 | 18.7 | 1.0 | 1.0 | 216.0 | 216.0 | -0.9 | -0.9 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 19/07/2022 08:54 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 18.4 | 18.4 | 1.0 | 1.0 | 263.0 | 263.0 | -0.8 | -0.8 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 19/07/2022 08:54 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 18.2 | 18.2 | 2.0 | 2.0 | 292.0 | 292.0 | -0.7 | -0.7 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 19/07/2022 08:54 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 18.1 | 18.1 | 2.0 | 2.0 | 320.0 | 320.0 | -0.6 | -0.6 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 19/07/2022 08:54 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 18.0 | 18.0 | 2.0 | 2.0 | 335.0 | 335.0 | -0.5 | -0.5 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 19/07/2022 08:55 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 0.7 | 0.7 | 18.0 | 18.0 | 2.0 | 2.0 | 356.0 | 356.0 | -0.4 | -0.4 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 19/07/2022 08:49 | 1 | 1009 | Battery operated dipr | 6423 | | dry | | 4.00 | | | | | | | | | | | | | | | | | | | | | | | | | |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | Reading Type |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH312A | 1 | 4.00 | 19/07/2022 08:45 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.3 | 0.3 | 20.5 | 20.5 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 19/07/2022 08:45 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.3 | 0.3 | 20.4 | 20.4 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 19/07/2022 08:46 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.3 | 0.3 | 20.3 | 20.3 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 19/07/2022 08:46 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.3 | 0.3 | 20.2 | 20.2 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 19/07/2022 08:46 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.1 | 20.1 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 19/07/2022 08:46 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.1 | 20.1 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 19/07/2022 08:47 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.0 | 20.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 19/07/2022 08:47 | 1 | 1009 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.0 | 20.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GE0_WS207 | 1 | 5.00 | 18/07/2022 09:20 | 1 | 1016 | Battery operated dipr | 6423 | | 0.34 | | 5.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH324 | 1 | 15.30 | 18/07/2022 10:25 | 1 | 1016 | Battery operated dipr | 6423 | | 11.90 | | 15.30 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH313 | 1 | 8.00 | 18/07/2022 09:44 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH313 | 1 | 8.00 | 18/07/2022 09:39 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.2 | 3.2 | 19.5 | 19.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:39 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.3 | 3.3 | 15.4 | 15.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:39 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 15.4 | 15.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 15.4 | 15.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 15.4 | 15.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 15.4 | 15.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:40 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 15.4 | 15.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:41 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 15.4 | 15.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH313 | 1 | 8.00 | 18/07/2022 09:41 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 15.6 | 15.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:41 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:41 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:42 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:42 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:42 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 18/07/2022 09:43 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:49 | 1 | 1007 | Battery operated dipr | 6423 | | 9.70 | | 12.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH314 | 1 | 12.00 | 19/07/2022 10:44 | 1 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 934 | 934 | 46.7 | 46.7 | 33.6 | 33.6 | 2.2 | 2.2 | 0.0 | 0.0 | 3.0 | 3.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:44 | 1 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 938 | 938 | 46.9 | 46.9 | 34.6 | 34.6 | 2.0 | 2.0 | 0.0 | 0.0 | 3.0 | 3.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:44 | 1 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 940 | 940 | 47.0 | 47.0 | 35.9 | 35.9 | 1.0 | 1.0 | 0.0 | 0.0 | 3.0 | 3.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:45 | 1 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 980 | 980 | 49.0 | 49.0 | 36.2 | 36.2 | 0.3 | 0.3 | 0.0 | 0.0 | 3.0 | 3.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:45 | 1 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 982 | 982 | 49.1 | 49.1 | 36.2 | 36.2 | 0.3 | 0.3 | 0.0 | 0.0 | 3.0 | 3.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:45 | 1 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 982 | 982 | 49.1 | 49.1 | 36.2 | 36.2 | 0.3 | 0.3 | 0.0 | 0.0 | 3.0 | 3.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:45 | 1 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 982 | 982 | 49.1 | 49.1 | 36.2 | 36.2 | 0.3 | 0.3 | 0.0 | 0.0 | 3.0 | 3.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:46 | 1 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 982 | 982 | 49.1 | 49.1 | 36.2 | 36.2 | 0.3 | 0.3 | 0.0 | 0.0 | 3.0 | 3.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH314 | 1 | 12.00 | 19/07/2022 10:46 | 2 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 662 | 662 | 33.1 | 33.1 | 24.1 | 24.1 | 4.9 | 4.9 | 0.0 | 0.0 | 2.0 | 2.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:46 | 2 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 662 | 662 | 33.1 | 33.1 | 24.0 | 24.0 | 4.8 | 4.8 | 0.0 | 0.0 | 2.0 | 2.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:46 | 2 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 662 | 662 | 33.1 | 33.1 | 23.9 | 23.9 | 4.8 | 4.8 | 0.0 | 0.0 | 2.0 | 2.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:47 | 2 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 662 | 662 | 33.1 | 33.1 | 23.9 | 23.9 | 4.8 | 4.8 | 0.0 | 0.0 | 2.0 | 2.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:47 | 2 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 660 | 660 | 33.0 | 33.0 | 23.9 | 23.9 | 4.8 | 4.8 | 0.0 | 0.0 | 2.0 | 2.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:47 | 2 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 660 | 660 | 33.0 | 33.0 | 23.9 | 23.9 | 4.8 | 4.8 | 0.0 | 0.0 | 2.0 | 2.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 19/07/2022 10:48 | 2 | 1007 | | | | | | | GA5000 | G501278 | 32.0 | 640 | 640 | 32.0 | 32.0 | 23.9 | 23.9 | 4.8 | 4.8 | 0.0 | 0.0 | 2.0 | 2.0 | -0.2 | -0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 18/07/2022 13:07 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 19.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH305 | 1 | 10.00 | 18/07/2022 09:59 | 1 | 1017 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH305 | 1 | 10.00 | 18/07/2022 09:54 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 20.5 | 20.5 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:54 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.8 | 19.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:54 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:55 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:55 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:55 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:56 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH305 | 1 | 10.00 | 18/07/2022 09:56 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 20.5 | 20.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:56 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.8 | 19.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:56 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:57 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:57 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:57 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 18/07/2022 09:58 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 2.0 | 2.0 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH208 | 1 | 13.00 | 18/07/2022 10:13 | 1 | 1017 | Battery operated dipr | 6423 | | 11.99 | | 13.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH208 | 1 | 13.00 | 18/07/2022 10:08 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 5.8 | 5.8 | 18.4 | 18.4 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:08 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 6.6 | 6.6 | 16.0 | 16.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:08 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 6.9 | 6.9 | 15.8 | 15.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 6.9 | 6.9 | 15.8 | 15.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 6.9 | 6.9 | 15.8 | 15.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:09 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 6.9 | 6.9 | 15.8 | 15.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:10 | 1 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 6.9 | 6.9 | 15.8 | 15.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH208 | 1 | 13.00 | 18/07/2022 10:10 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.2 | 1.2 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:10 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.2 | 1.2 | 20.0 | 20.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:10 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.2 | 1.2 | 20.0 | 20.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:11 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.2 | 1.2 | 20.0 | 20.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:11 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.2 | 1.2 | 20.0 | 20.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 18/07/2022 10:11 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.2 | 1.2 | 20.0 | 20.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH208 | 1 | 13.00 | 18/07/2022 10:12 | 2 | 1017 | | | | | | | GA5000 | G501278 | 32.0 | 20 | 20 | 1.0 | 1.0 | 1.2 | 1.2 | 20.0 | 20.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:42 | 1 | 1013 | Battery operated dipn | 6423 | | 4.09 | | 5.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH306 | 1 | 5.60 | 18/07/2022 12:37 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.1 | 8.1 | 14.9 | 14.9 | 1.0 | 1.0 | 6.0 | 6.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:37 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.9 | 10.9 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:37 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.8 | 10.8 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:38 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.8 | 10.8 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:38 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.8 | 10.8 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:38 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.8 | 10.8 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:38 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.8 | 10.8 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:39 | 1 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.8 | 10.8 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:39 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.6 | 10.6 | 1.0 | 1.0 | 4.0 | 4.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:39 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.3 | 10.3 | 1.0 | 1.0 | 4.0 | 4.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:39 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.3 | 10.3 | 1.0 | 1.0 | 4.0 | 4.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:40 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.3 | 10.3 | 1.0 | 1.0 | 4.0 | 4.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:40 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.3 | 10.3 | 1.0 | 1.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:40 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.3 | 10.3 | 1.0 | 1.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:40 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.3 | 10.3 | 1.0 | 1.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 18/07/2022 12:41 | 2 | 1013 | | | | | | | GA5000 | G501278 | 32.0 | 16 | 16 | 0.8 | 0.8 | 8.3 | 8.3 | 10.3 | 10.3 | 1.0 | 1.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.31 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

bam ritchies

YOUR SAFETY IS MY SAFETY

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

| Location | Point ID | Depth (mbgl) | Date Time | Reading Ref | Atm. Pressure (bar) | Water monitoring Method | Water monitoring Serial | LNAPL (mbgl) | Water (mbgl) | DNAPL (mbgl) | Base of install (mbgl) | Gas monitoring Method | Gas monitoring Serial | Atm. Temp. (degC) | LEL CH4 peak (%LEL) | LEL CH4 s/s (%LEL) | CH4 peak (%vol) | CH4 s/s (%vol) | CO2 peak (%vol) | CO2 s/s (%vol) | O2 peak (%vol) | O2 s/s (%vol) | H2S peak (ppm) | H2S s/s (ppm) | CO peak (ppm) | CO s/s (ppm) | Flow peak (l/hr) | Flow s/s (l/hr) | Diff. Pressure (mbar) | Photoionization detector Serial | PID peak (ppmv) | PID s/s (ppmv) | Weather | Contractor | Remark | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BH101 | 1 | 5.00 | 01/08/2022 08:20 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 5.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH101 | 1 | 5.00 | 01/08/2022 08:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.3 | 6.3 | 19.0 | 19.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.4 | 6.4 | 10.6 | 10.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.4 | 6.4 | 9.1 | 9.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.4 | 6.4 | 9.0 | 9.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.9 | 6.9 | 8.9 | 8.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.9 | 6.9 | 8.9 | 8.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.9 | 6.9 | 8.9 | 8.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:16 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.9 | 6.9 | 8.9 | 8.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:17 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 1 | 0.9 | 0.9 | 6.9 | 6.9 | 8.6 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:17 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.5 | 7.5 | 8.3 | 8.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:17 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.8 | 7.8 | 8.2 | 8.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.9 | 7.9 | 8.1 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.9 | 7.9 | 8.1 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.9 | 7.9 | 8.1 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.9 | 7.9 | 8.1 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH101 | 1 | 5.00 | 01/08/2022 08:19 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.9 | 7.9 | 8.1 | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:30 | 1 | 1016 | Battery operated dipr | 6423 | | 5.26 | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH201 | 1 | 8.00 | 01/08/2022 08:24 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.0 | 2.0 | 10.6 | 10.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:24 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.0 | 2.0 | 14.8 | 14.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:24 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.0 | 2.0 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:25 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.0 | 2.0 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:25 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.0 | 2.0 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:25 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.0 | 2.0 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:25 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.0 | 2.0 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:26 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.9 | 1.9 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:27 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 17.1 | 17.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:27 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:27 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:28 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:28 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:28 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:28 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH201 | 1 | 8.00 | 01/08/2022 08:29 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.4 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:44 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 1.30 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| WS201B | 1 | 1.30 | 01/08/2022 08:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 19.9 | 19.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.6 | 2.6 | 17.6 | 17.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.6 | 2.6 | 17.5 | 17.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:39 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.6 | 2.6 | 17.5 | 17.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:39 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.6 | 2.6 | 17.5 | 17.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:39 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.6 | 2.6 | 17.5 | 17.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:39 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.6 | 2.6 | 17.5 | 17.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:40 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.6 | 2.6 | 17.5 | 17.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:42 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:42 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:42 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:42 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS201B | 1 | 1.30 | 01/08/2022 08:43 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 17.7 | 17.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:06 | 1 | 1016 | Battery operated dipr | 6423 | | 5.80 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH202 | 1 | 9.00 | 01/08/2022 09:00 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.5 | 0.5 | 17.1 | 17.1 | 0.0 | 0.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:00 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 15.1 | 15.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:00 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.6 | 0.6 | 14.9 | 14.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:03 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.2 | 0.2 | 18.7 | 18.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:03 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.2 | 0.2 | 20.1 | 20.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:03 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.2 | 0.2 | 20.4 | 20.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.2 | 0.2 | 20.5 | 20.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.2 | 0.2 | 20.6 | 20.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.2 | 0.2 | 20.7 | 20.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.2 | 0.2 | 20.7 | 20.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH202 | 1 | 9.00 | 01/08/2022 09:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 0.2 | 0.2 | 20.7 | 20.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:21 | 1 | 1016 | Battery operated dipr | 6423 | | 3.27 | | 6.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH206 | 1 | 6.00 | 01/08/2022 09:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 8.7 | 8.7 | 16.9 | 16.9 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 8.9 | 8.9 | 9.5 | 9.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 9.0 | 9.0 | 8.8 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:16 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 9.1 | 9.1 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:16 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 9.1 | 9.1 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:16 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 9.1 | 9.1 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:16 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 9.1 | 9.1 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:17 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 16 | 16 | 0.8 | 0.8 | 9.1 | 9.1 | 8.7 | 8.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 20.5 | 20.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.9 | 19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:19 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.4 | 6.4 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:19 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.5 | 7.5 | 10.8 | 10.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth (mbgl) | Date Time | Reading Ref | Atm. Pressure (bar) | Method | Serial | LNAPL (mbgl) | Water (mbgl) | DNAPL (mbgl) | Base of install (mbgl) | Method | Serial | Atm. Temp. (degC) | LEL CH4 peak (%LEL) | LEL CH4 s/s (%LEL) | CH4 peak (%vol) | CH4 s/s (%vol) | CO2 peak (%vol) | CO2 s/s (%vol) | O2 peak (%vol) | O2 s/s (%vol) | H2S peak (ppm) | H2S s/s (ppm) | CO peak (ppm) | CO s/s (ppm) | Flow peak (l/hr) | Flow s/s (l/hr) | Diff. Pressure (mbar) | Serial | PID peak (ppmv) | PID s/s (ppmv) | Weather | Contractor | Remark | Reading Type |
| BH206 | 1 | 6.00 | 01/08/2022 09:19 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.5 | 7.5 | 10.8 | 10.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:19 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.5 | 7.5 | 10.8 | 10.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH206 | 1 | 6.00 | 01/08/2022 09:20 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.5 | 7.5 | 10.8 | 10.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH303 | 1 | 12.70 | 01/08/2022 09:29 | 1 | 1016 | Battery operated dipr | 6423 | | 8.05 | | 12.70 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH103 | 1 | 3.50 | 01/08/2022 09:10 | 1 | 1016 | Battery operated dipr | 6423 | | 2.81 | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH304 | 1 | 10.00 | 01/08/2022 10:25 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH304 | 1 | 10.00 | 01/08/2022 10:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 4.7 | 4.7 | 16.4 | 16.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.6 | 5.6 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:21 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.7 | 5.7 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:22 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.2 | 5.2 | 16.6 | 16.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:22 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.2 | 5.2 | 17.1 | 17.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:22 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 17.1 | 17.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:23 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 17.1 | 17.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:23 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 17.1 | 17.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:23 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 17.1 | 17.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:23 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 17.1 | 17.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH304 | 1 | 10.00 | 01/08/2022 10:24 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 17.1 | 17.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:43 | 1 | 1016 | Battery operated dipr | 6423 | | 12.77 | | 15.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH207 | 1 | 15.50 | 01/08/2022 09:37 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 17.9 | 17.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:37 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.3 | 0.3 | 21.3 | 21.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:37 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.3 | 0.3 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:39 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:40 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.7 | 21.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:40 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:40 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH207 | 1 | 15.50 | 01/08/2022 09:42 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.2 | 0.2 | 21.8 | 21.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:20 | 1 | 1016 | Battery operated dipr | 6423 | | 3.40 | | 6.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH102 | 1 | 6.50 | 01/08/2022 11:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.6 | 3.6 | 16.0 | 16.0 | 0.0 | 0.0 | 15.0 | 15.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.6 | 3.6 | 17.3 | 17.3 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:14 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.6 | 3.6 | 17.3 | 17.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.6 | 3.6 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.6 | 3.6 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.6 | 3.6 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:15 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.6 | 3.6 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:16 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.6 | 3.6 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:17 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 18.2 | 18.2 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:17 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.9 | 3.9 | 16.4 | 16.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:17 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.0 | 3.0 | 14.5 | 14.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.5 | 5.5 | 13.5 | 13.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 6.0 | 6.0 | 12.0 | 12.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 7.1 | 7.1 | 11.3 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:18 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 7.1 | 7.1 | 11.3 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH102 | 1 | 6.50 | 01/08/2022 11:19 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 7.1 | 7.1 | 11.3 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:51 | 1 | 1016 | Battery operated dipr | 6423 | | 6.30 | | 10.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH205 | 1 | 10.50 | 01/08/2022 08:45 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.1 | 1.1 | 17.9 | 17.9 | 0.0 | 0.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:45 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.3 | 1.3 | 17.4 | 17.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:45 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.4 | 1.4 | 17.7 | 17.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:46 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.4 | 1.4 | 17.6 | 17.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:46 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.4 | 1.4 | 17.6 | 17.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:46 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.4 | 1.4 | 17.6 | 17.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:46 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.4 | 1.4 | 17.6 | 17.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:47 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.4 | 1.4 | 17.6 | 17.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:48 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 18.6 | 18.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:48 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.5 | 0.5 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:48 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:49 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:49 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:49 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:49 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH205 | 1 | 10.50 | 01/08/2022 08:50 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.4 | 0.4 | 20.2 | 20.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 01/08/2022 11:32 | 2 | 1016 | Battery operated dipr | 6423 | | 3.15 | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH204 | 1 | 10.00 | 01/08/2022 11:29 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.2 | 10.2 | 16.6 | 16.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 01/08/2022 11:29 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.5 | 10.5 | 10.6 | 10.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 01/08/2022 11:29 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.6 | 10.6 | 10.3 | 10.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 01/08/2022 11:30 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.7 | 10.7 | 10.3 | 10.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 01/08/2022 11:30 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.6 | 10.6 | 10.2 | 10.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 01/08/2022 11:30 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.6 | 10.6 | 10.2 | 10.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 01/08/2022 11:30 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.6 | 10.6 | 10.2 | 10.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH204 | 1 | 10.00 | 01/08/2022 11:31 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.6 | 10.6 | 10.2 | 10.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 peak | LEL CH4 s/s | CH4 peak | CH4 s/s | CO2 peak | CO2 s/s | O2 peak | O2 s/s | H2S peak | H2S s/s | CO peak | CO s/s | Flow peak | Flow s/s | Diff. Pressure | Serial | PID peak | PID s/s | Weather | Contractor | Remark | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH203 | 1 | 24.00 | 01/08/2022 11:35 | 1 | 1016 | Battery operated dipr | 6423 | | 12.30 | | 24.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH315 | 1 | 12.50 | 01/08/2022 11:43 | 1 | 1016 | Battery operated dipr | 6423 | | 9.80 | | 12.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH315 | 1 | 12.50 | 01/08/2022 11:37 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 10.3 | 10.3 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:37 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 9.4 | 9.4 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:37 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 9.3 | 9.3 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 9.3 | 9.3 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 9.3 | 9.3 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 9.3 | 9.3 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:38 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 9.3 | 9.3 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:39 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 9.3 | 9.3 | 0.0 | 0.0 | 1.0 | 1.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:40 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.0 | 2.0 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:40 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.2 | 2.2 | 13.1 | 13.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:40 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.2 | 2.2 | 12.7 | 12.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:41 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH315 | 1 | 12.50 | 01/08/2022 11:42 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.3 | 2.3 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:52 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 4.20 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH320 | 1 | 4.20 | 01/08/2022 11:46 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.5 | 6.5 | 11.1 | 11.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:46 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.6 | 6.6 | 9.3 | 9.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:46 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.7 | 6.7 | 9.0 | 9.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:47 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.8 | 6.8 | 8.9 | 8.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:47 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.9 | 6.9 | 8.7 | 8.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:47 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.0 | 7.0 | 8.5 | 8.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:47 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.1 | 7.1 | 8.3 | 8.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:48 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.3 | 7.3 | 7.9 | 7.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:49 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 14.7 | 14.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:49 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.4 | 3.4 | 14.4 | 14.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:49 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.8 | 3.8 | 14.8 | 14.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:50 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 4.0 | 4.0 | 14.1 | 14.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:50 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 4.2 | 4.2 | 13.8 | 13.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:50 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 4.2 | 4.2 | 13.8 | 13.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:50 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 4.2 | 4.2 | 13.8 | 13.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH320 | 1 | 4.20 | 01/08/2022 11:51 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 4.2 | 4.2 | 13.8 | 13.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH309 | 1 | 11.50 | 01/08/2022 11:55 | 1 | 1016 | Battery operated dipr | 6423 | | 2.77 | | 11.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH310 | 1 | 16.00 | 01/08/2022 12:00 | 1 | 1016 | Battery operated dipr | 6423 | | 4.20 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH321 | 1 | 4.50 | 01/08/2022 12:08 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 4.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH321 | 1 | 4.50 | 01/08/2022 12:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.4 | 10.4 | 12.1 | 12.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.5 | 10.5 | 12.0 | 12.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.6 | 10.6 | 11.9 | 11.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:03 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 10.6 | 10.6 | 11.8 | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:03 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 10.7 | 10.7 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:03 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 11.0 | 11.0 | 11.3 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:03 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 11.0 | 11.0 | 11.3 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:04 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 2 | 2 | 0.1 | 0.1 | 11.0 | 11.0 | 11.3 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.4 | 10.4 | 11.5 | 11.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.3 | 10.3 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.3 | 10.3 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:06 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.3 | 10.3 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:06 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.3 | 10.3 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:06 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.3 | 10.3 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:06 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.3 | 10.3 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH321 | 1 | 4.50 | 01/08/2022 12:07 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.3 | 10.3 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH322 | 1 | 5.80 | 01/08/2022 12:15 | 1 | 1016 | Battery operated dipr | 6423 | | 3.92 | | 5.80 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH323 | 1 | 1.70 | 01/08/2022 12:25 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 1.70 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH323 | 1 | 1.70 | 01/08/2022 12:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 10.6 | 10.6 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 10.8 | 10.8 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:19 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.9 | 10.9 | 12.3 | 12.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 11.0 | 11.0 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 11.0 | 11.0 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 11.0 | 11.0 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:20 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 11.0 | 11.0 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:21 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 11.0 | 11.0 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:22 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 9.7 | 9.7 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:22 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 9.3 | 9.3 | 13.7 | 13.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:22 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 9.8 | 9.8 | 13.2 | 13.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:23 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.6 | 10.6 | 12.5 | 12.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:23 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.9 | 10.9 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:23 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.9 | 10.9 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:23 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.9 | 10.9 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH323 | 1 | 1.70 | 01/08/2022 12:24 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 10.9 | 10.9 | 12.2 | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| WS208 | 1 | 4.10 | 01/08/2022 12:29 | 1 | 1016 | Battery operated dipr | 6423 | | 1.70 | | 4.10 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH212 | 1 | 9.00 | 01/08/2022 12:42 | 1 | 1016 | Battery operated dipr | 6423 | | 3.43 | | 9.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH307 | 1 | 2.50 | 01/08/2022 12:41 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 2.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH307 | 1 | 2.50 | 01/08/2022 12:35 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.3 | 0.3 | 20.6 | 20.6 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:35 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 4.4 | 4.4 | 16.1 | 16.1 | 1.0 | 1.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:35 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 4.5 | 4.5 | 15.5 | 15.5 | 2.0 | 2.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:36 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 4.6 | 4.6 | 15.1 | 15.1 | 2.0 | 2.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:36 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 4.6 | 4.6 | 15.1 | 15.1 | 2.0 | 2.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:36 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 4.6 | 4.6 | 15.1 | 15.1 | 2.0 | 2.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:36 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 4.6 | 4.6 | 15.1 | 15.1 | 2.0 | 2.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

# RESULTS OF GROUNDWATER AND GAS MONITORING

YOUR SAFETY IS MY SAFETY

| Location | Point ID | Depth (mbgl) | Date Time | Reading Ref | Atm. Pressure (bar) | Method | Serial | LNAPL (mbgl) | Water (mbgl) | DNAPL (mbgl) | Base of install (mbgl) | Method | Serial | Atm. Temp. (degC) | LEL CH4 peak (%LEL) | LEL CH4 s/s (%LEL) | CH4 peak (%vol) | CH4 s/s (%vol) | CO2 peak (%vol) | CO2 s/s (%vol) | O2 peak (%vol) | O2 s/s (%vol) | H2S peak (ppm) | H2S s/s (ppm) | CO peak (ppm) | CO s/s (ppm) | Flow peak (l/hr) | Flow s/s (l/hr) | Diff. Pressure (mbar) | PID Serial | PID peak (ppmv) | PID s/s (ppmv) | Weather | Contractor | Remark | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BH307 | 1 | 2.50 | 01/08/2022 12:37 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 4.6 | 4.6 | 15.1 | 15.1 | 2.0 | 2.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:38 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 4.0 | 4.0 | 15.5 | 15.5 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:38 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.7 | 3.7 | 16.1 | 16.1 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:38 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.6 | 3.6 | 16.1 | 16.1 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:39 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.6 | 3.6 | 16.1 | 16.1 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:39 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.6 | 3.6 | 16.1 | 16.1 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:39 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.6 | 3.6 | 16.1 | 16.1 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:39 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.6 | 3.6 | 16.1 | 16.1 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH307 | 1 | 2.50 | 01/08/2022 12:40 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.6 | 3.6 | 16.1 | 16.1 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| RE15 | 1 | 10.00 | 01/08/2022 12:43 | 1 | 1016 | Battery operated dipr | 6423 | | 3.43 | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH325 | 1 | 3.50 | 01/08/2022 12:50 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 3.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH325 | 1 | 3.50 | 01/08/2022 12:44 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 17.0 | 17.0 | 1.0 | 1.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:44 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.7 | 18.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:44 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:45 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:45 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:45 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:45 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:46 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.8 | 18.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:47 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.7 | 18.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:47 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.5 | 18.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:47 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.5 | 18.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:48 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.5 | 18.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:48 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.5 | 18.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:48 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.5 | 18.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:48 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.5 | 18.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH325 | 1 | 3.50 | 01/08/2022 12:49 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.5 | 18.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH214A | 1 | 4.00 | 01/08/2022 12:52 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH213 | 1 | 3.10 | 01/08/2022 13:00 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 3.10 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH213 | 1 | 3.10 | 01/08/2022 12:54 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 19.2 | 19.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:54 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 19.4 | 19.4 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:54 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 19.5 | 19.5 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:55 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 19.6 | 19.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:55 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 19.6 | 19.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:55 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 19.6 | 19.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:55 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 19.6 | 19.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:56 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.6 | 19.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:57 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 19.3 | 19.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:57 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.3 | 18.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:57 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.1 | 18.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:58 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.1 | 18.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:58 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.1 | 18.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:58 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.1 | 18.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:58 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.1 | 18.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH213 | 1 | 3.10 | 01/08/2022 12:59 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 18.1 | 18.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:14 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH112 | 1 | 4.00 | 01/08/2022 13:08 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.2 | 3.2 | 14.9 | 14.9 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:08 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.2 | 3.2 | 16.6 | 16.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:08 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.2 | 3.2 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:09 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.2 | 3.2 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:09 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.2 | 3.2 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:09 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.2 | 3.2 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:09 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.2 | 3.2 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:10 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.2 | 3.2 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:11 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 17.0 | 17.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:11 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 16.9 | 16.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:11 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 16.9 | 16.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:12 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 16.9 | 16.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:12 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 16.9 | 16.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:12 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 16.9 | 16.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:12 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 16.9 | 16.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH112 | 1 | 4.00 | 01/08/2022 13:13 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 3.1 | 3.1 | 16.9 | 16.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:55 | 1 | 1016 | Battery operated dipr | 6423 | | 12.50 | | 17.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH209 | 1 | 17.00 | 01/08/2022 09:49 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 5.1 | 5.1 | 14.9 | 14.9 | 0.0 | 0.0 | 3.0 | 3.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:49 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 6.5 | 6.5 | 10.7 | 10.7 | 0.0 | 0.0 | 1.0 | 1.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:49 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.4 | 7.4 | 10.2 | 10.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.6 | 7.6 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 1.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.6 | 7.6 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.6 | 7.6 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 2.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.6 | 7.6 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 2.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:51 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 7.6 | 7.6 | 10.1 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 2.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:52 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.8 | 2.8 | 14.7 | 14.7 | 0.0 | 0.0 | 1.0 | 1.0 | -1.1 | -1.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:52 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.9 | 2.9 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | -1.3 | -1.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:52 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.9 | 2.9 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | -1.5 | -1.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:53 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.9 | 2.9 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:53 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.9 | 2.9 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:53 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.9 | 2.9 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:53 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.9 | 2.9 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH209 | 1 | 17.00 | 01/08/2022 09:54 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.9 | 2.9 | 15.3 | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH105 | 1 | 9.50 | 01/08/2022 10:03 | 1 | 1016 | Battery operated dipr | 6423 | | 3.78 | | 9.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH313 | 1 | 8.00 | 01/08/2022 10:11 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 8.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH313 | 1 | 8.00 | 01/08/2022 10:05 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.7 | 3.7 | 19.2 | 19.2 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH313 | 1 | 8.00 | 01/08/2022 10:05 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.7 | 3.7 | 16.1 | 16.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:05 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.7 | 3.7 | 16.1 | 16.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:06 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.7 | 3.7 | 16.1 | 16.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:06 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.7 | 3.7 | 16.1 | 16.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:06 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.7 | 3.7 | 16.1 | 16.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:07 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.7 | 3.7 | 16.1 | 16.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:08 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.6 | 3.6 | 15.9 | 15.9 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:08 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.7 | 3.7 | 15.7 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:08 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 15.7 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:09 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 15.7 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:09 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 15.7 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:09 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 15.7 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH313 | 1 | 8.00 | 01/08/2022 10:10 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 15.7 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 11:04 | 1 | 1016 | Battery operated dipr | 6423 | | 9.80 | | 12.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH314 | 1 | 12.00 | 01/08/2022 10:58 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 774 | 774 | 38.7 | 38.7 | 29.3 | 29.3 | 9.9 | 9.9 | 0.0 | 0.0 | 3.0 | 3.0 | -1.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 10:58 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 946 | 946 | 47.3 | 47.3 | 38.8 | 38.8 | 0.9 | 0.9 | 0.0 | 0.0 | 2.0 | 2.0 | -1.3 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 10:58 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 994 | 994 | 49.7 | 49.7 | 41.3 | 41.3 | 0.3 | 0.3 | 0.0 | 0.0 | 1.0 | 1.0 | -1.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 10:59 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 1002 | 1002 | 50.1 | 50.1 | 41.9 | 41.9 | 0.2 | 0.2 | 0.0 | 0.0 | 1.0 | 1.0 | -1.1 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 10:59 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 1002 | 1002 | 50.1 | 50.1 | 41.7 | 41.7 | 0.2 | 0.2 | 0.0 | 0.0 | 1.0 | 1.0 | -0.9 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 10:59 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 1002 | 1002 | 50.1 | 50.1 | 41.7 | 41.7 | 0.2 | 0.2 | 0.0 | 0.0 | 1.0 | 1.0 | -0.7 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 10:59 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 1002 | 1002 | 50.1 | 50.1 | 41.7 | 41.7 | 0.2 | 0.2 | 0.0 | 0.0 | 1.0 | 1.0 | -0.5 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 11:00 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 1002 | 1002 | 50.1 | 50.1 | 41.7 | 41.7 | 0.2 | 0.2 | 0.0 | 0.0 | 1.0 | 1.0 | -0.4 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 11:01 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 242 | 242 | 12.1 | 12.1 | 8.8 | 8.8 | 17.4 | 17.4 | 0.0 | 0.0 | 0.0 | 0.0 | -0.7 | -0.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 11:01 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 268 | 268 | 13.4 | 13.4 | 9.0 | 9.0 | 16.3 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | -1.2 | -1.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 11:01 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 322 | 322 | 16.1 | 16.1 | 10.9 | 10.9 | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | -1.3 | -1.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 11:02 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 332 | 332 | 16.6 | 16.6 | 11.6 | 11.6 | 14.7 | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | -1.2 | -1.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 11:02 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 384 | 384 | 19.2 | 19.2 | 13.4 | 13.4 | 13.6 | 13.6 | 0.0 | 0.0 | 0.0 | 0.0 | -1.2 | -1.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 11:02 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 422 | 422 | 21.1 | 21.1 | 15.0 | 15.0 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | -1.2 | -1.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 11:02 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 422 | 422 | 21.1 | 21.1 | 15.0 | 15.0 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | -1.2 | -1.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH314 | 1 | 12.00 | 01/08/2022 11:03 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 422 | 422 | 21.1 | 21.1 | 15.0 | 15.0 | 12.6 | 12.6 | 0.0 | 0.0 | 0.0 | 0.0 | -1.2 | -1.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH106 | 1 | 10.00 | 01/08/2022 10:55 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH211A | 1 | 10.50 | 01/08/2022 10:57 | 1 | 1016 | Battery operated dipr | 6423 | | 8.80 | | 10.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH210 | 1 | 19.60 | 01/08/2022 10:52 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 19.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH210 | 1 | 19.60 | 01/08/2022 10:49 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.5 | 1.5 | 13.2 | 13.2 | 0.0 | 0.0 | 4.0 | 4.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 01/08/2022 10:49 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.2 | 1.2 | 12.8 | 12.8 | 0.0 | 0.0 | 1.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 01/08/2022 10:49 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 1.0 | 1.0 | 13.9 | 13.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 01/08/2022 10:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 14.0 | 14.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 01/08/2022 10:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 15.4 | 15.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 01/08/2022 10:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 16.3 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 01/08/2022 10:50 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 16.8 | 16.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH210 | 1 | 19.60 | 01/08/2022 10:51 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.9 | 0.9 | 16.8 | 16.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:46 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 10.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH305 | 1 | 10.00 | 01/08/2022 10:40 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.4 | 2.4 | 19.6 | 19.6 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:40 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.5 | 2.5 | 19.0 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:40 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.5 | 2.5 | 18.9 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:41 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.5 | 2.5 | 18.9 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:41 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.5 | 2.5 | 18.9 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:41 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.5 | 2.5 | 18.9 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:42 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.5 | 2.5 | 18.9 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:43 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.4 | 2.4 | 19.0 | 19.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:43 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.4 | 2.4 | 19.0 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:43 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.4 | 2.4 | 19.0 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:44 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.4 | 2.4 | 19.0 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:44 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.4 | 2.4 | 19.0 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:44 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.4 | 2.4 | 19.0 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH305 | 1 | 10.00 | 01/08/2022 10:45 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 2.4 | 2.4 | 19.0 | 19.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:36 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 13.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH208 | 1 | 13.00 | 01/08/2022 10:30 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 4.9 | 4.9 | 17.3 | 17.3 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:30 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 6.1 | 6.1 | 16.2 | 16.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:30 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 6.0 | 6.0 | 16.4 | 16.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.6 | 5.6 | 16.9 | 16.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 6.5 | 6.5 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 6.5 | 6.5 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 6.5 | 6.5 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:32 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 6.5 | 6.5 | 16.1 | 16.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.9 | 0.9 | 18.8 | 18.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.9 | 0.9 | 20.3 | 20.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:33 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.5 | 0.5 | 21.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:34 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.4 | 0.4 | 21.4 | 21.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:34 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.3 | 0.3 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:34 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.3 | 0.3 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:34 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.3 | 0.3 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH208 | 1 | 13.00 | 01/08/2022 10:35 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.3 | 0.3 | 21.5 | 21.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH324 | 1 | 14.80 | 01/08/2022 10:28 | 1 | 1016 | Battery operated dipr | 6423 | | 11.85 | | 14.80 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| WS207 | 1 | 4.90 | 01/08/2022 10:27 | 1 | 1016 | Battery operated dipr | 6423 | | 0.32 | | 4.90 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH306 | 1 | 5.60 | 01/08/2022 13:07 | 1 | 1016 | Battery operated dipr | 6423 | | 4.09 | | 5.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH306 | 1 | 5.60 | 01/08/2022 13:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.8 | 0.8 | 17.1 | 17.1 | 0.0 | 0.0 | 3.0 | 3.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.1 | 9.1 | 11.7 | 11.7 | 2.0 | 2.0 | 4.0 | 4.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| BH306 | 1 | 5.60 | 01/08/2022 13:01 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.2 | 9.2 | 11.0 | 11.0 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.2 | 9.2 | 11.0 | 11.0 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.2 | 9.2 | 11.0 | 11.0 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.2 | 9.2 | 11.0 | 11.0 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:02 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.2 | 9.2 | 11.0 | 11.0 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:03 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.2 | 9.2 | 11.0 | 11.0 | 2.0 | 2.0 | 5.0 | 5.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 8.8 | 8.8 | 11.3 | 11.3 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.1 | 9.1 | 11.0 | 11.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:04 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.1 | 9.1 | 11.0 | 11.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.1 | 9.1 | 11.0 | 11.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.1 | 9.1 | 11.0 | 11.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:05 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.1 | 9.1 | 11.0 | 11.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH306 | 1 | 5.60 | 01/08/2022 13:06 | 2 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 9.1 | 9.1 | 11.0 | 11.0 | 1.0 | 1.0 | 3.0 | 3.0 | 0.3 | 0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312 | 1 | 4.00 | 01/08/2022 13:28 | 1 | 1016 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH312 | 1 | 4.00 | 01/08/2022 13:25 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.1 | 19.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312 | 1 | 4.00 | 01/08/2022 13:25 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.0 | 19.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312 | 1 | 4.00 | 01/08/2022 13:25 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.0 | 19.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312 | 1 | 4.00 | 01/08/2022 13:26 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.0 | 19.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312 | 1 | 4.00 | 01/08/2022 13:26 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.0 | 19.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312 | 1 | 4.00 | 01/08/2022 13:26 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.0 | 19.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312 | 1 | 4.00 | 01/08/2022 13:27 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 19.0 | 19.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311 | 1 | 16.00 | 01/08/2022 13:34 | 1 | 1016 | Battery operated dipr | 6423 | | 8.46 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post fieldworks | Water Only |
| BH311 | 1 | 16.00 | 01/08/2022 13:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 19.2 | 19.2 | 0.0 | 0.0 | 113.0 | 113.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311 | 1 | 16.00 | 01/08/2022 13:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.6 | 0.6 | 18.8 | 18.8 | 0.0 | 0.0 | 233.0 | 233.0 | -0.1 | -0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311 | 1 | 16.00 | 01/08/2022 13:31 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 18.3 | 18.3 | 0.0 | 0.0 | 285.0 | 285.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311 | 1 | 16.00 | 01/08/2022 13:32 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 18.7 | 18.7 | 0.0 | 0.0 | 301.0 | 301.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311 | 1 | 16.00 | 01/08/2022 13:32 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 18.7 | 18.7 | 0.0 | 0.0 | 305.0 | 305.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311 | 1 | 16.00 | 01/08/2022 13:32 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 18.7 | 18.7 | 0.0 | 0.0 | 305.0 | 305.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311 | 1 | 16.00 | 01/08/2022 13:32 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 18.7 | 18.7 | 0.0 | 0.0 | 305.0 | 305.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311 | 1 | 16.00 | 01/08/2022 13:33 | 1 | 1016 | | | | | | | GA5000 | G501278 | 13.0 | 18 | 18 | 0.9 | 0.9 | 0.7 | 0.7 | 18.7 | 18.7 | 0.0 | 0.0 | 305.0 | 305.0 | -0.3 | -0.3 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Vic North |
| Client: | BAM Nuttall |
| Engineer: | APB |

Report blank? NO

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| GEO_BH211A | 1 | 11.60 | 15/08/2022 15:45 | 1 | 1006 | Battery operated dipr | 6423 | | 7.90 | | 11.60 | | | | | | | | | | | | | | | | | | | | | | | | Water Only |
| GEO_BH211A | 1 | 11.60 | 15/08/2022 15:40 | 1 | 1006 | | | | | | | GA5000 | G501278 | 24.0 | 6 | 6 | 0.3 | 0.3 | 0.8 | 0.8 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.36 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 11.60 | 15/08/2022 15:40 | 1 | 1006 | | | | | | | GA5000 | G501278 | 24.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.36 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 11.60 | 15/08/2022 15:40 | 1 | 1006 | | | | | | | GA5000 | G501278 | 24.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.36 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 11.60 | 15/08/2022 15:41 | 1 | 1006 | | | | | | | GA5000 | G501278 | 24.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.36 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 11.60 | 15/08/2022 15:41 | 1 | 1006 | | | | | | | GA5000 | G501278 | 24.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.36 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 11.60 | 15/08/2022 15:41 | 1 | 1006 | | | | | | | GA5000 | G501278 | 24.0 | 6 | 6 | 0.3 | 0.3 | 0.9 | 0.9 | 20.1 | 20.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.36 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 11.60 | 15/08/2022 15:41 | 1 | 1006 | | | | | | | GA5000 | G501278 | 24.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.36 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 11.60 | 15/08/2022 15:42 | 1 | 1006 | | | | | | | GA5001 | G501279 | 25.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.36 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 15/08/2022 09:01 | 1 | 1006 | Battery operated dipr | 6423 | | 3.72 | | 4.00 | | | | | | | | | | | | | | | | | | | | | | | | Water Only |
| BH312A | 1 | 4.00 | 15/08/2022 08:57 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 3.4 | 3.4 | 18.9 | 18.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.03 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 15/08/2022 08:57 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 3.4 | 3.4 | 18.5 | 18.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.03 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 15/08/2022 08:57 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 3.4 | 3.4 | 17.6 | 17.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.03 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 15/08/2022 08:58 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 3.4 | 3.4 | 17.6 | 17.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.03 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 15/08/2022 08:58 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 3.4 | 3.4 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.03 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 15/08/2022 08:58 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 3.4 | 3.4 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.03 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 15/08/2022 08:58 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 3.4 | 3.4 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.03 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 15/08/2022 08:59 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 3.4 | 3.4 | 17.3 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.03 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 15/08/2022 09:19 | 1 | 1006 | Battery operated dipr | 6423 | | 8.48 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | | | Water Only |
| BH311B | 1 | 16.00 | 15/08/2022 09:15 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 21.1 | 21.1 | 1.0 | 1.0 | 2.0 | 2.0 | -0.1 | -0.1 | 0.57 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 15/08/2022 09:15 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 18.3 | 18.3 | 1.0 | 1.0 | 228.0 | 228.0 | -0.1 | -0.1 | 0.57 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 15/08/2022 09:15 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 17.6 | 17.6 | 2.0 | 2.0 | 273.0 | 273.0 | -0.3 | -0.3 | 0.57 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 15/08/2022 09:16 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 17.5 | 17.5 | 2.0 | 2.0 | 276.0 | 276.0 | -0.3 | -0.3 | 0.57 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 15/08/2022 09:16 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 17.5 | 17.5 | 2.0 | 2.0 | 276.0 | 276.0 | -0.3 | -0.3 | 0.57 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 15/08/2022 09:16 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 17.5 | 17.5 | 2.0 | 2.0 | 276.0 | 276.0 | -0.3 | -0.3 | 0.57 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 15/08/2022 09:16 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 17.5 | 17.5 | 2.0 | 2.0 | 276.0 | 276.0 | -0.3 | -0.3 | 0.57 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 15/08/2022 09:17 | 1 | 1006 | | | | | | | GA5000 | G501278 | 22.0 | 6 | 6 | 0.3 | 0.3 | 1.0 | 1.0 | 17.5 | 17.5 | 2.0 | 2.0 | 276.0 | 276.0 | -0.3 | -0.3 | 0.57 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

Contract No. 326R
Contract Name Manc Vic North
Client: BAM Ritchies
Engineer: Imtiyaaz Patel

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | Reading Type |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | s/s | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | ppmv | | | | |
| GEO_BH211A | 1 | 10.50 | 07/09/2022 09:09 | 1 | 1003 | Battery operated dipr | 6423 | | 9.32 | | 10.50 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| GEO_BH211A | 1 | 10.50 | 07/09/2022 09:06 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.2 | 0.2 | 20.8 | 20.8 | 0.0 | 0.0 | 2.0 | 2.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 10.50 | 07/09/2022 09:06 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.7 | 3.7 | 18.0 | 18.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 10.50 | 07/09/2022 09:06 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 17.1 | 17.1 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 10.50 | 07/09/2022 09:07 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 10.50 | 07/09/2022 09:07 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 10.50 | 07/09/2022 09:07 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 10.50 | 07/09/2022 09:07 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| GEO_BH211A | 1 | 10.50 | 07/09/2022 09:08 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 3.8 | 3.8 | 16.8 | 16.8 | 0.0 | 0.0 | 1.0 | 1.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 07/09/2022 08:45 | 1 | 1003 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH312A | 1 | 4.00 | 07/09/2022 08:42 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 22 | 22 | 1.1 | 1.1 | 4.9 | 4.9 | 20.9 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 07/09/2022 08:42 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 22 | 22 | 1.1 | 1.1 | 5.0 | 5.0 | 17.8 | 17.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 07/09/2022 08:42 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 22 | 22 | 1.1 | 1.1 | 5.0 | 5.0 | 16.4 | 16.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 07/09/2022 08:43 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 16.0 | 16.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 07/09/2022 08:43 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 07/09/2022 08:43 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 07/09/2022 08:43 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 07/09/2022 08:44 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 5.1 | 5.1 | 15.9 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 07/09/2022 08:51 | 1 | 1003 | Battery operated dipr | 6423 | | 8.55 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH311B | 1 | 16.00 | 07/09/2022 08:48 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.8 | 0.8 | 16.0 | 16.0 | 0.0 | 0.0 | 5.0 | 5.0 | -0.9 | -0.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 07/09/2022 08:48 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.8 | 0.8 | 16.2 | 16.2 | 0.0 | 0.0 | 7.0 | 7.0 | -1.1 | -1.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 07/09/2022 08:48 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.8 | 0.8 | 16.2 | 16.2 | 0.0 | 0.0 | 8.0 | 8.0 | -1.0 | -1.0 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 07/09/2022 08:49 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.8 | 0.8 | 16.2 | 16.2 | 0.0 | 0.0 | 8.0 | 8.0 | -0.9 | -0.9 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 07/09/2022 08:49 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.8 | 0.8 | 16.2 | 16.2 | 0.0 | 0.0 | 8.0 | 8.0 | -0.8 | -0.8 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 07/09/2022 08:49 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.8 | 0.8 | 16.2 | 16.2 | 0.0 | 0.0 | 8.0 | 8.0 | -0.7 | -0.7 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 07/09/2022 08:49 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.8 | 0.8 | 16.2 | 16.2 | 0.0 | 0.0 | 8.0 | 8.0 | -0.5 | -0.5 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 07/09/2022 08:50 | 1 | 1003 | | | | | | | GA5000 | G501278 | 13.0 | 20 | 20 | 1.0 | 1.0 | 0.8 | 0.8 | 16.2 | 16.2 | 0.0 | 0.0 | 8.0 | 8.0 | -0.4 | -0.4 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# RESULTS OF GROUNDWATER AND GAS MONITORING

| | |
|---|---|
| Contract No. | 326R |
| Contract Name | Manc Vic North |
| Client: | BAM Ritchies |
| Engineer: | Imtiyaaz Patel |

Report blank? no

YOUR SAFETY IS MY SAFETY

| Installation | | | Reading information | | | Water monitoring | | | | | | Gas monitoring | | | | | | | | | | | | | | | | | | Photoionization detector | | | Remarks | | | Reading Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Point ID | Depth | Date Time | Reading Ref | Atm. Pressure | Method | Serial | LNAPL | Water | DNAPL | Base of install | Method | Serial | Atm. Temp. | LEL CH4 | | CH4 | | CO2 | | O2 | | H2S | | CO | | Flow | | Diff. Pressure | Serial | PID | PID | Weather | Contractor | Remark | |
| | | | | | | | | | | | | | | | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | peak | s/s | | | peak | ppmv | | | | |
| | | mbgl | | | bar | | | mbgl | mbgl | mbgl | mbgl | | | degC | %LEL | %LEL | %vol | %vol | %vol | %vol | %vol | %vol | ppm | ppm | ppm | ppm | l/hr | l/hr | mbar | | ppmv | | | | | |
| BH211A | 1 | 11.60 | 06/10/2022 09:50 | 1 | 1019 | Battery operated dipr | 6423 | | | | 11.60 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks/ unable to locate hole as trees are being chopped covering the hole | Water Only |
| BH312A | 1 | 4.00 | 06/10/2022 09:38 | 1 | 1019 | Battery operated dipr | 6423 | | DRY | | 4.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH312A | 1 | 4.00 | 06/10/2022 09:35 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 28 | 1 | 1.4 | 1.4 | 6.4 | 6.4 | 7.2 | 7.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 06/10/2022 09:35 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 28 | 28 | 1.4 | 1.4 | 6.4 | 6.4 | 13.1 | 13.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 06/10/2022 09:35 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 28 | 28 | 1.4 | 1.4 | 6.4 | 6.4 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 06/10/2022 09:36 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 30 | 30 | 1.5 | 1.5 | 6.5 | 6.5 | 11.3 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 06/10/2022 09:36 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 30 | 30 | 1.5 | 1.5 | 6.5 | 6.5 | 10.7 | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 06/10/2022 09:36 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 30 | 30 | 1.5 | 1.5 | 6.5 | 6.5 | 10.7 | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 06/10/2022 09:36 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 30 | 30 | 1.5 | 1.5 | 6.5 | 6.5 | 10.7 | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH312A | 1 | 4.00 | 06/10/2022 09:37 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 30 | 30 | 1.5 | 1.5 | 6.5 | 6.5 | 10.7 | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 06/10/2022 09:43 | 1 | 1019 | Battery operated dipr | 6423 | | 8.34 | | 16.00 | | | | | | | | | | | | | | | | | | | | | | Overcast, bre | BAM Ritchies | Post Fieldworks | Water Only |
| BH311B | 1 | 16.00 | 06/10/2022 09:40 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 38 | 1 | 1.9 | 1.9 | 0.9 | 0.9 | 10.9 | 10.9 | 0.0 | 0.0 | 4.0 | 4.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 06/10/2022 09:40 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 38 | 38 | 1.9 | 1.9 | 0.9 | 0.9 | 12.1 | 12.1 | 0.0 | 0.0 | 6.0 | 6.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 06/10/2022 09:40 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 38 | 38 | 1.9 | 1.9 | 0.9 | 0.9 | 11.9 | 11.9 | 0.0 | 0.0 | 6.0 | 6.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 06/10/2022 09:41 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 38 | 38 | 1.9 | 1.9 | 0.9 | 0.9 | 11.2 | 11.2 | 0.0 | 0.0 | 6.0 | 6.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 06/10/2022 09:41 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 38 | 38 | 1.9 | 1.9 | 0.9 | 0.9 | 12.1 | 12.1 | 0.0 | 0.0 | 6.0 | 6.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 06/10/2022 09:41 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 38 | 38 | 1.9 | 1.9 | 0.9 | 0.9 | 13.1 | 13.1 | 0.0 | 0.0 | 6.0 | 6.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 06/10/2022 09:41 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 38 | 38 | 1.9 | 1.9 | 0.9 | 0.9 | 13.1 | 13.1 | 0.0 | 0.0 | 6.0 | 6.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |
| BH311B | 1 | 16.00 | 06/10/2022 09:42 | 1 | 1019 | | | | | | | GA5000 | G501278 | 13.0 | 38 | 38 | 1.9 | 1.9 | 0.9 | 0.9 | 13.1 | 13.1 | 0.0 | 0.0 | 6.0 | 6.0 | 0.1 | 0.1 | 0.33 | 595-003408 | 0.00 | 0.00 | Overcast, bre | BAM Ritchies | Post Fieldworks | Gas, PID and Groundwater |

# *SiteMaster 2020*

A software for inclinometer data processing and presentation

Victoria North HiF

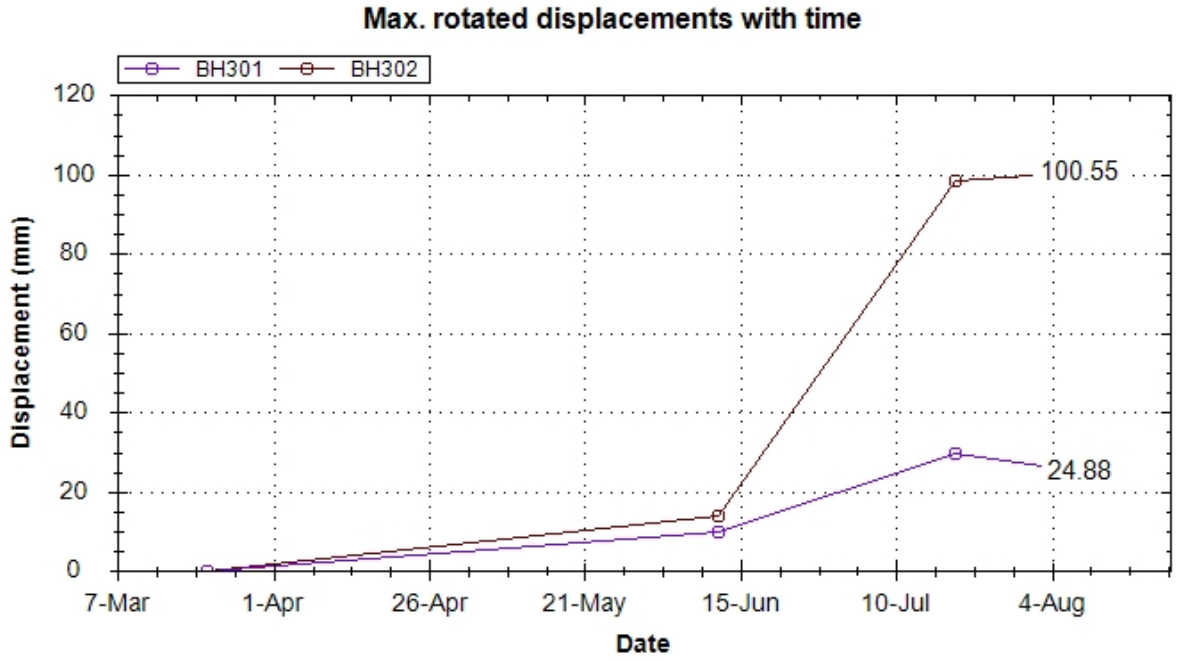


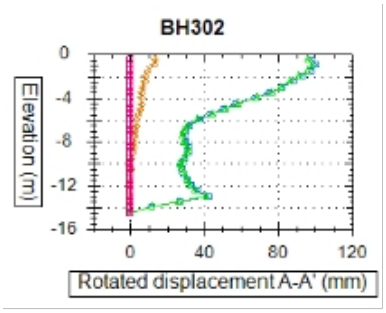

Engineer: APB

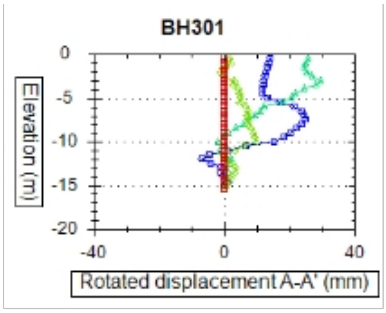
10/20/2022

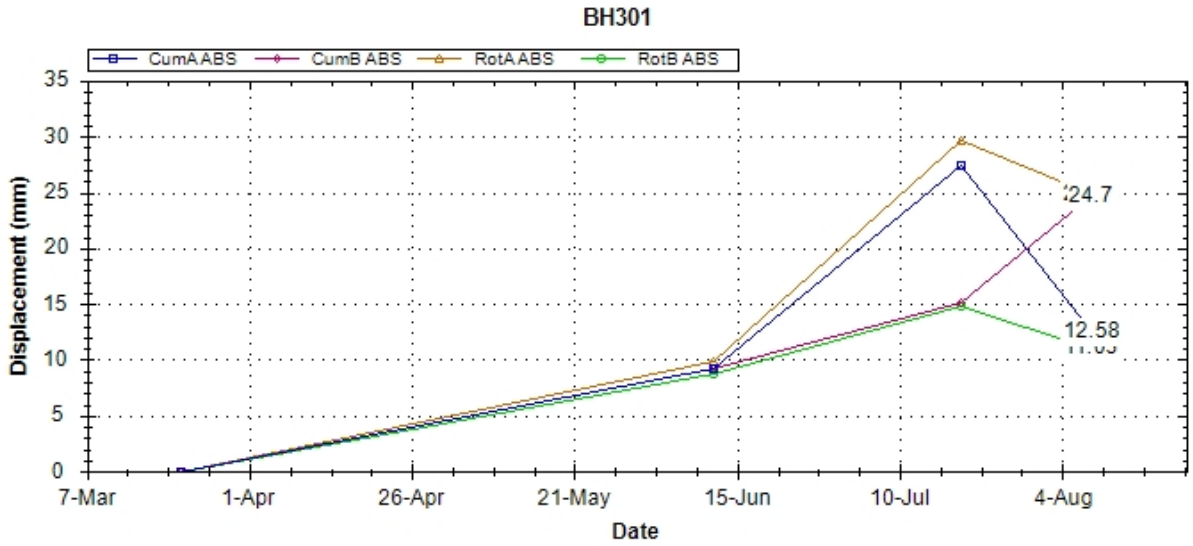
## Summary of all inclinometers

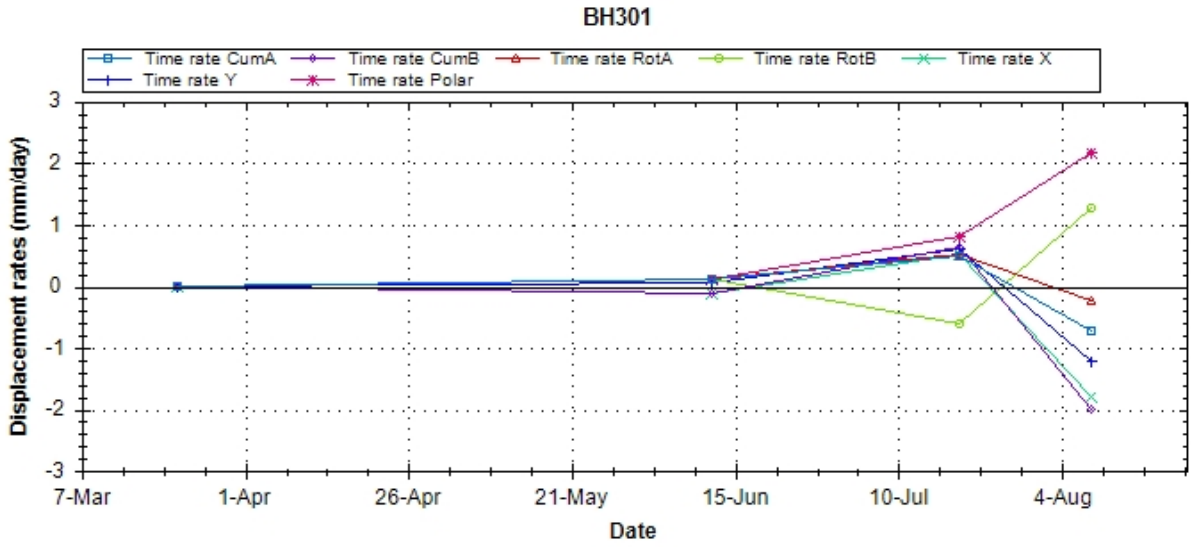
| Inclinometer | Included | Instr. | Last | Last Cu | Last Cu | Last Rot | Last Rot | Max Cu | Max Cu | Max Rot | Max Rot |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | In report | State | Reading | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) |
| BH301 | Yes | | 8/8/2022 12:00:00 A | 12.6 | 24.7 | 24.9 | 11 | 27.4 | 24.7 | 29.6 | 14.8 |
| BH302 | Yes | | 8/8/2022 12:00:00 A | 63.5 | 78 | 100.6 | 21.6 | 63.5 | 78.4 | 100.6 | 24.3 |

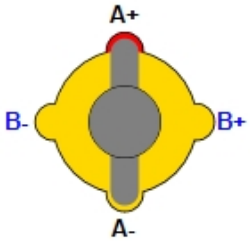


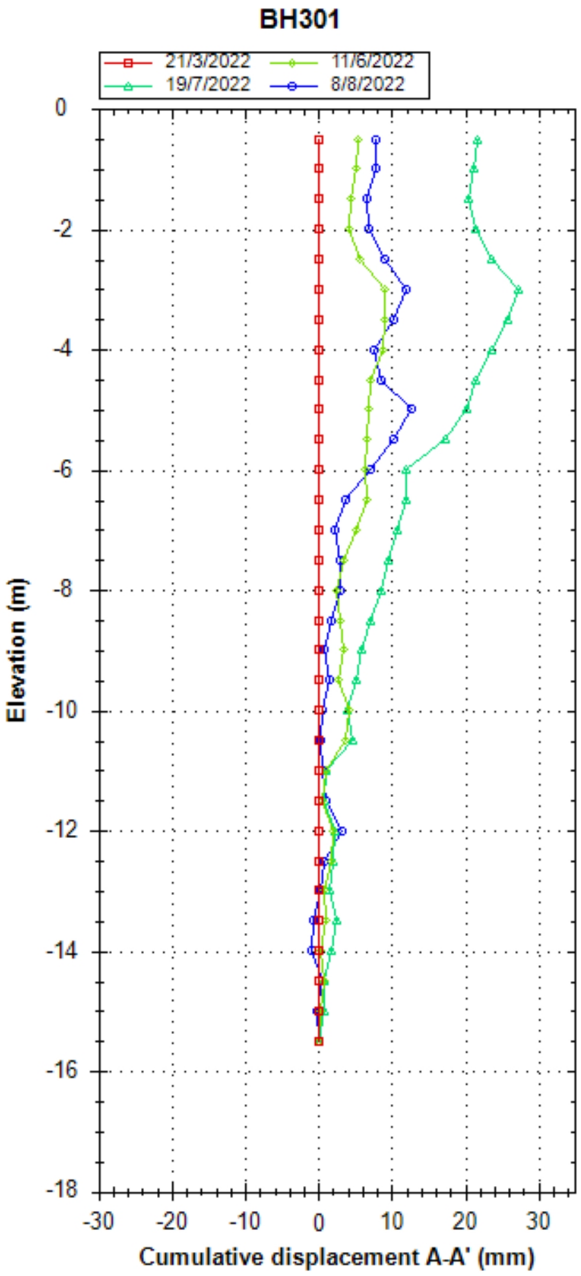



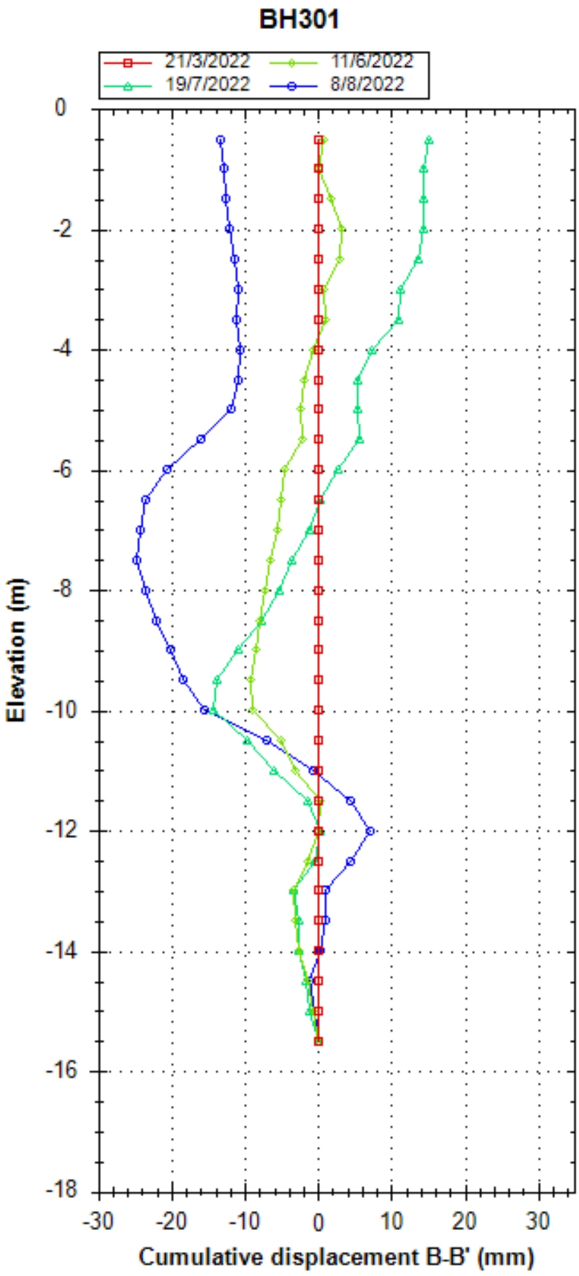



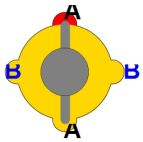

BH301
CumA ABS
CumB ABS
RotA ABS
RotB ABS
Displacement (mm)
35
30
25
20
15
10
5
0
24.7
12.58
7-Mar
1-Apr
26-Apr
21-May
15-Jun
10-Jul
4-Aug
Date


BH301
Time rate CumA
Time rate CumB
Time rate RotA
Time rate RotB
Time rate X
Time rate Y
Time rate Polar
Displacement rates (mm/day)
3
2
1
0
-1
-2
-3
7-Mar
1-Apr
26-Apr
21-May
15-Jun
10-Jul
4-Aug
Date

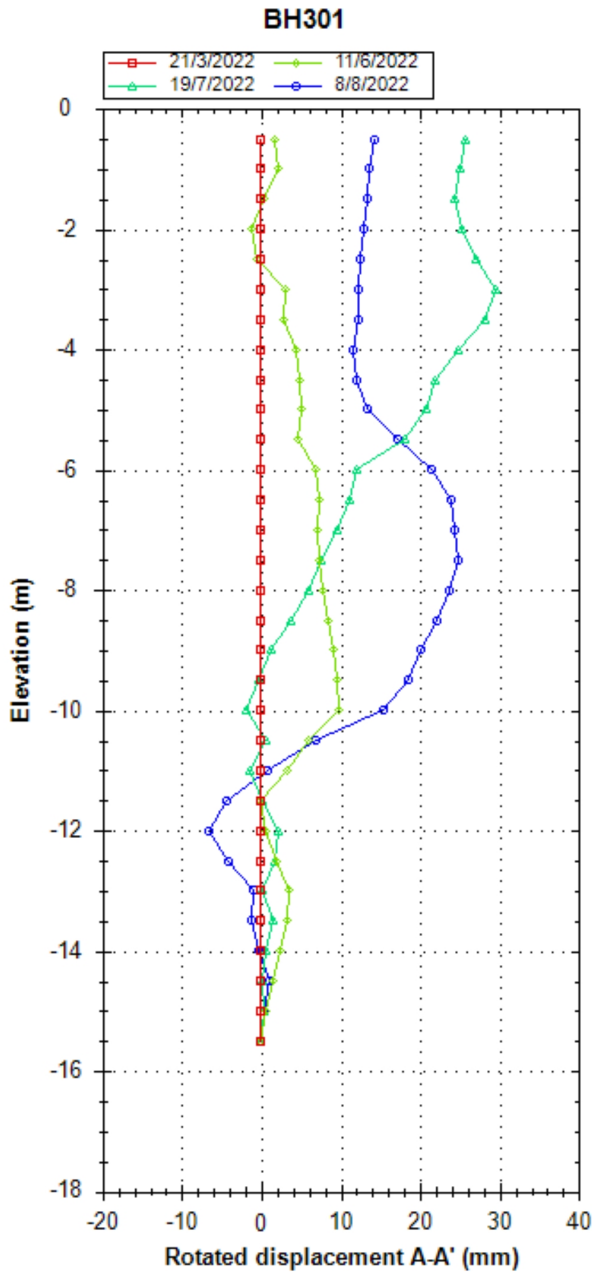

A+
B-
B+
A-

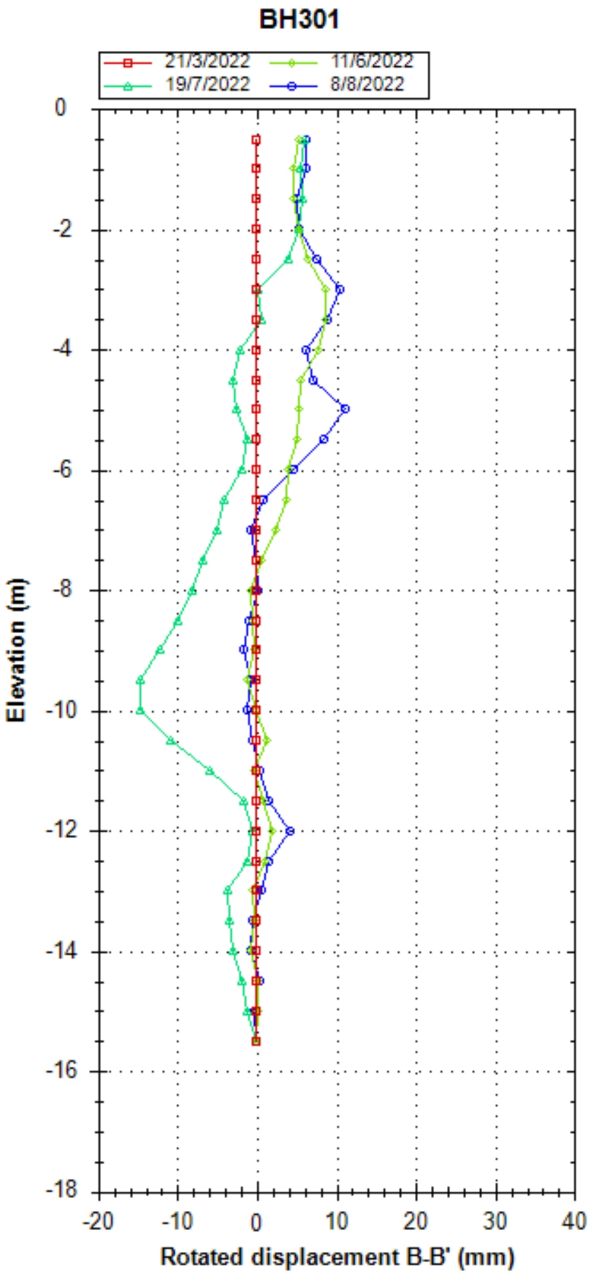


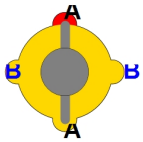



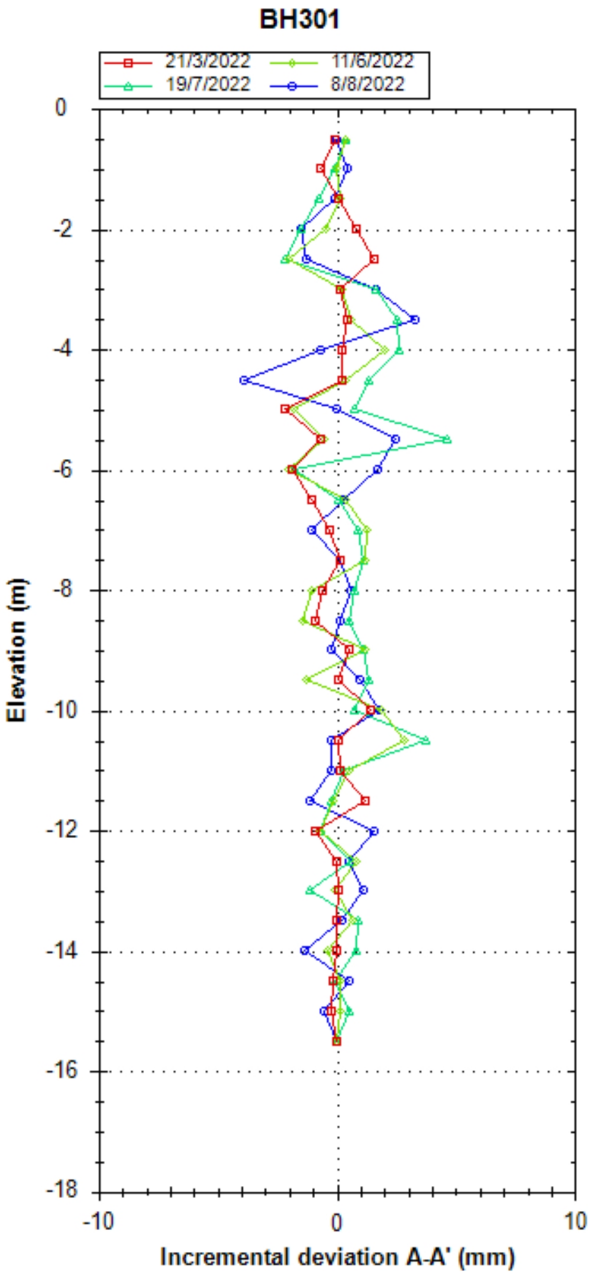

Inst. date:
Top elevation: 0
Bottom elevation: -15.5
Alpha (deg): 0
Last reading: 8/8/2022 11:54:24 AM
Cumulative A+: 12.58, A-: -0.85
Cumulative B+: 7.17, B-: -24.7

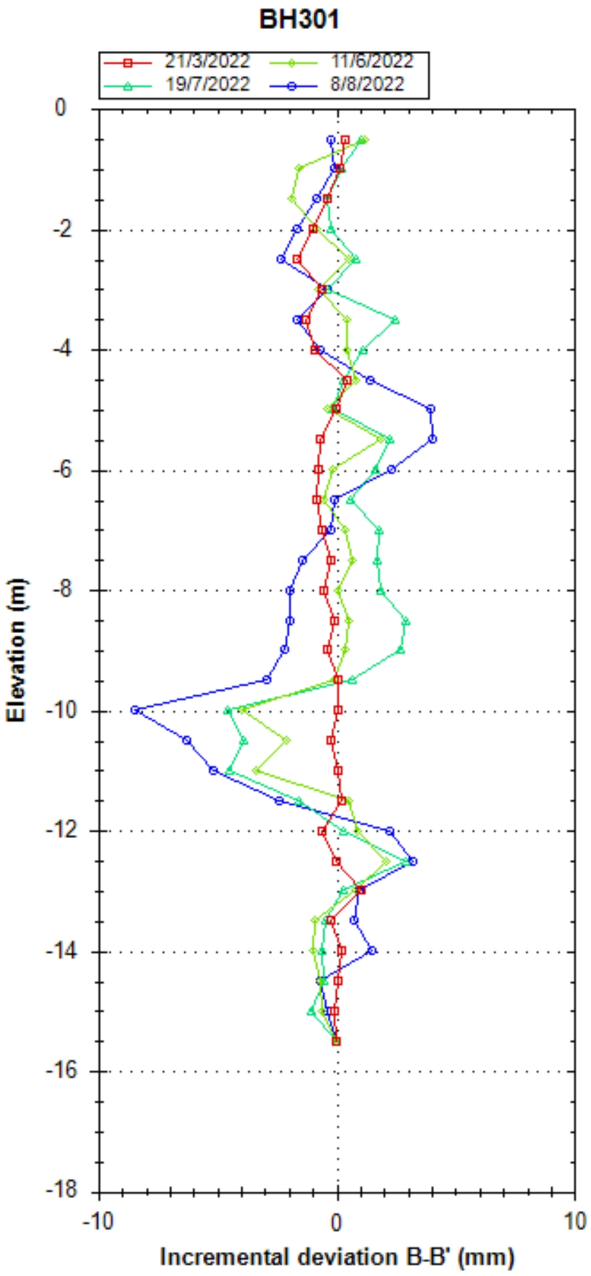


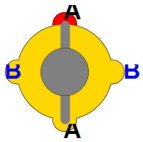



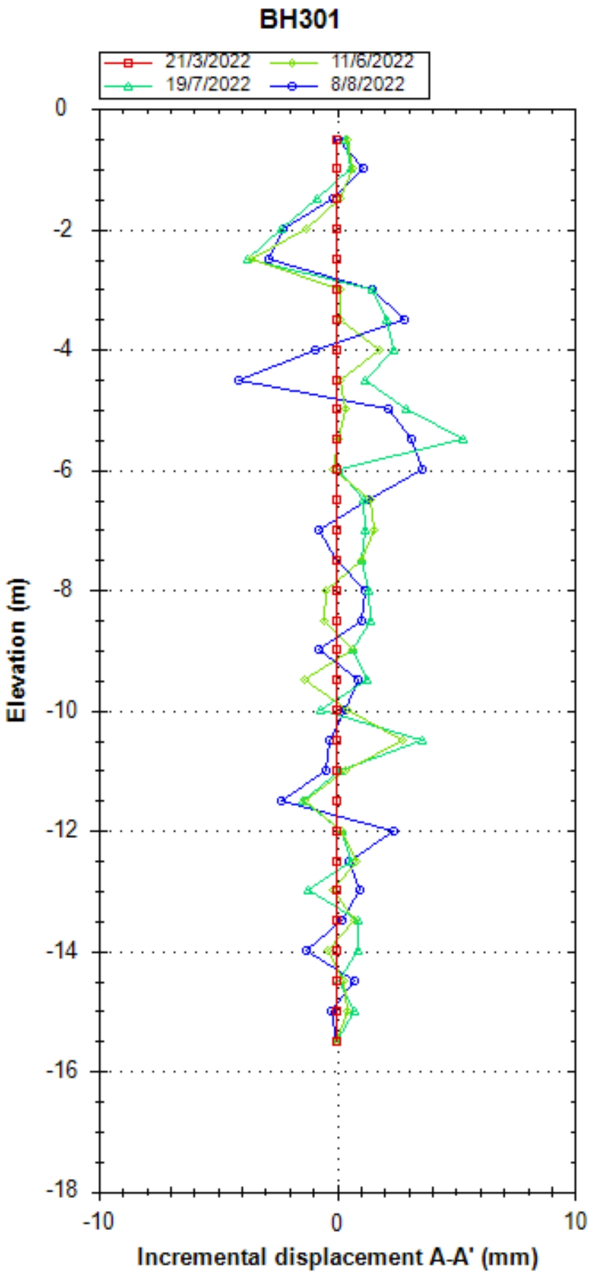

Inst. date:
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Bottom elevation: -15.5
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Rotated A+: 24.88, A-: -6.71
Rotated B+: 11.03, B-: -1.73

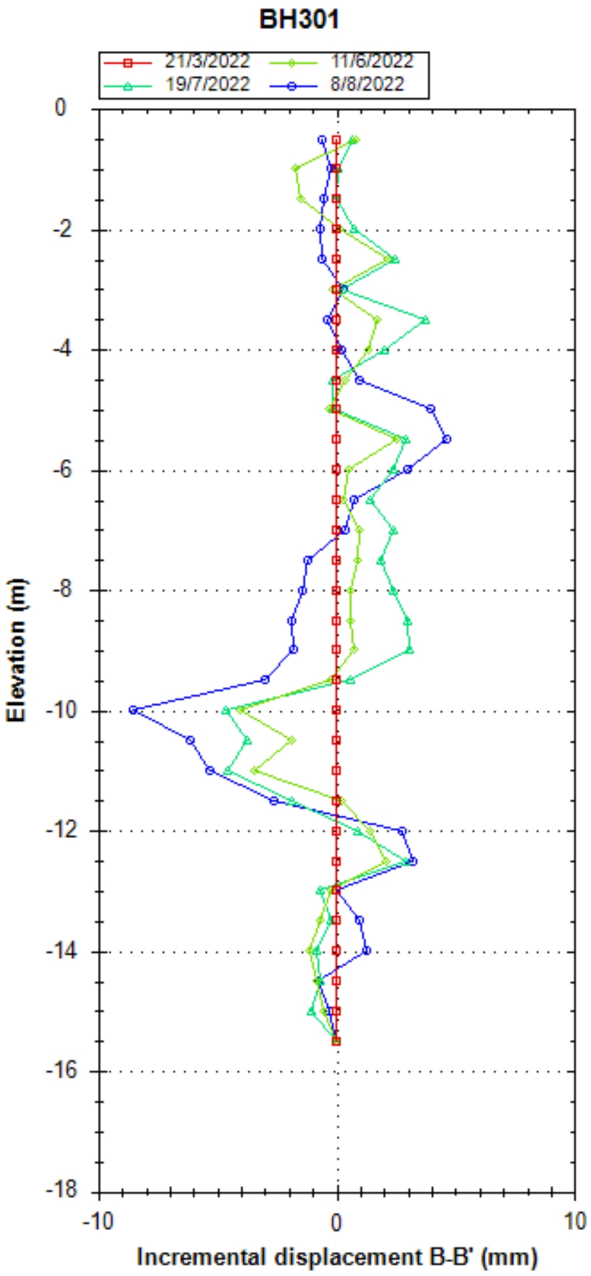


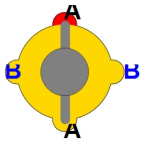



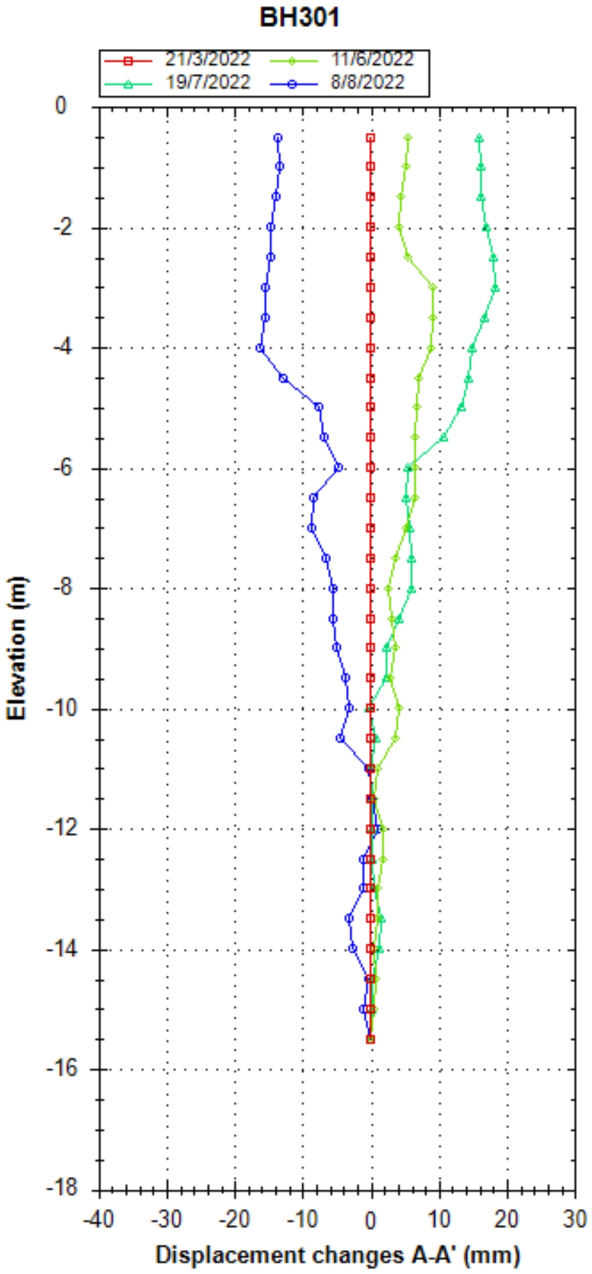

Inst. date:
Top elevation: 0
Bottom elevation: -15.5
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Last reading: 8/8/2022 11:54:24 AM

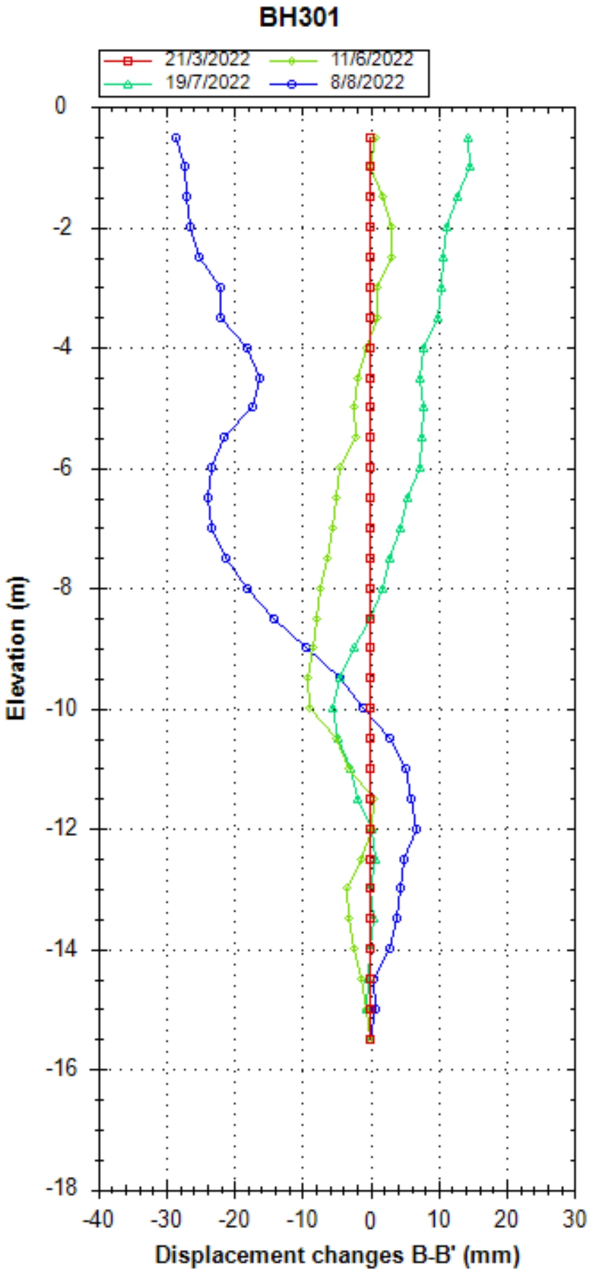


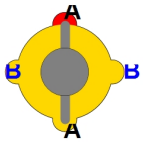



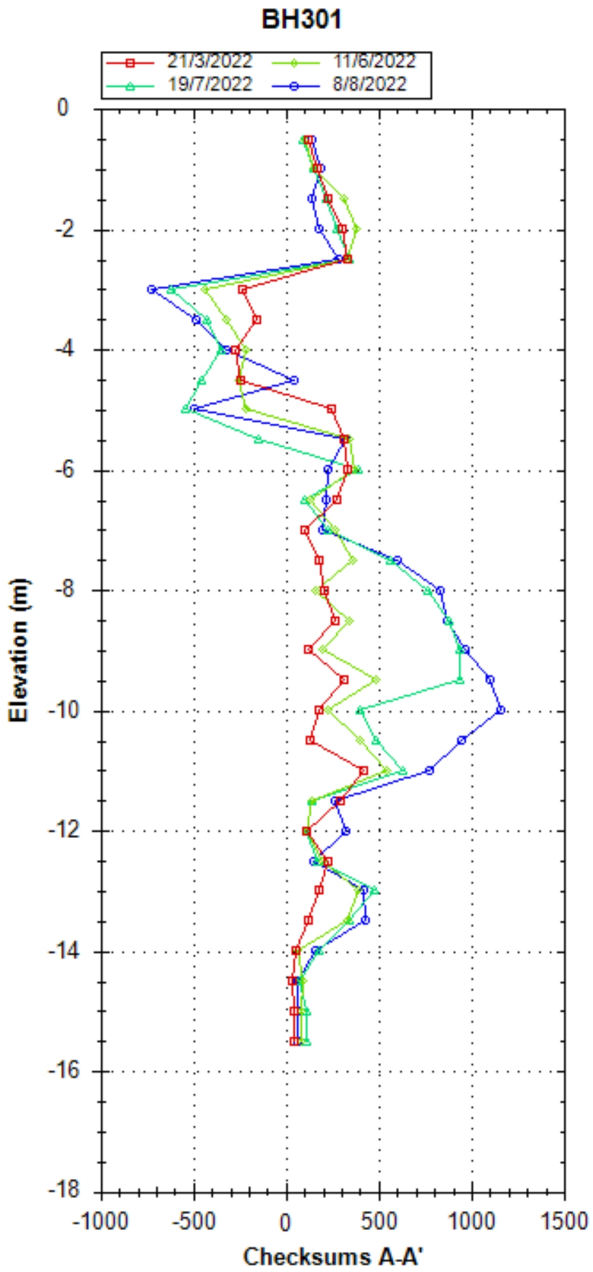

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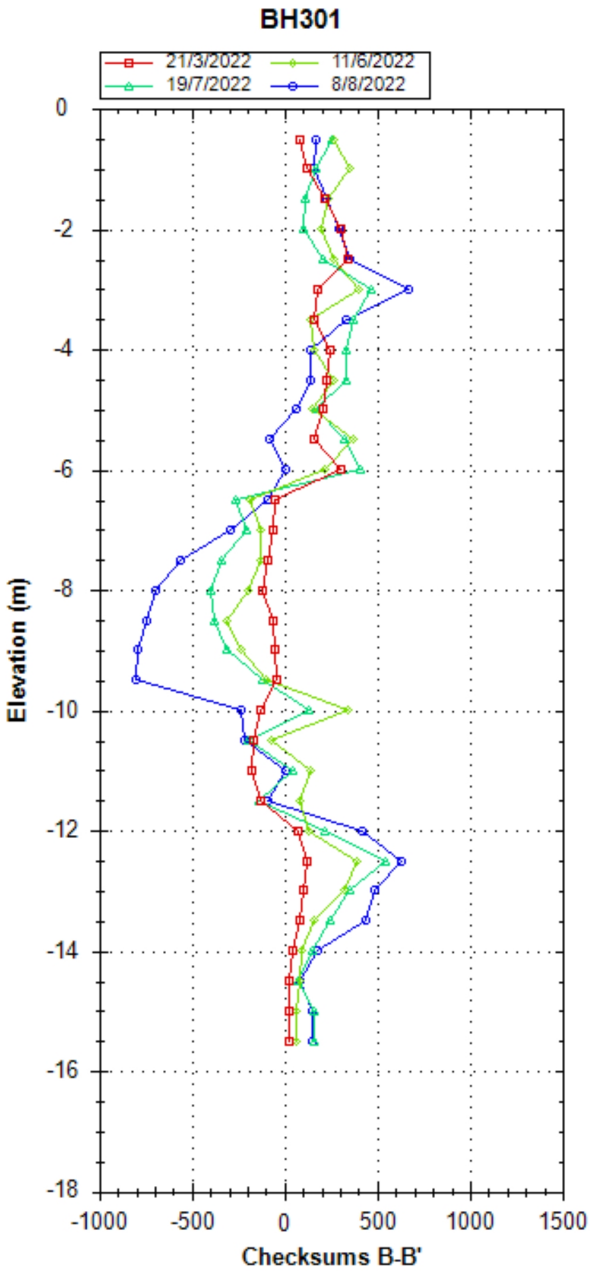


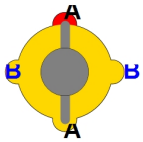



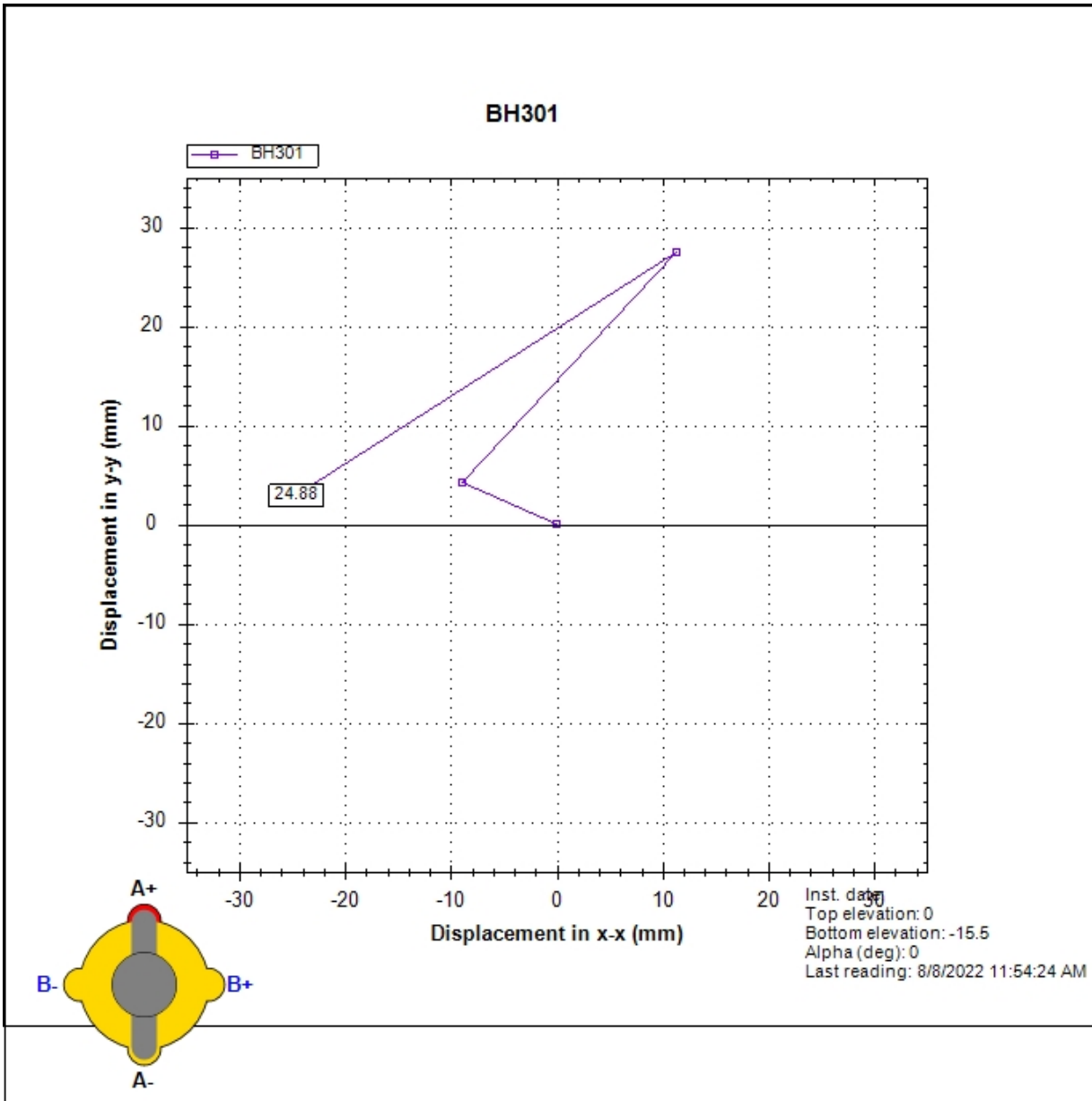

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Alpha (deg): 0
Last reading: 8/8/2022 11:54:24 AM
Velocity A: -0.736 mm/day
Velocity B: -1.9846 mm/day



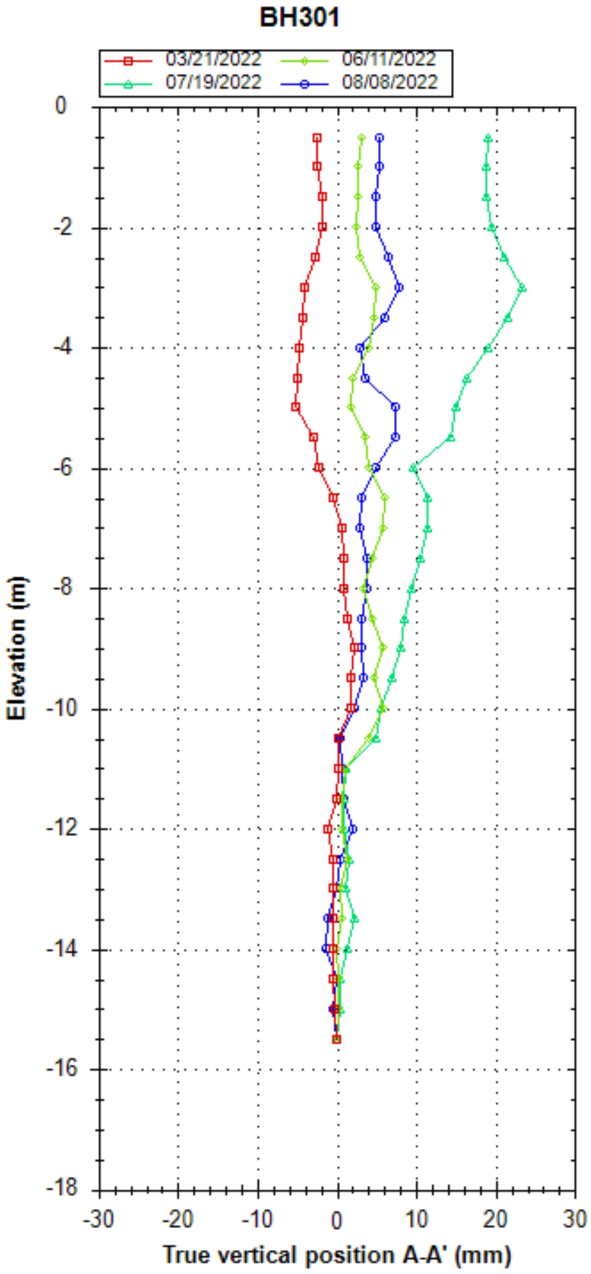



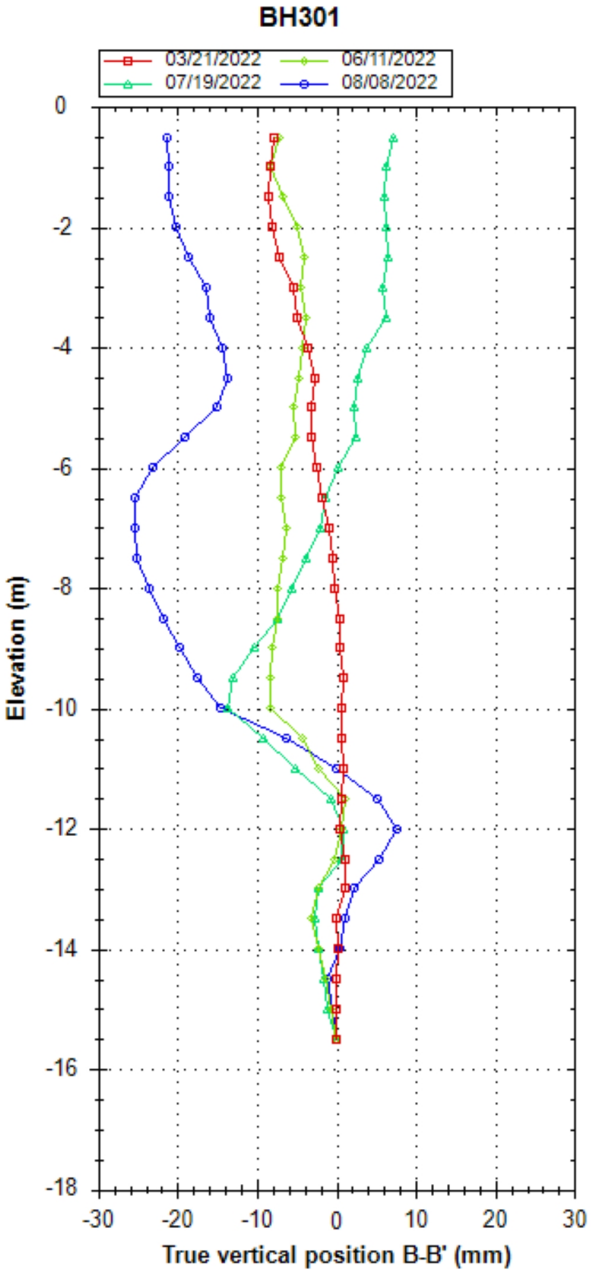



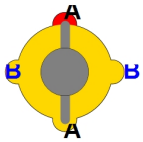

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Alpha (deg): 0
Last reading: 8/8/2022 11:54:24 AM



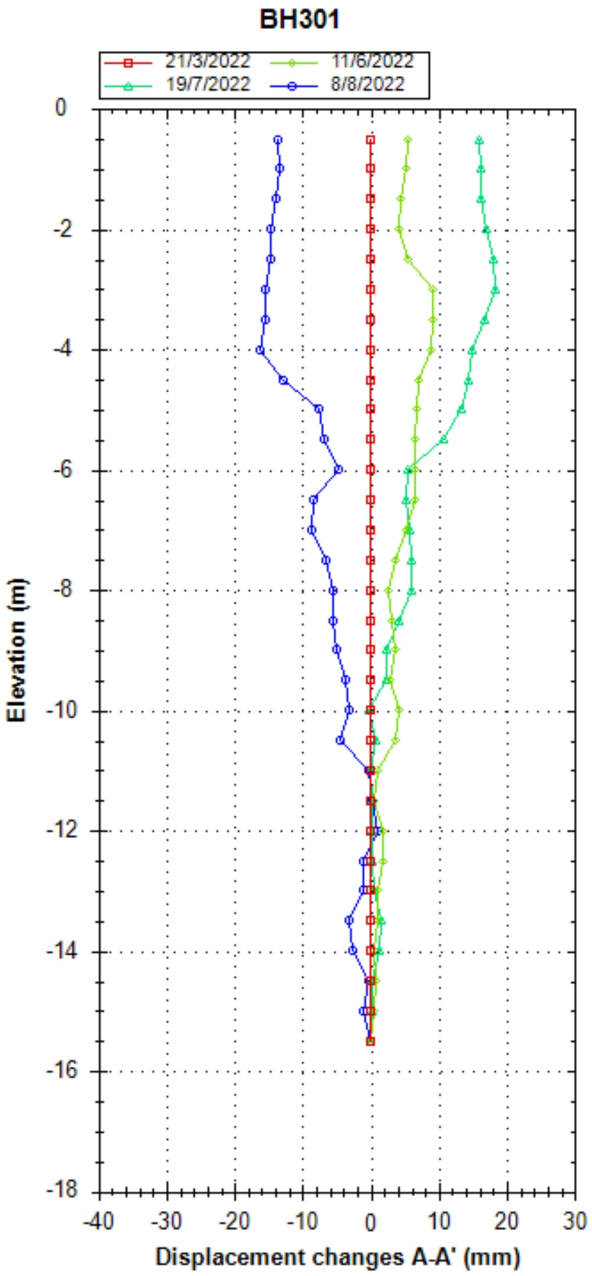

| | | |
|---|---|---|
| Company name: BAM Ritchies<br>Prepared by: APB | Polar displacements (max displacement) | Deep Excavation LCC<br>SiteMaster 2020 |
| | | 10/20/2022 |

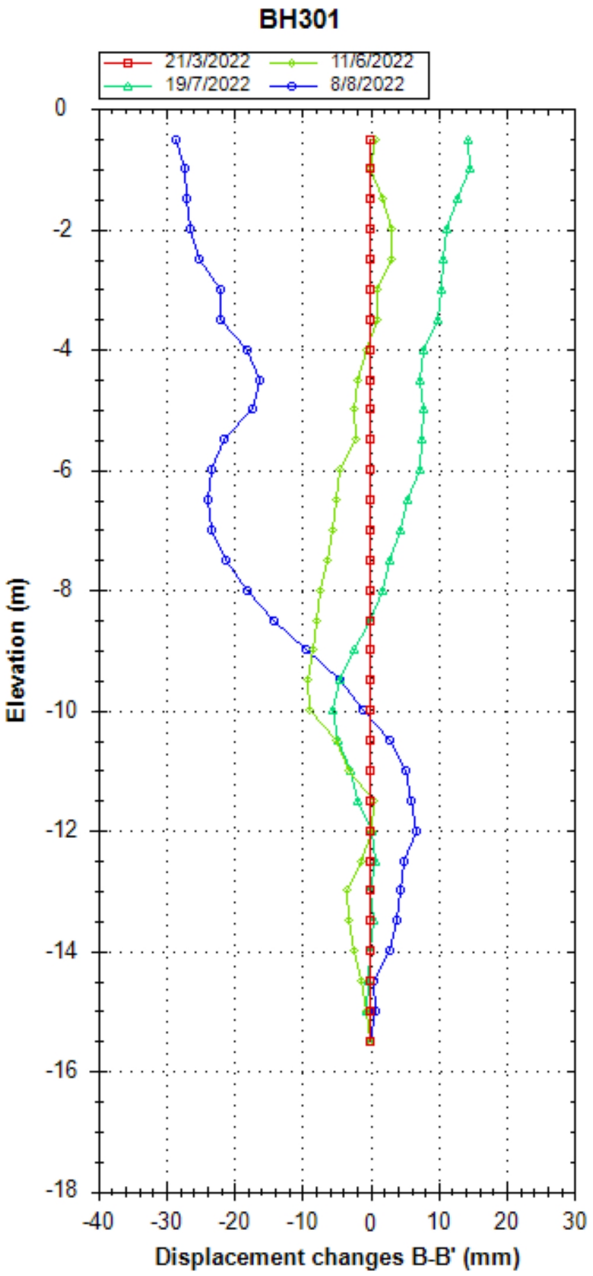


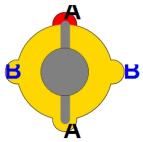



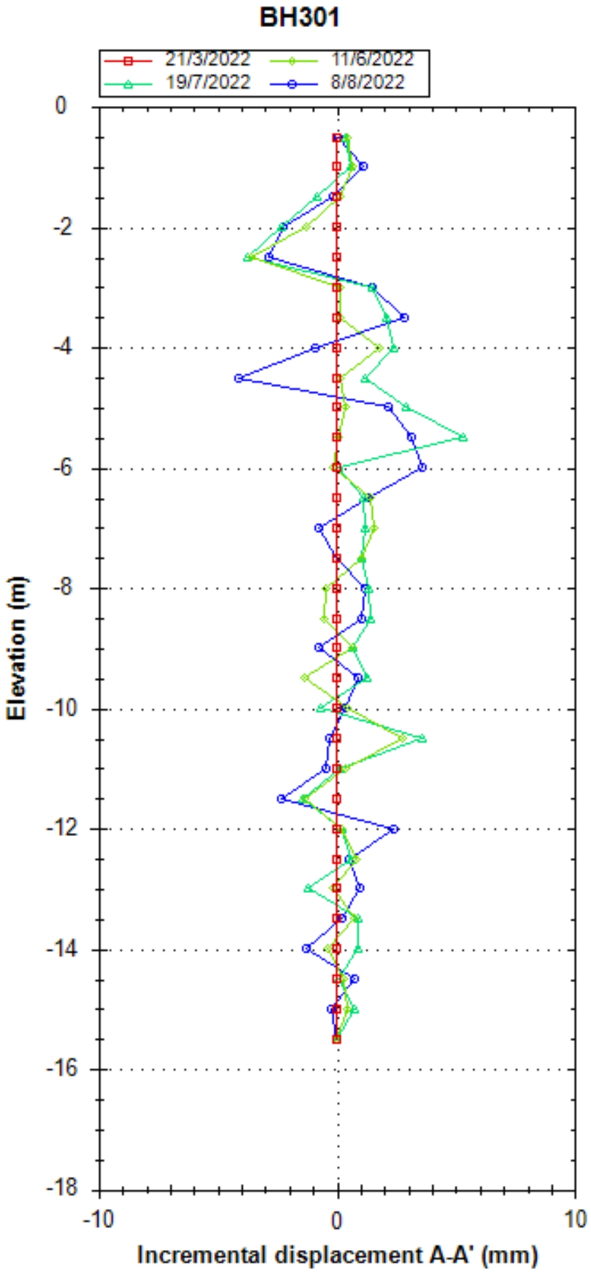

Inst. date:
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Bottom elevation: -15.5
Alpha (deg): 0
Last reading: 8/8/2022 11:54:24 AM

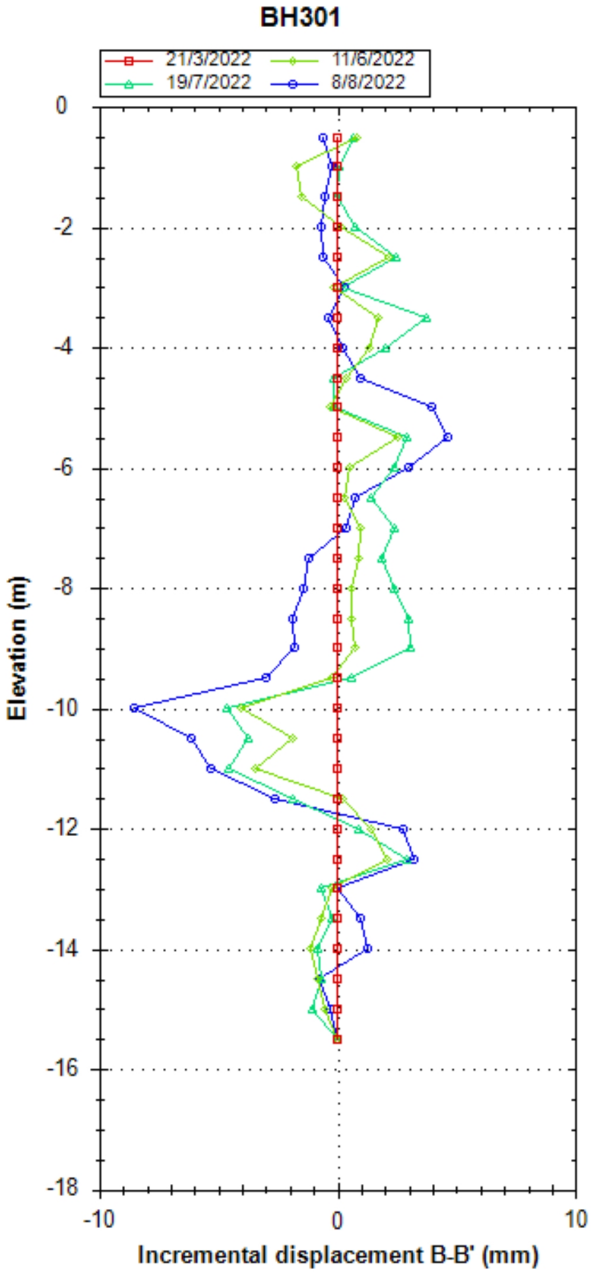


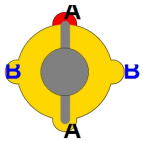



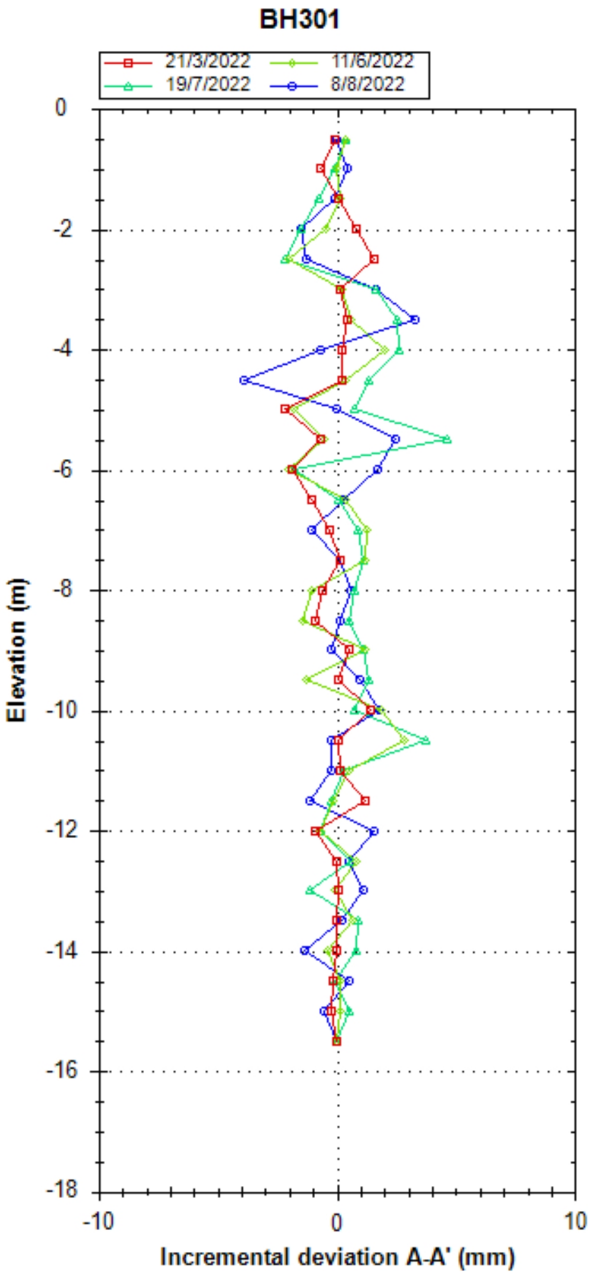

Inst. date:
Top elevation: 0
Bottom elevation: -15.5
Alpha (deg): 0
Last reading: 8/8/2022 11:54:24 AM
Velocity A: -0.736 mm/day
Velocity B: -1.9846 mm/day

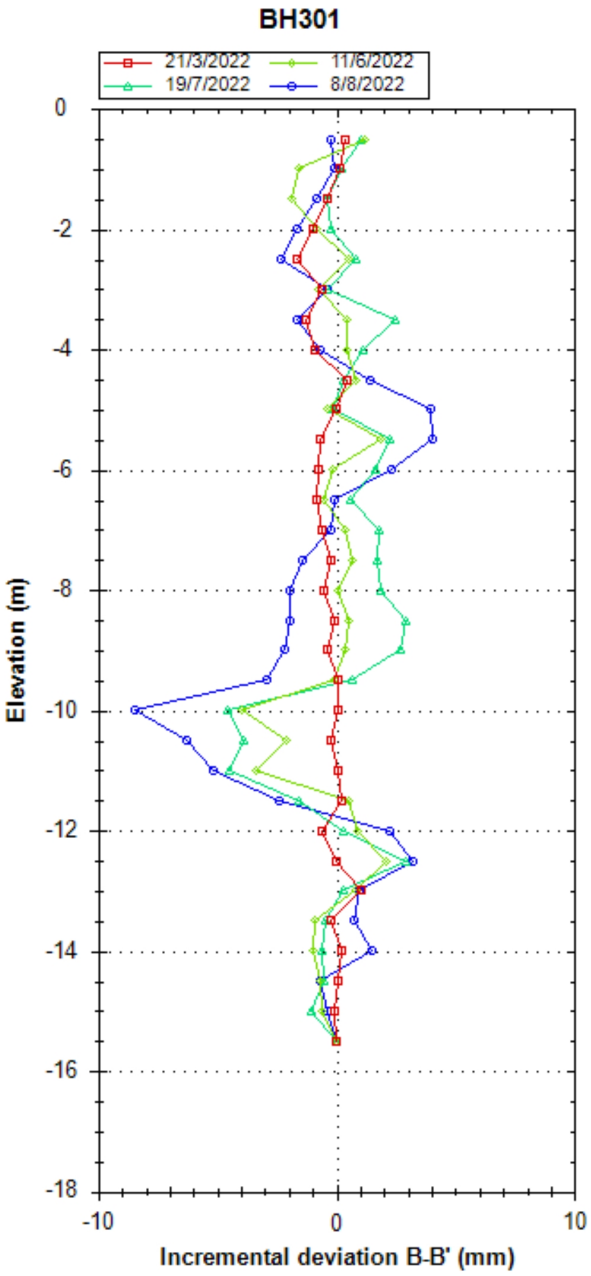


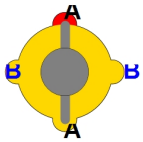



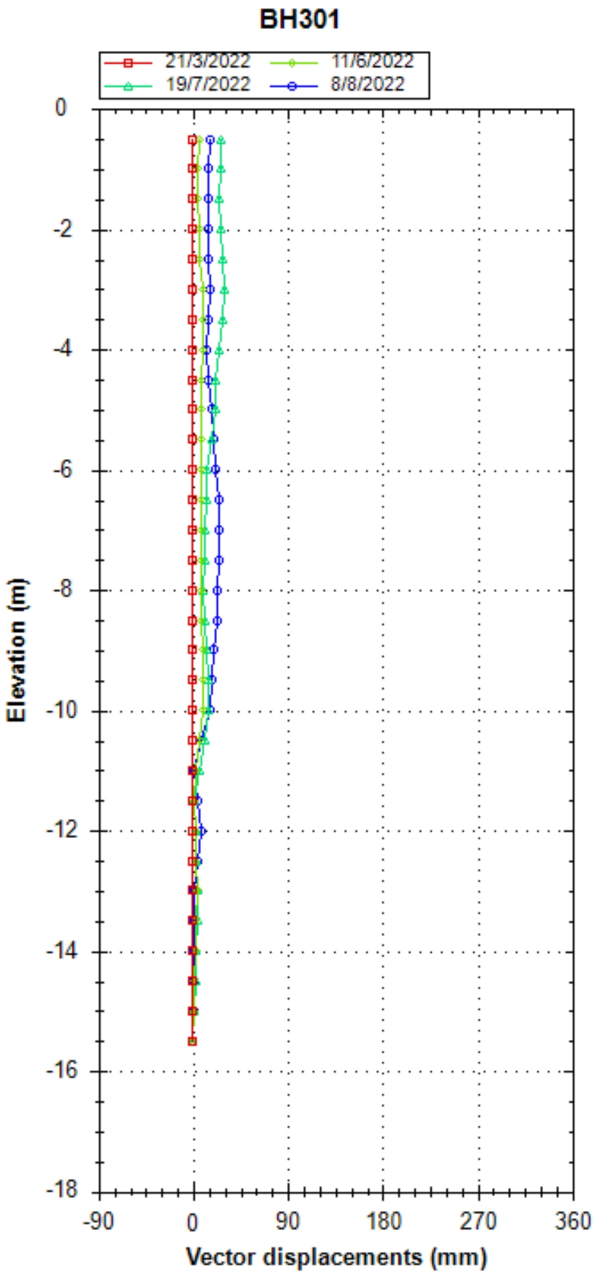

Inst. date:
Top elevation: 0
Bottom elevation: -15.5
Alpha (deg): 0
Last reading: 8/8/2022 11:54:24 AM

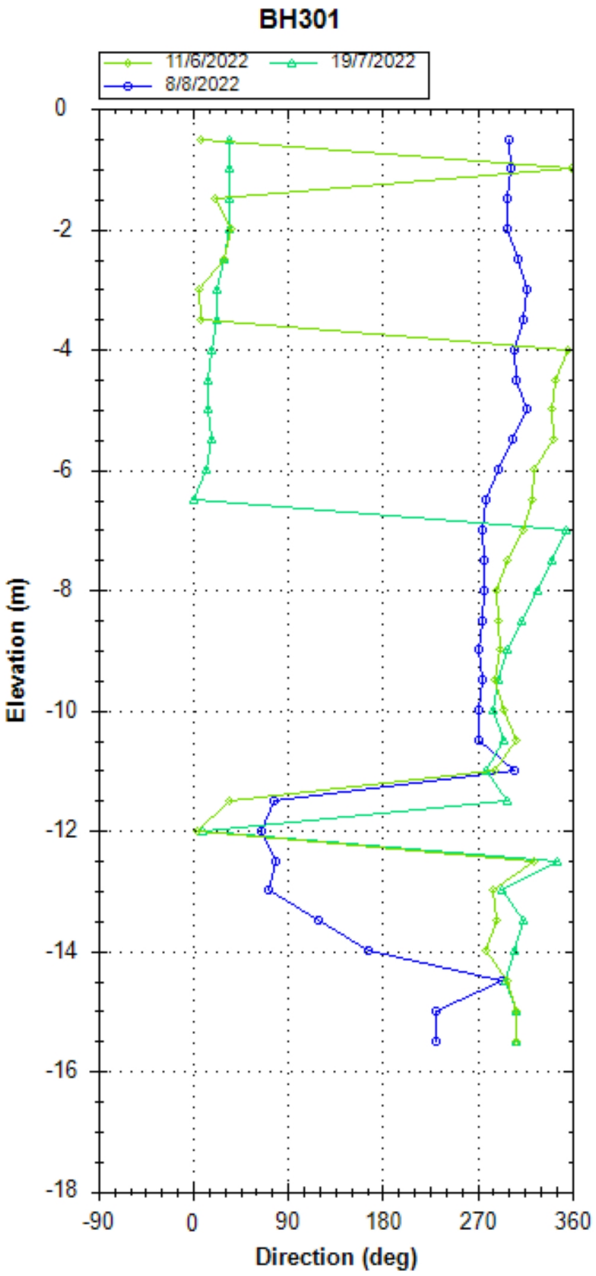


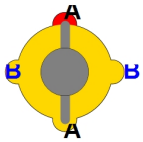



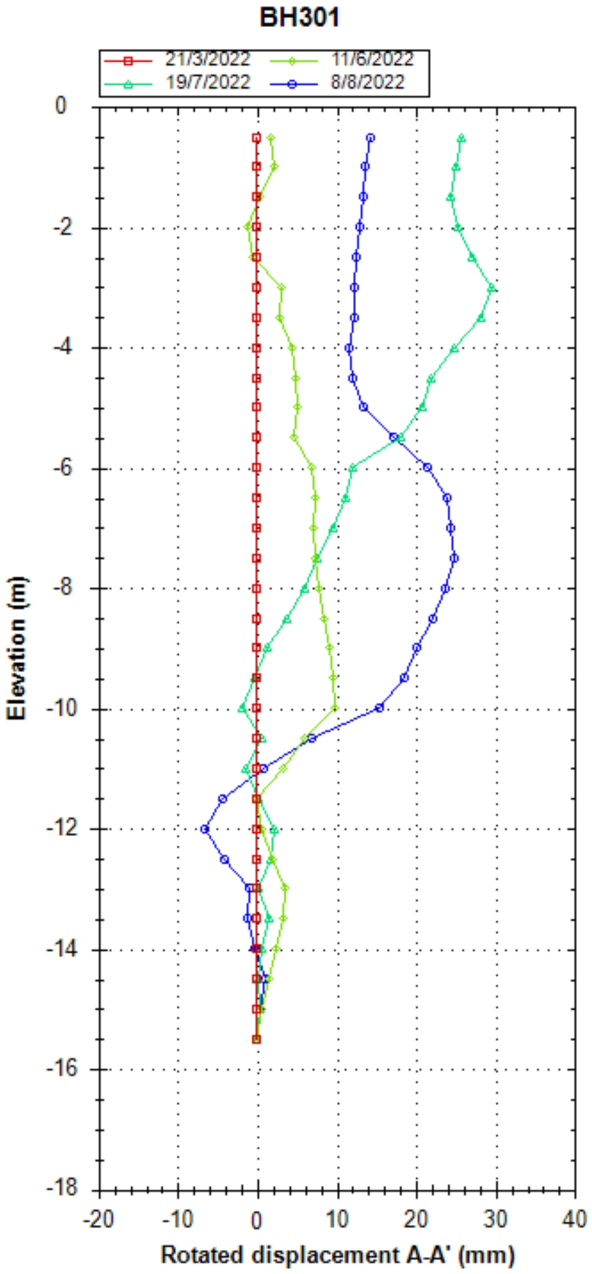

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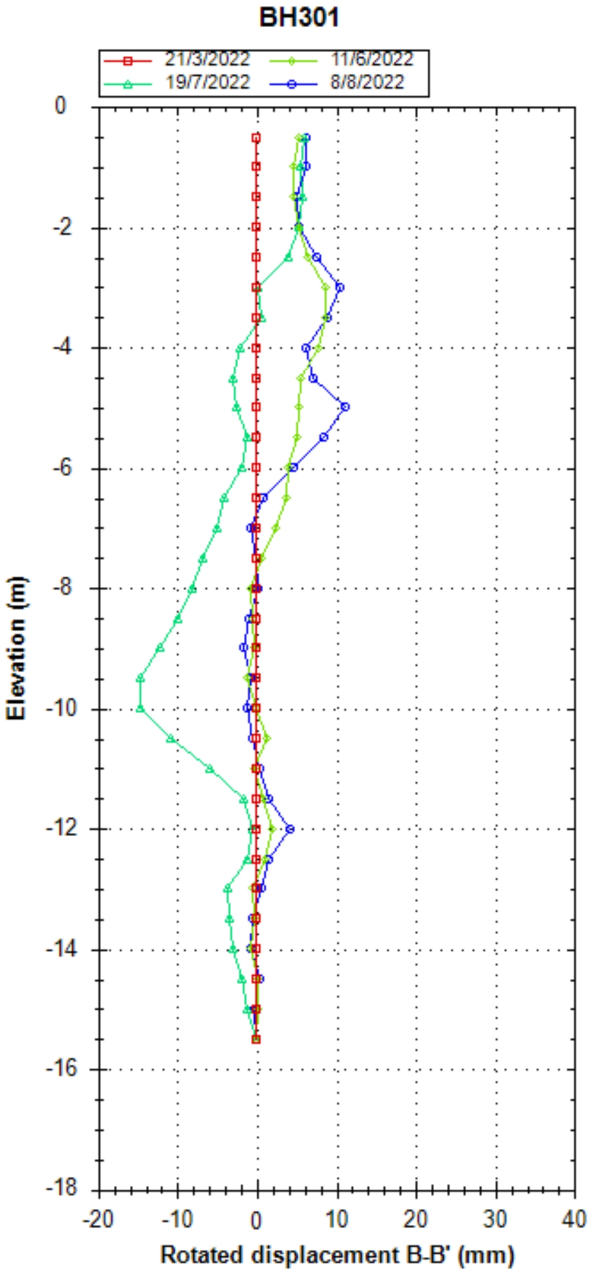


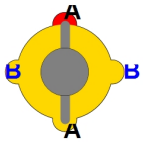



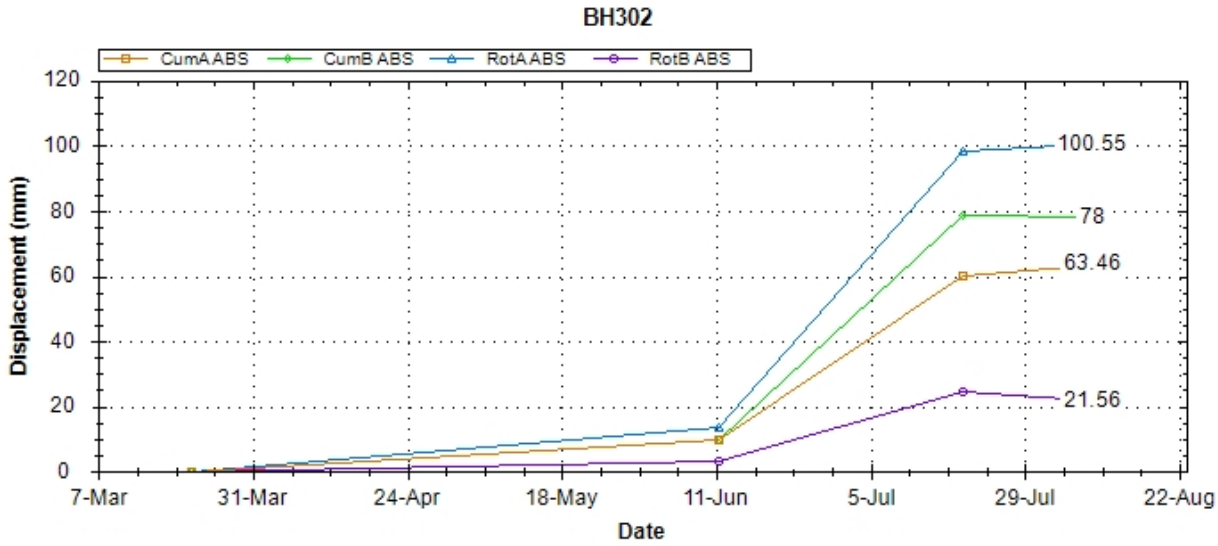

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Bottom elevation: -15.5
Alpha (deg): 0
Last reading: 8/8/2022 11:54:24 AM

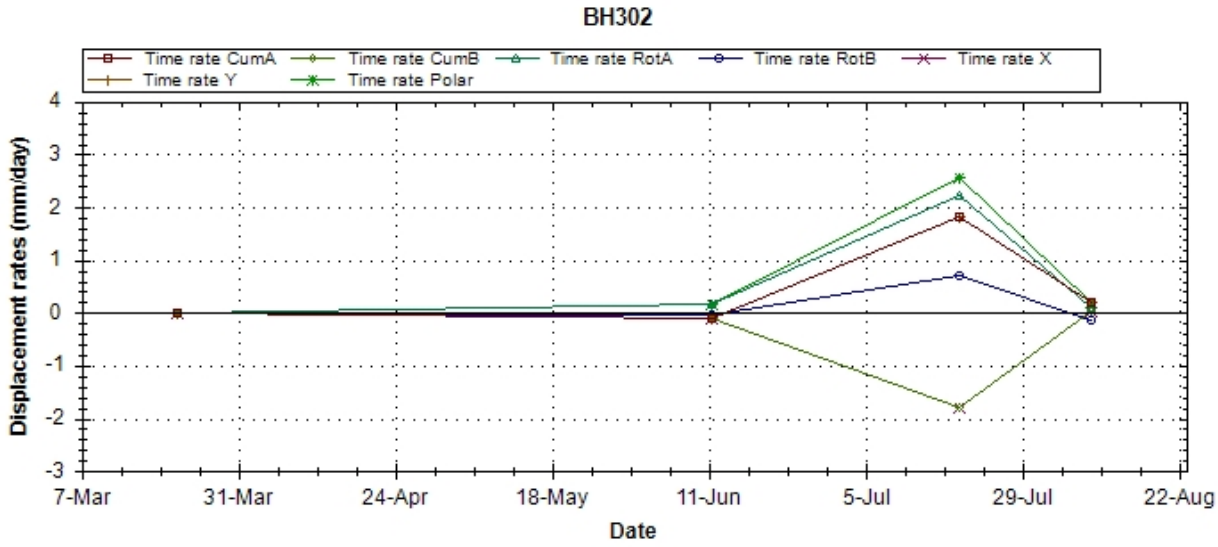


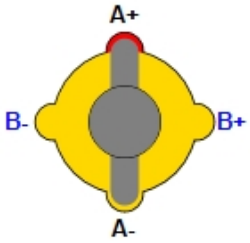



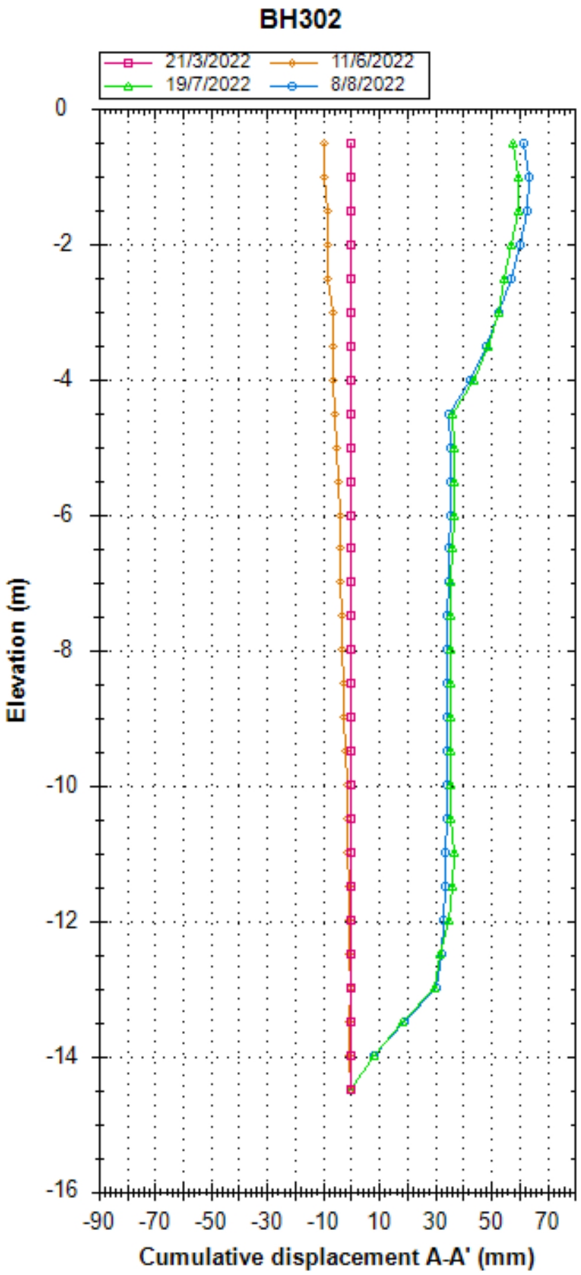



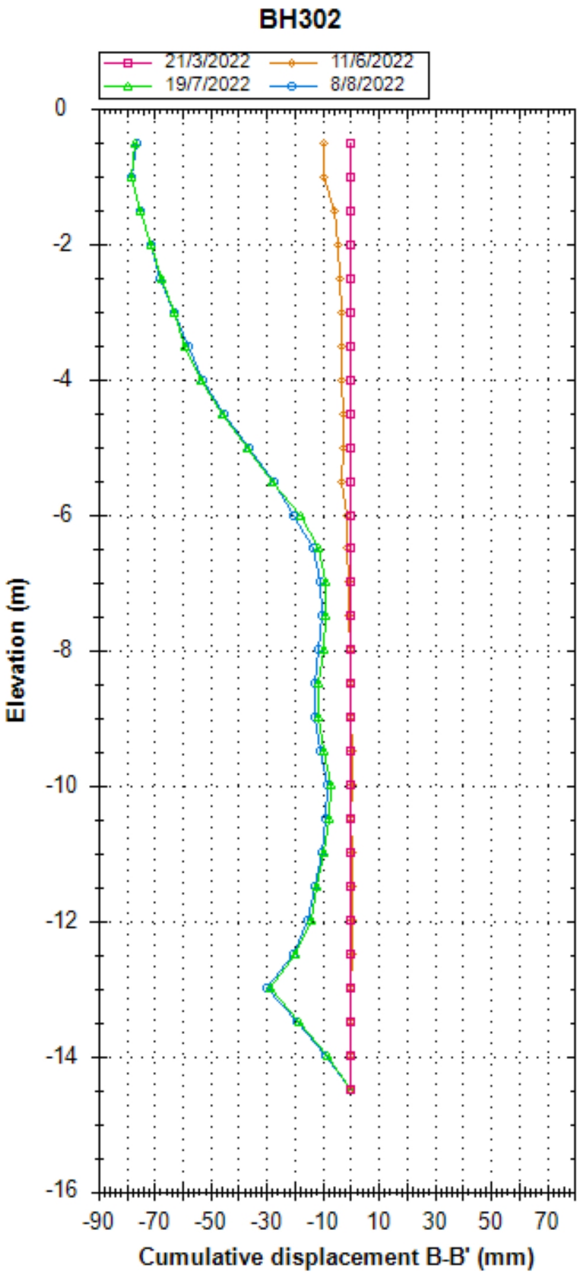

Inst. date:
Top elevation: 0
Bottom elevation: -15.5
Alpha (deg): 0
Last reading: 8/8/2022 11:54:24 AM
Rotated A+: 24.88, A-: -6.71
Rotated B+: 11.03, B-: -1.73

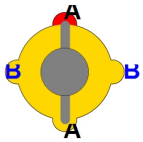

BH302
CumA ABS
CumB ABS
RotA ABS
RotB ABS
Displacement (mm)
120
100
80
60
40
20
0
100.55
78
63.46
21.56
7-Mar
31-Mar
24-Apr
18-May
11-Jun
5-Jul
29-Jul
22-Aug
Date


BH302
Time rate CumA
Time rate CumB
Time rate RotA
Time rate RotB
Time rate X
Time rate Y
Time rate Polar
Displacement rates (mm/day)
4
3
2
1
0
-1
-2
-3
7-Mar
31-Mar
24-Apr
18-May
11-Jun
5-Jul
29-Jul
22-Aug
Date

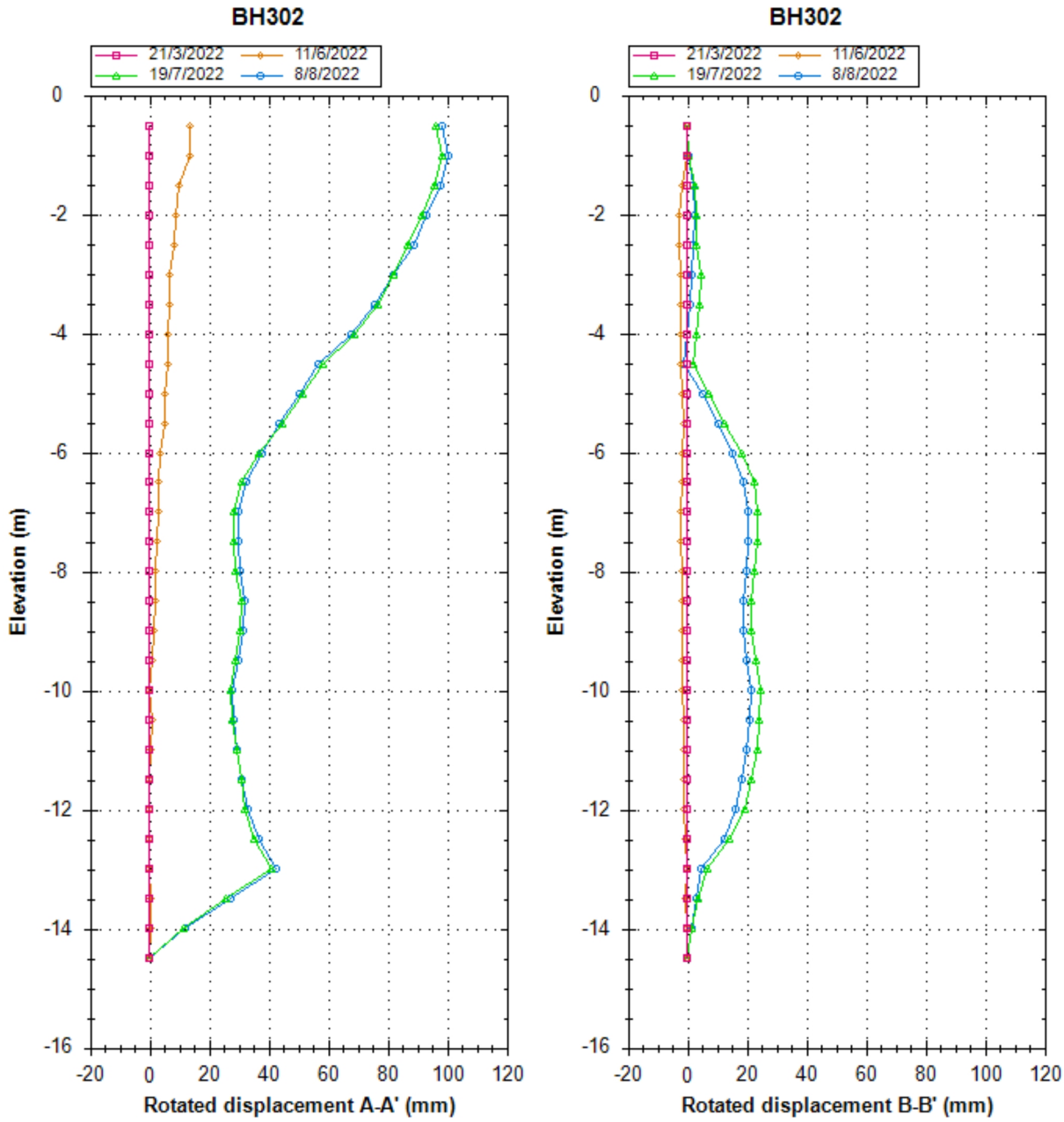

A+
B-
B+
A-

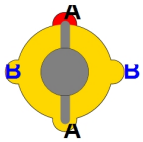


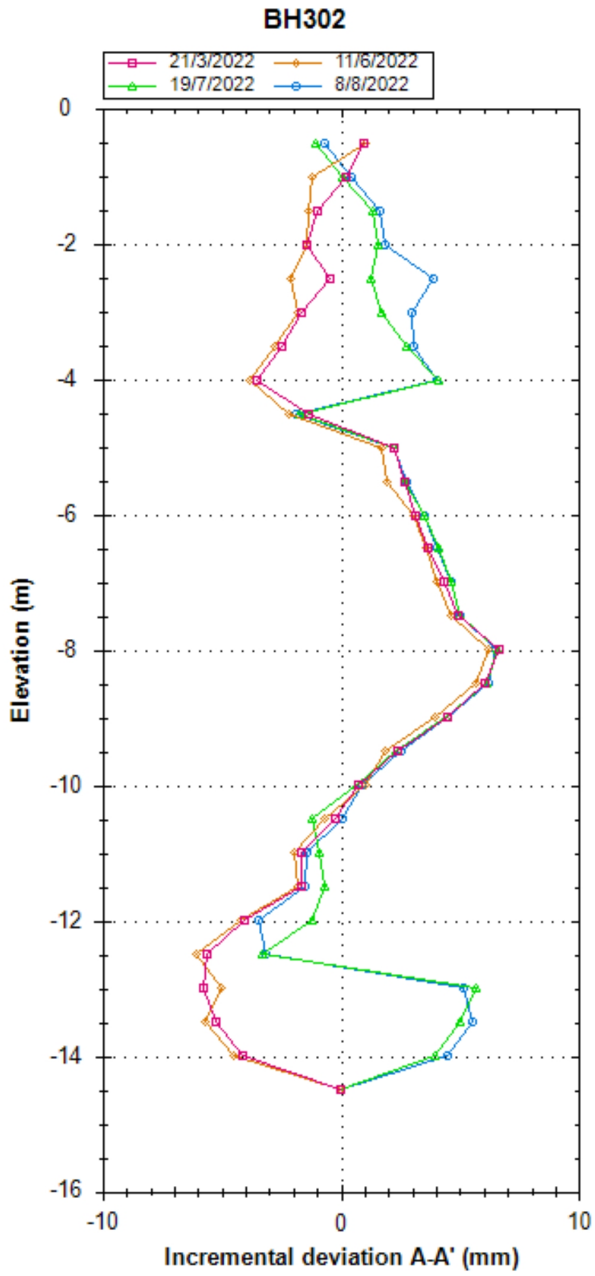



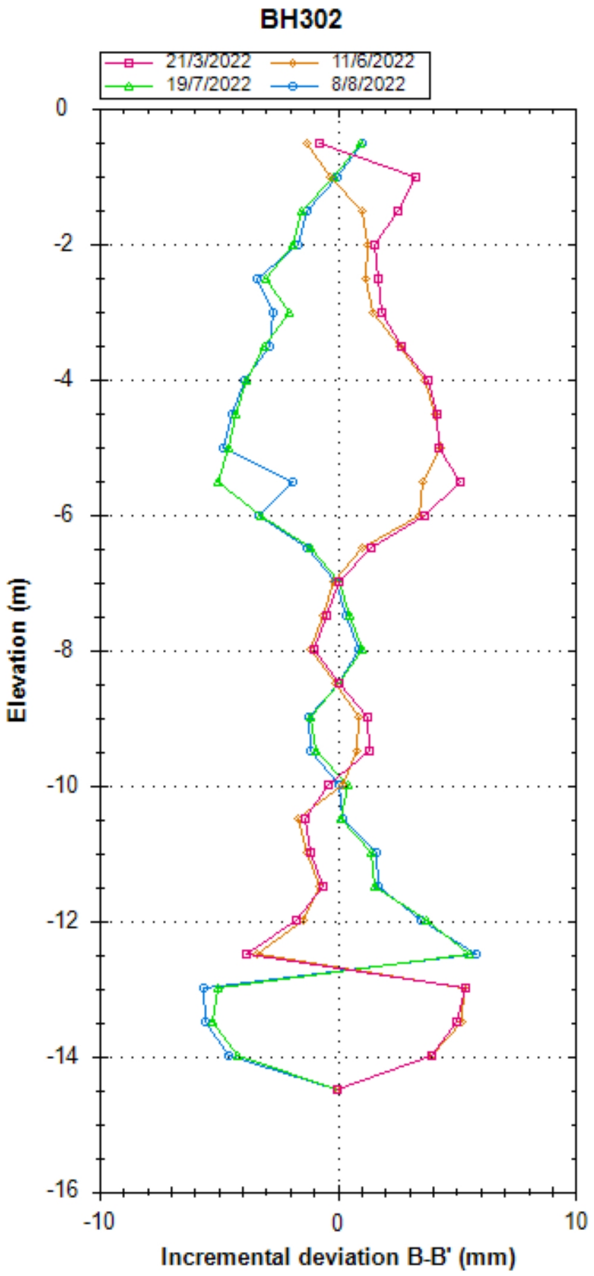

Inst. date:
Top elevation: 0
Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM
Cumulative A+: 63.46, A-: 0
Cumulative B+: 0, B-: -78

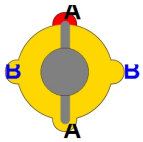


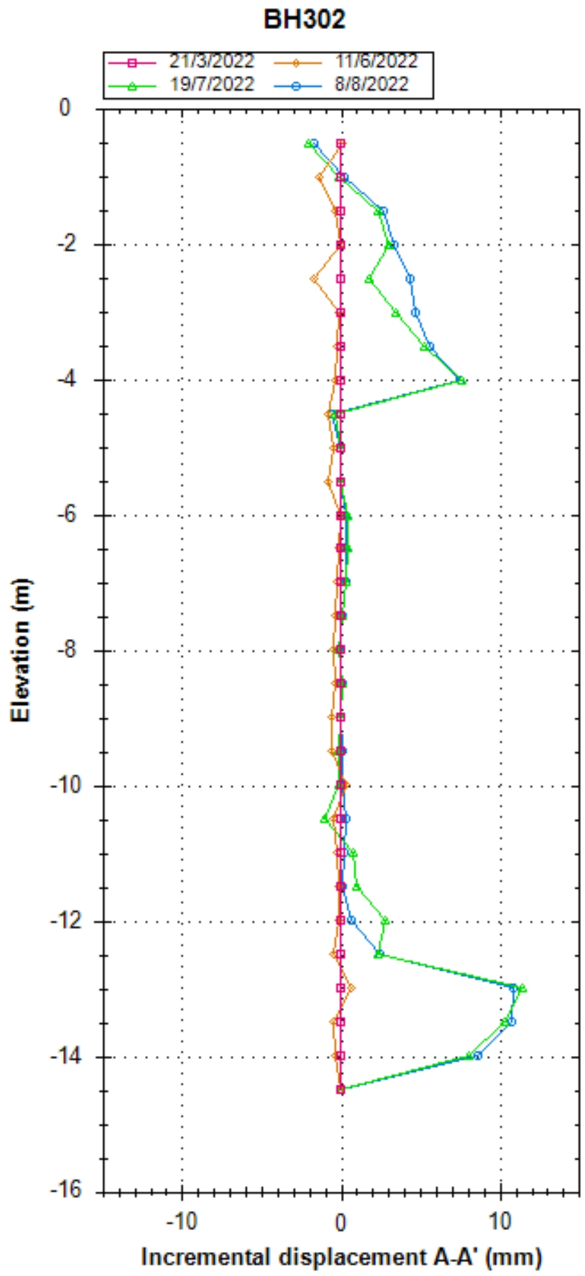

Inst. date:
Top elevation: 0
Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM
Rotated A+: 100.55, A-: 0
Rotated B+: 21.56, B-: -0.96

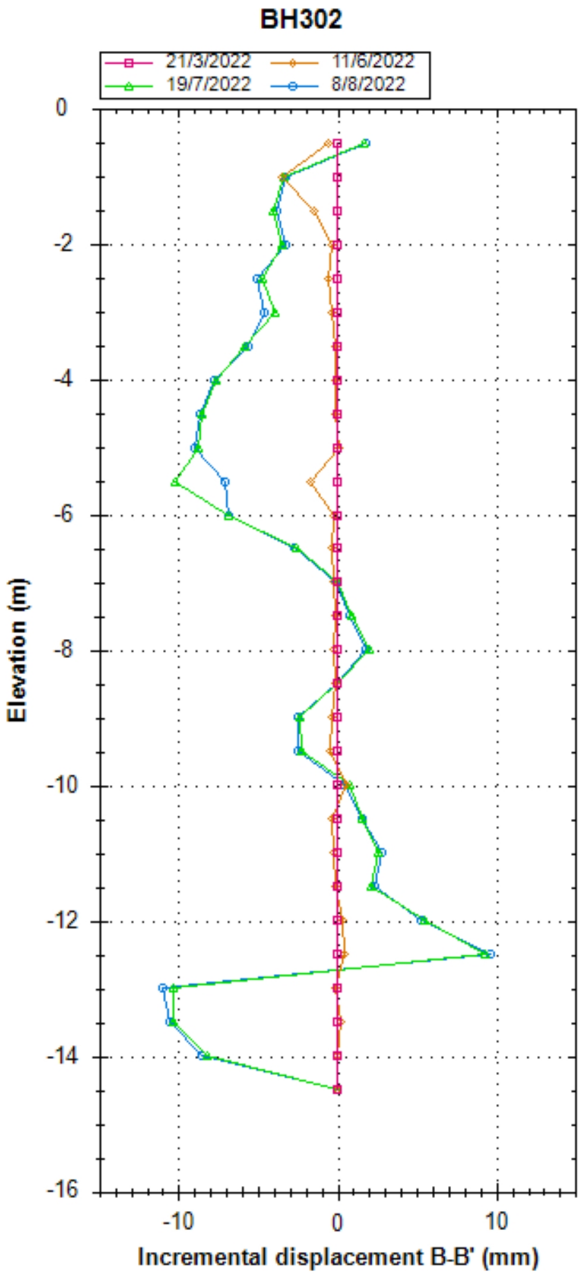


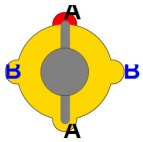



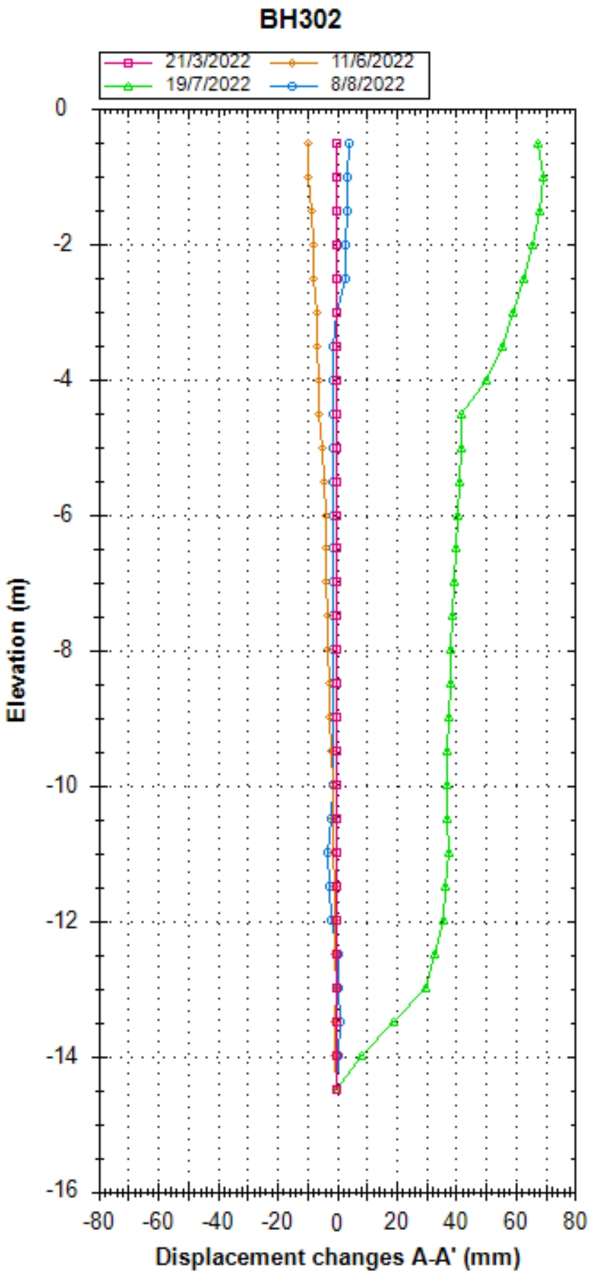

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Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM

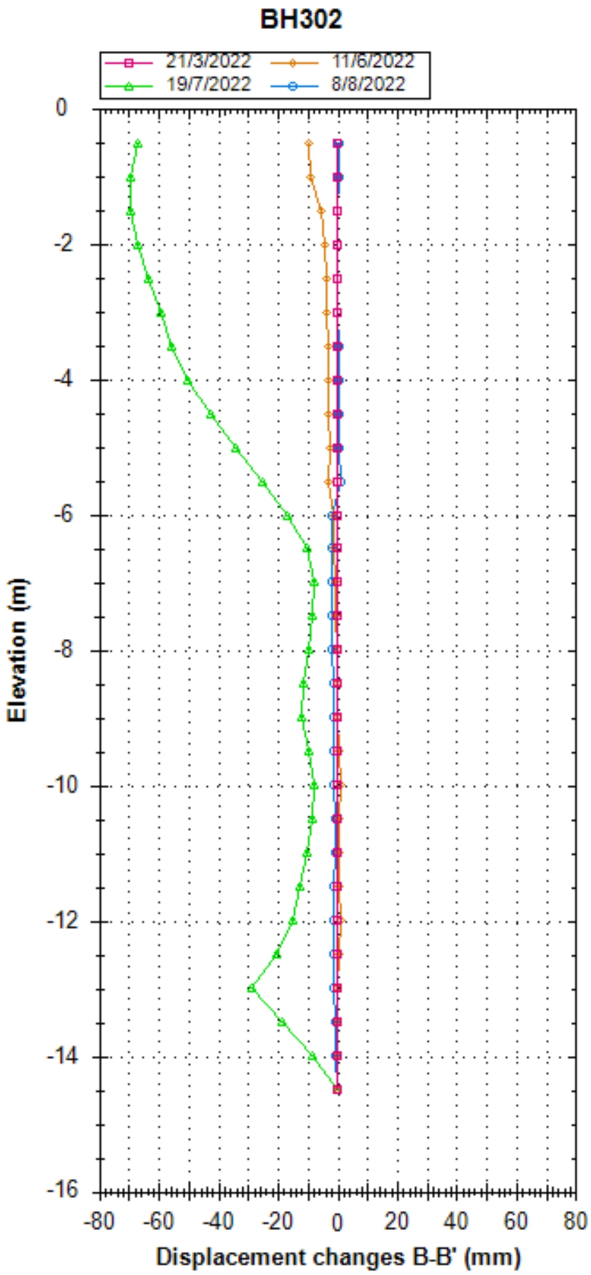


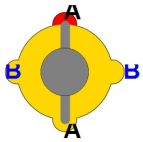



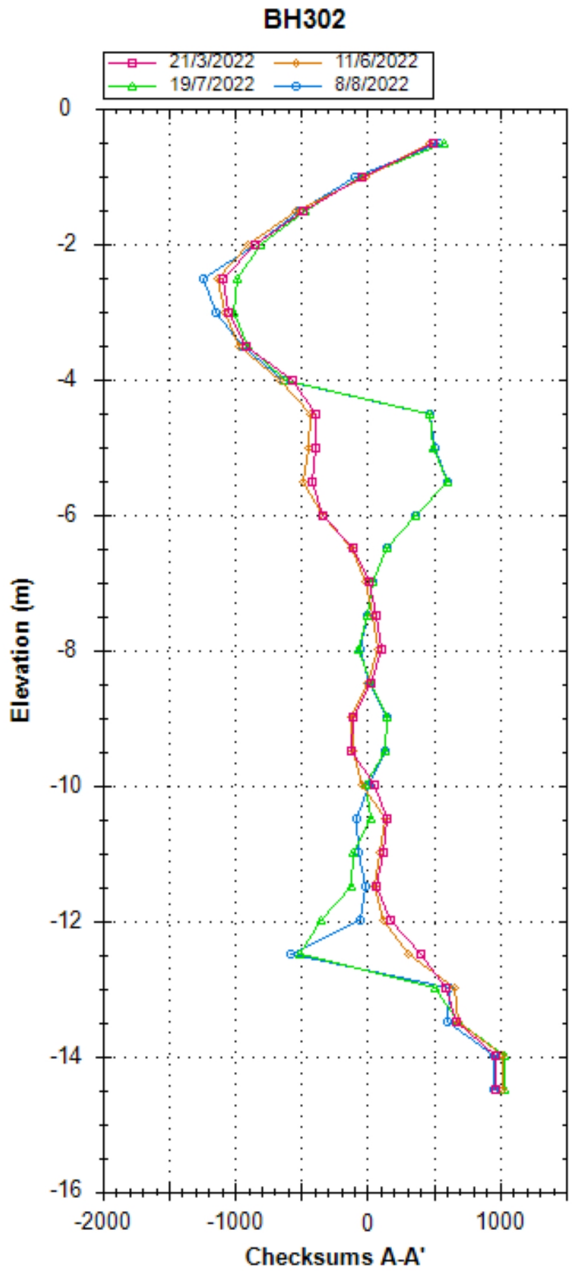

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Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM

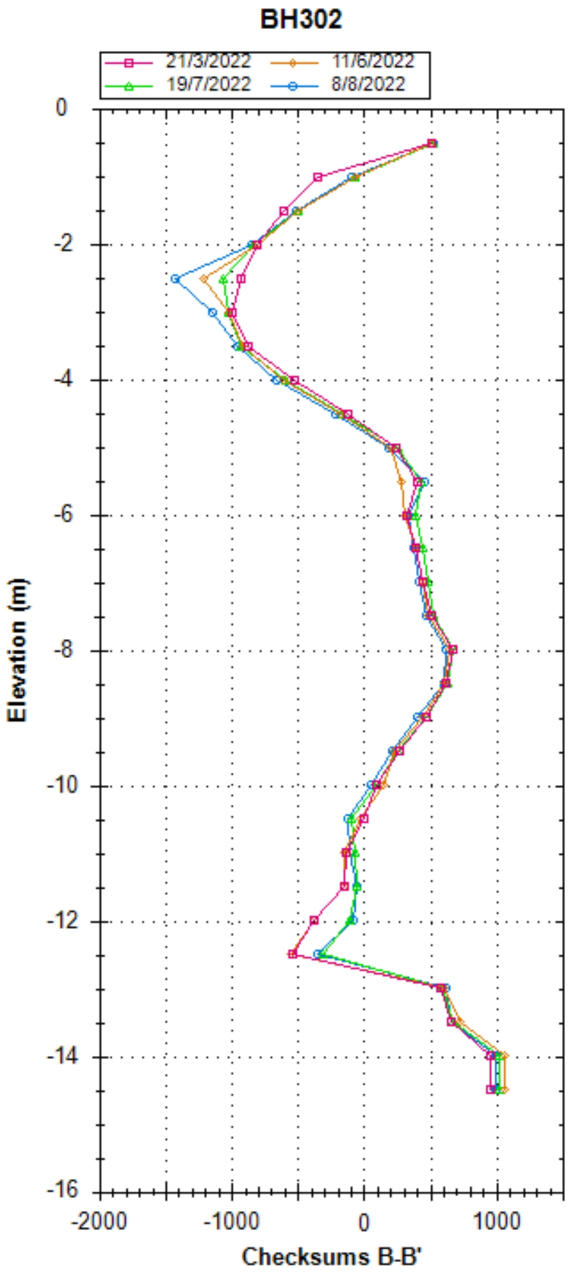


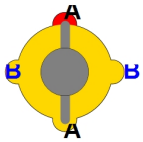



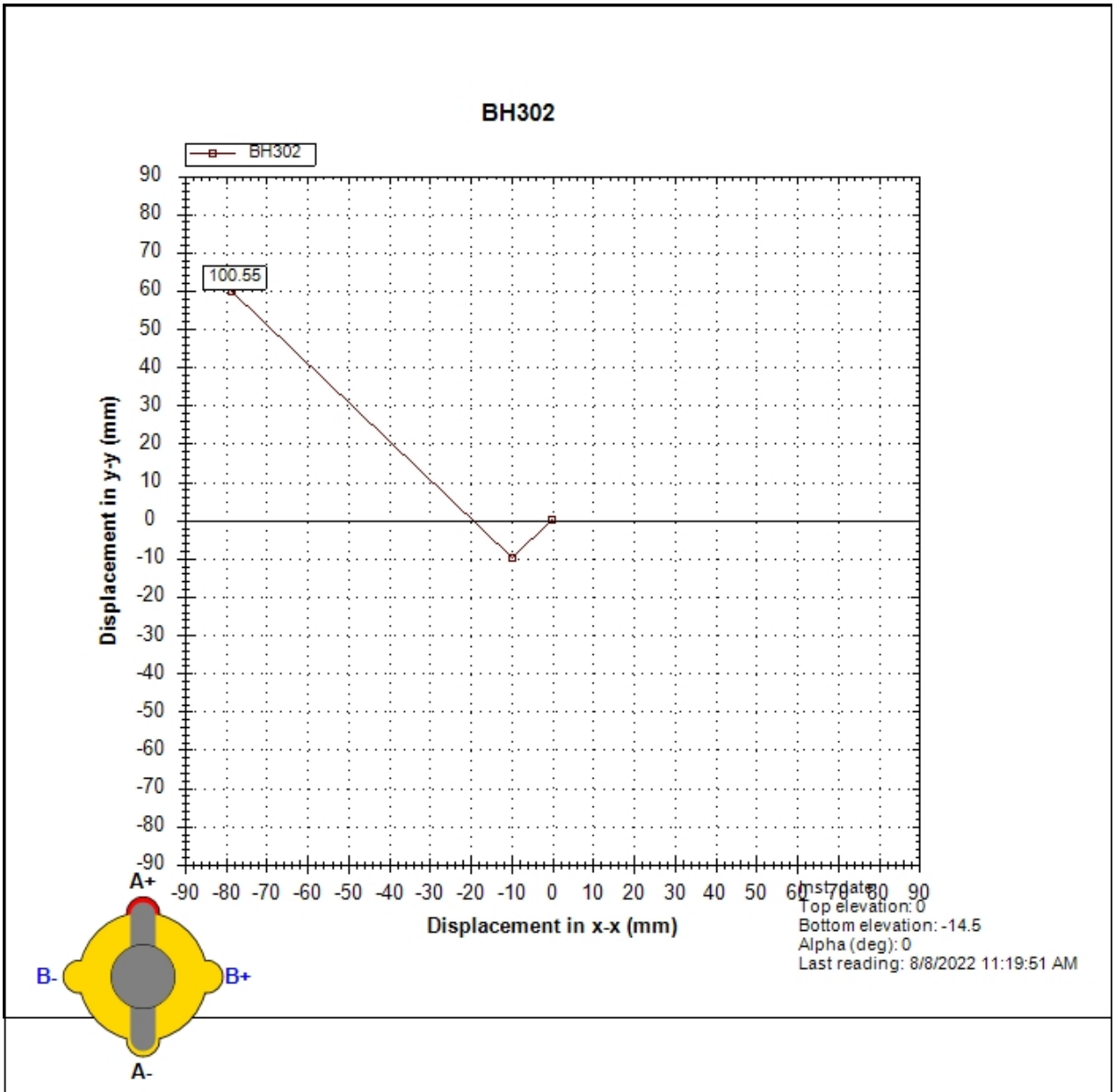

Inst. date:
Top elevation: 0
Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM
Velocity A: 0.1798 mm/day
Velocity B: 0.0177 mm/day



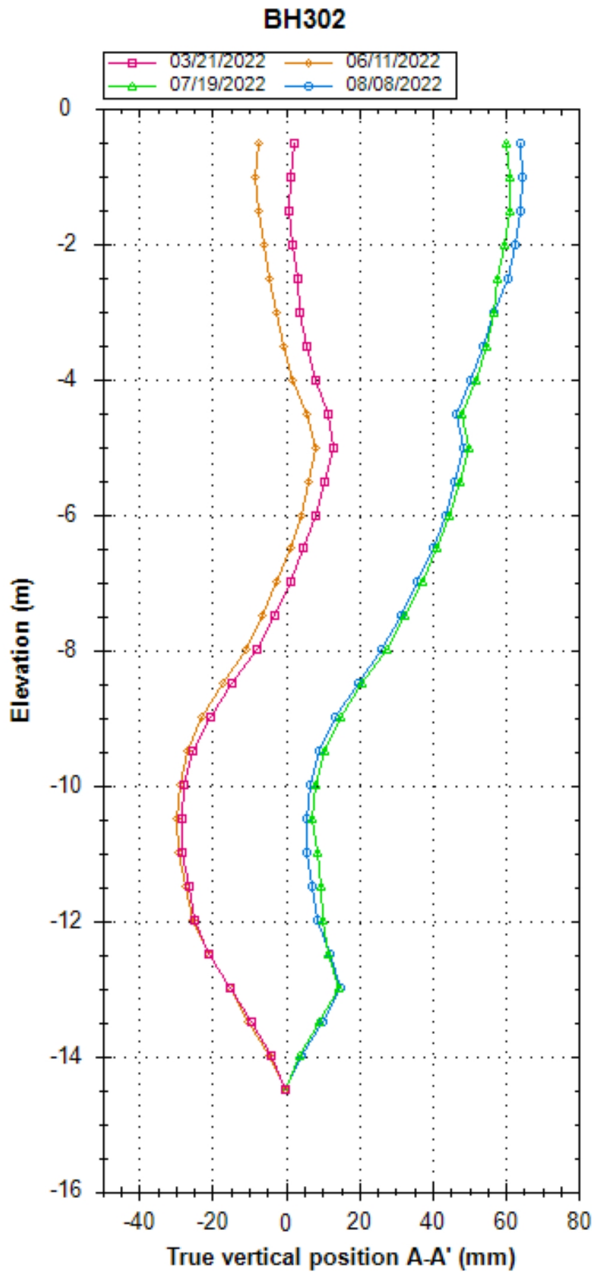



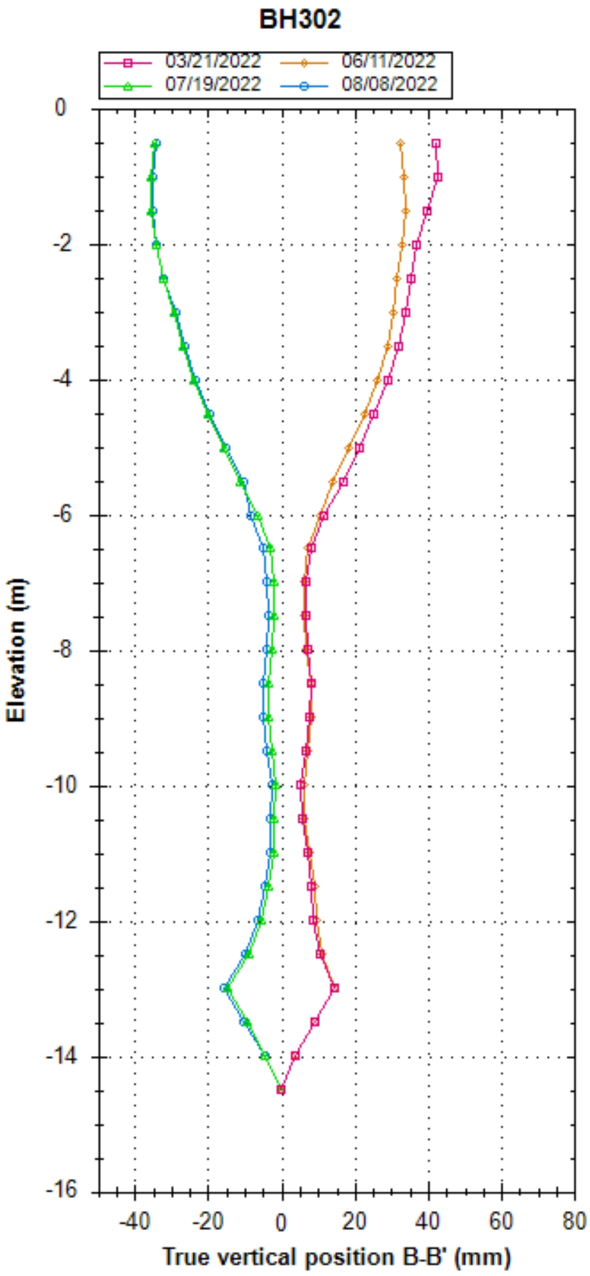



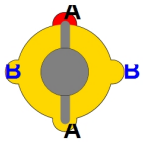

Inst. date:
Top elevation: 0
Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM



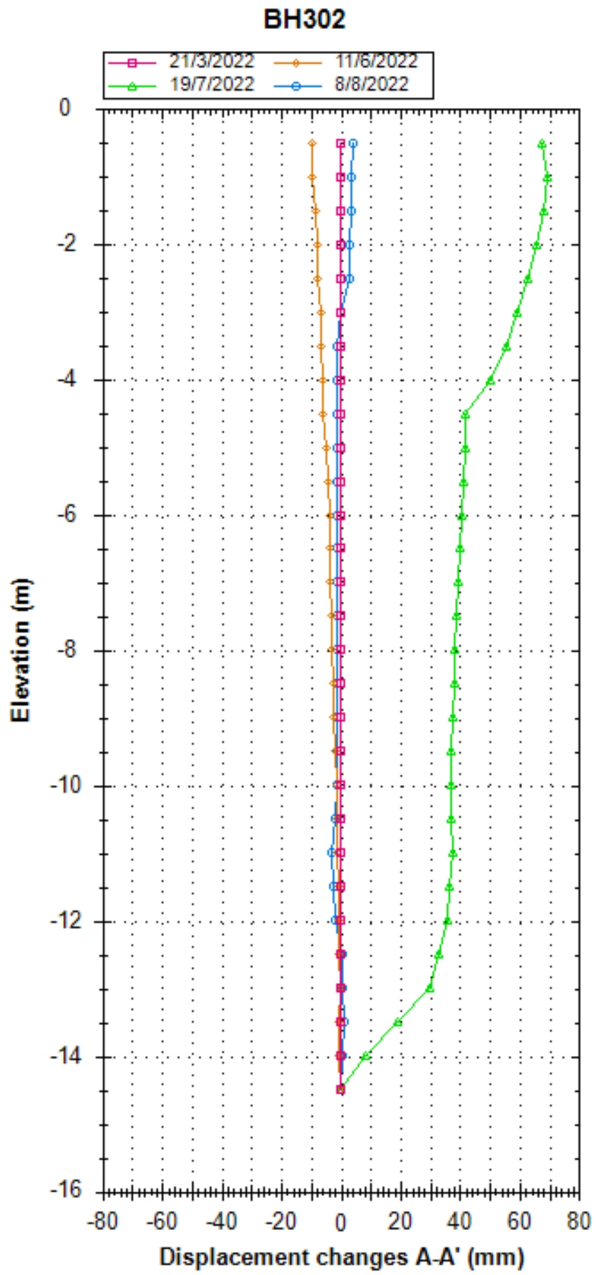

| | | |
|---|---|---|
| Company name: BAM Ritchies<br>Prepared by: APB | Polar displacements (max displacement) | Deep Excavation LCC<br>SiteMaster 2020 |
| | | 10/20/2022 |

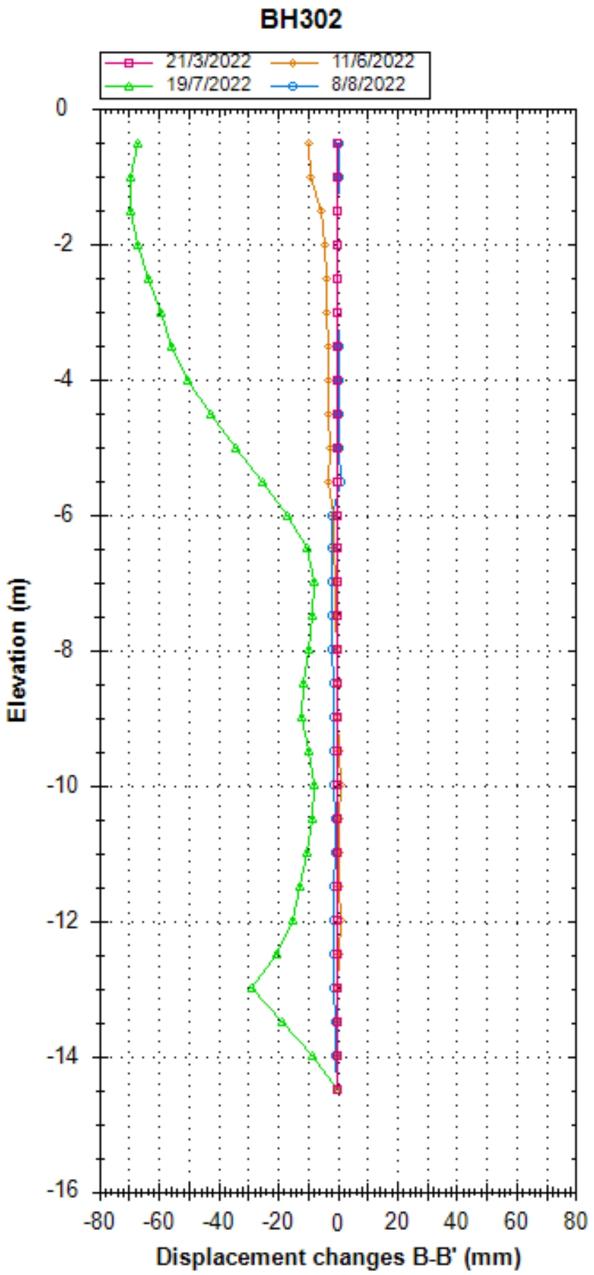


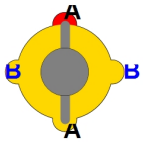



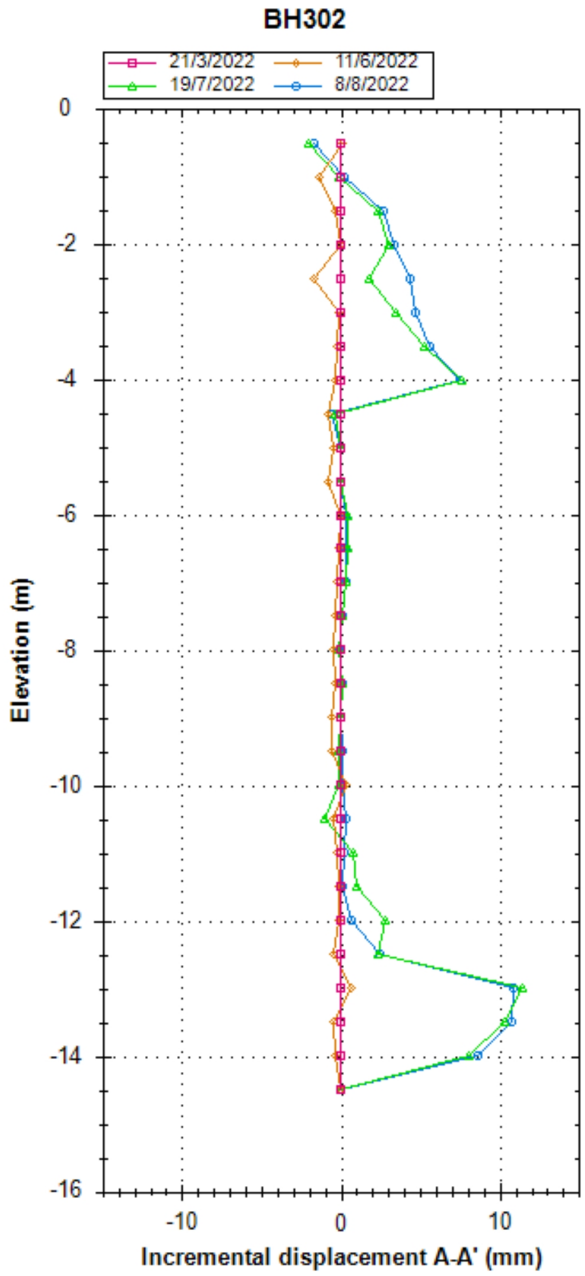

Inst. date:
Top elevation: 0
Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM

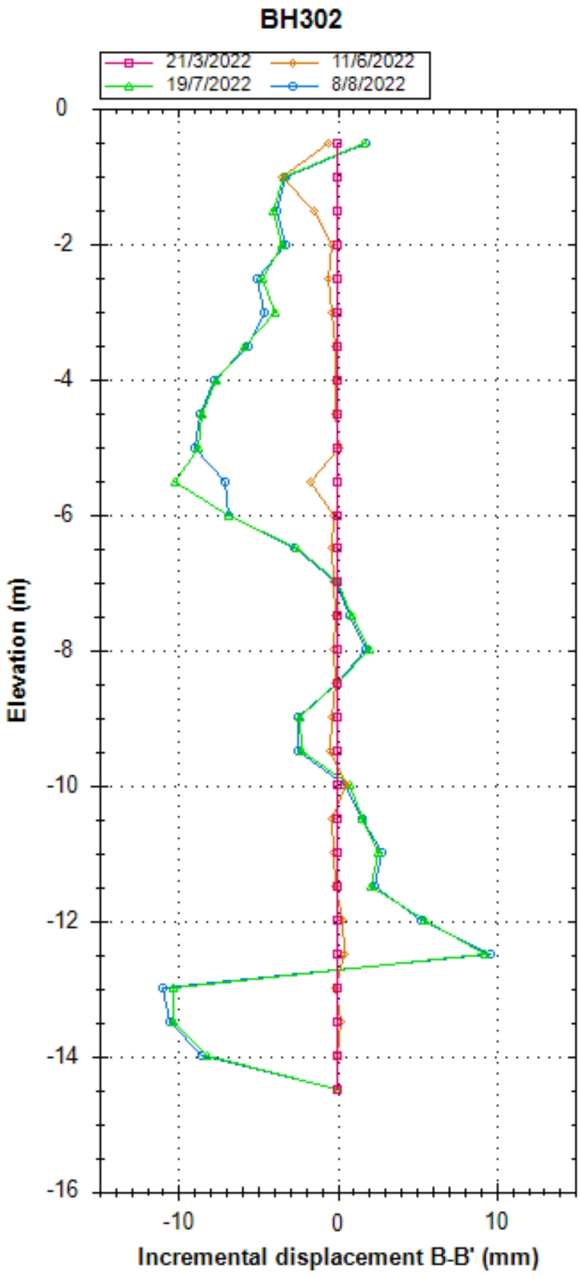


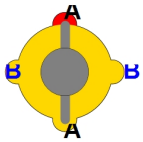



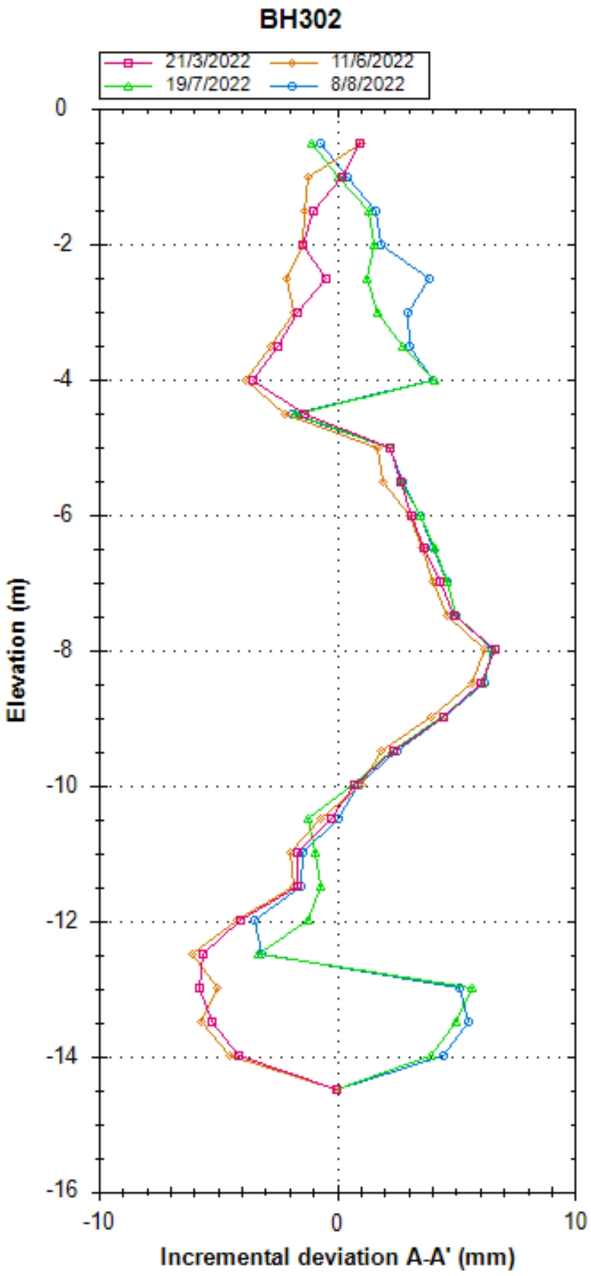

Inst. date:
Top elevation: 0
Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM
Velocity A: 0.1798 mm/day
Velocity B: 0.0177 mm/day

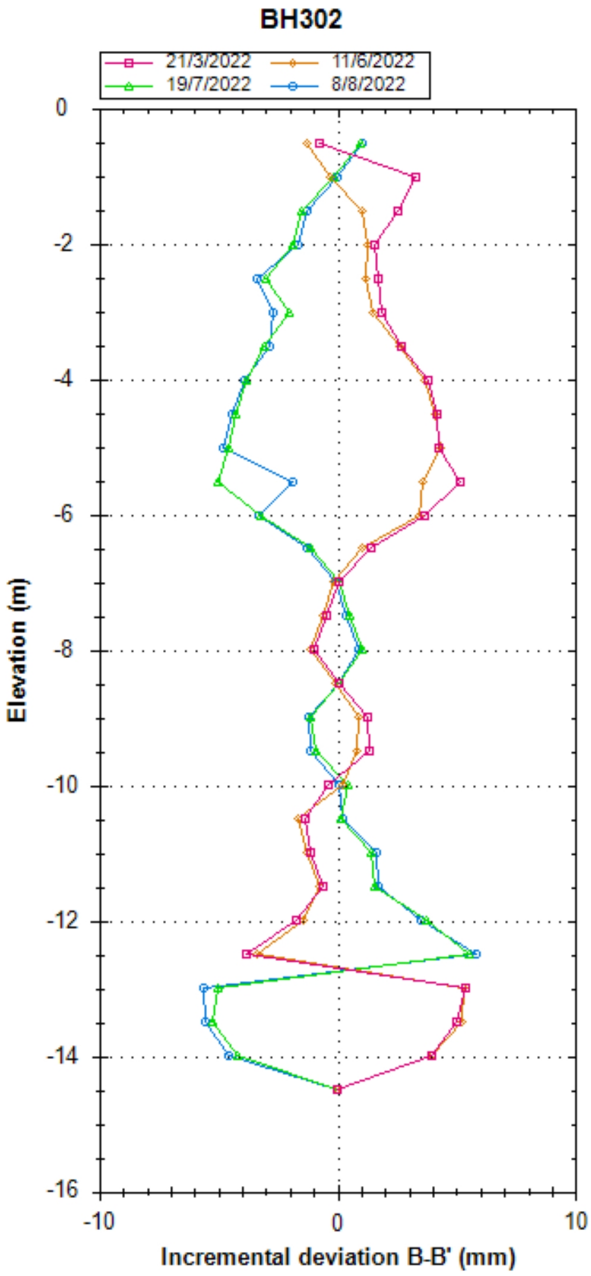


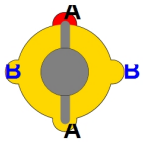



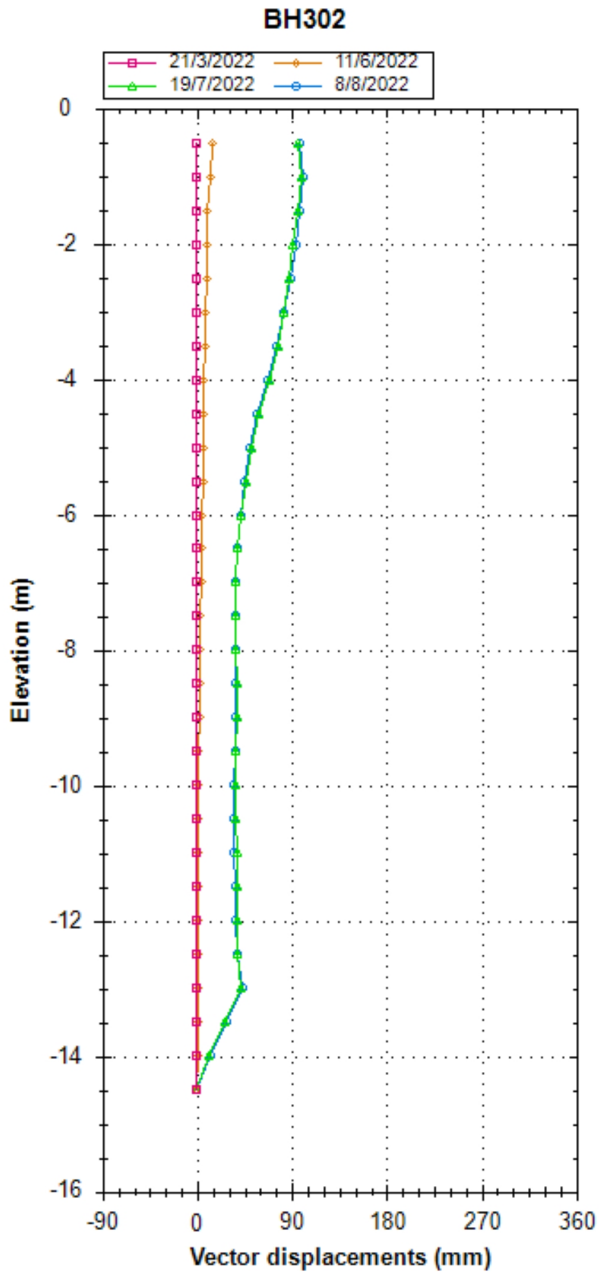

Inst. date:
Top elevation: 0
Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM

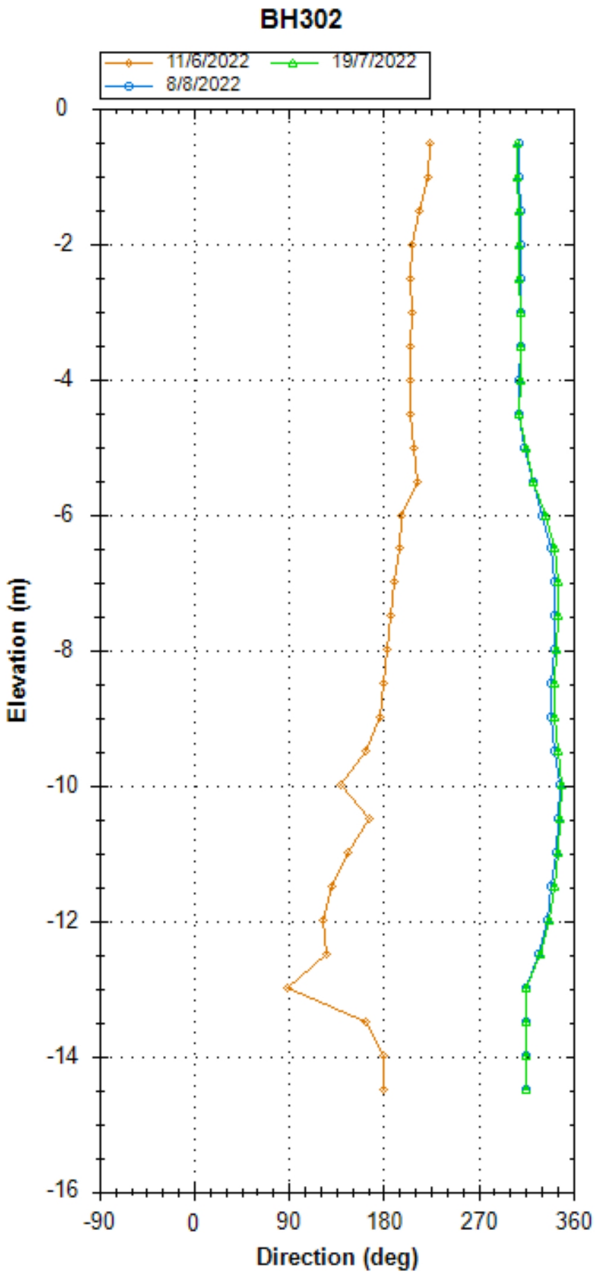


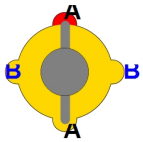



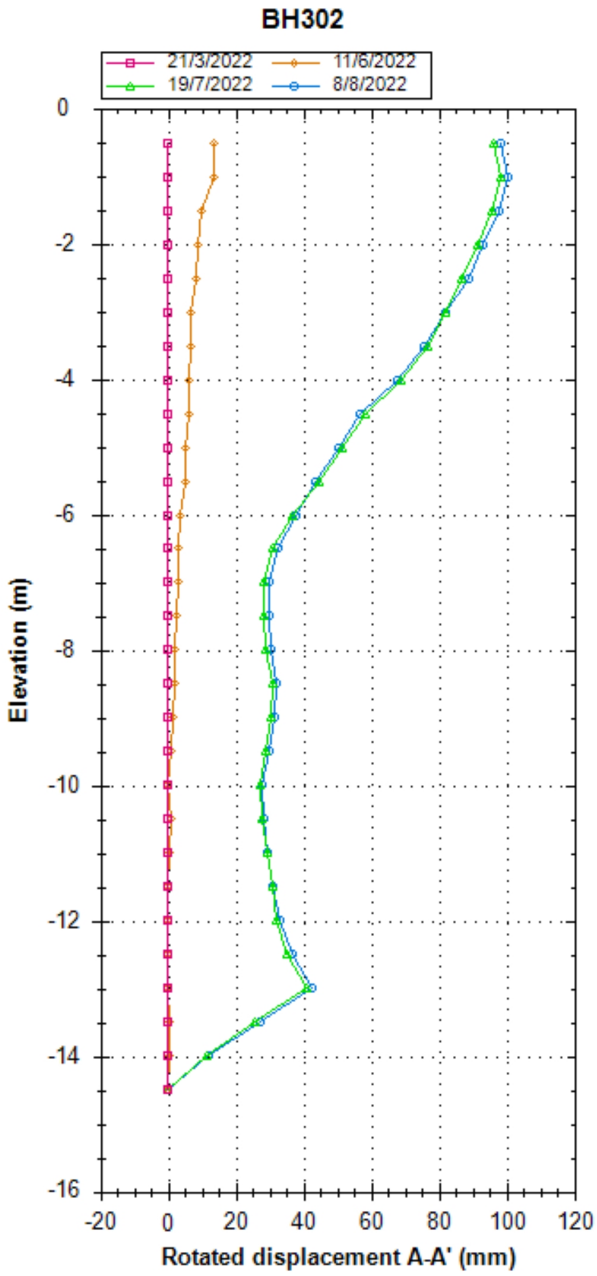

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Top elevation: 0
Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM

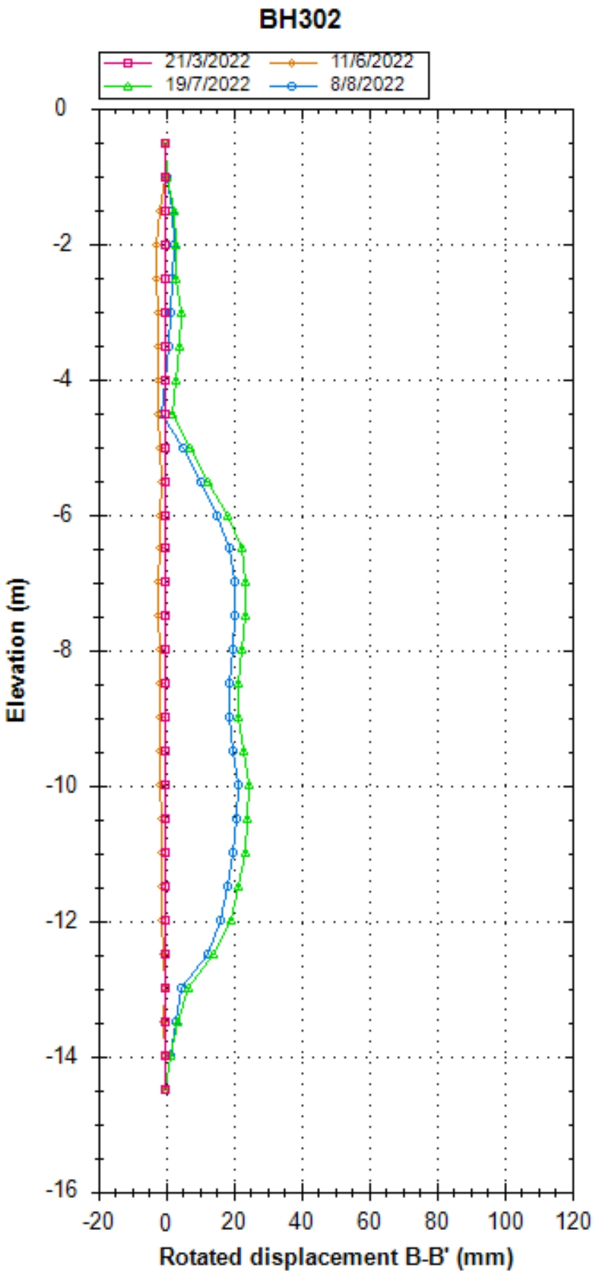


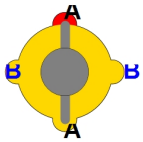




Inst. date:
Top elevation: 0
Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM




Inst. date:
Top elevation: 0
Bottom elevation: -14.5
Alpha (deg): 0
Last reading: 8/8/2022 11:19:51 AM
Rotated A+: 100.55, A-: 0
Rotated B+: 21.56, B-: -0.96

**Appendix 3**

3 Geo environmental Testing

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT
## SUPPLEMENT TO TEST REPORT 22/01728/1

**Amendments:** Request for Additional Analysis

**Envirolab Job Number:** 22/01728
**Issue Number:** 2 **Date:** 28 March, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 16/02/22
**Date Instructions Received:** 25/02/22
**Date Analysis Completed:** 28/03/22

**Approved by:**



Richard Wong
Client Manager

**Envirolab Job Number: 22/01728**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| % Stones >10mm$_A$ | 21.8 | 1.9 | <0.1 | | | | | % w/w | 0.1 | A-T-044 |
| pH$_D$ M# | - | 6.13 | - | | | | | pH | 0.01 | A-T-031s |
| pH BRE$_D$ M# | 7.20 | - | - | | | | | pH | 0.01 | A-T-031s |
| Sulphate BRE (water sol 2:1)$_D$ M# | 33 | - | - | | | | | mg/l | 10 | A-T-026s |
| Sulphate BRE (acid sol)$_D$ M# | 0.09 | - | - | | | | | % w/w | 0.02 | A-T-028s |
| Sulphur BRE (total)$_D$ | 0.09 | - | - | | | | | % w/w | 0.01 | A-T-024s |
| Cyanide (free)$_A$ M# | - | <1 | - | | | | | mg/kg | 1 | A-T-042sFCN |
| Cyanide (complex)$_A$ M# | - | <1 | - | | | | | mg/kg | 1 | A-T-042sCCN |
| Cyanide (total)$_A$ M# | - | <1 | - | | | | | mg/kg | 1 | A-T-042sTCN |
| Thiocyanate$_A$ | - | <5 | - | | | | | mg/kg | 5 | A-T-041s |
| Phenols - Total by HPLC$_A$ | - | <0.2 | - | | | | | mg/kg | 0.2 | A-T-050s |
| Total Organic Carbon$_D$ M# | - | 34.2 | 16.2 | | | | | % w/w | 0.03 | A-T-032s |
| Aluminium$_D$ | - | 9680 | - | | | | | mg/kg | 1 | A-T-024s |
| Antimony$_D$ | - | <5 | - | | | | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$ M# | - | 45 | - | | | | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | - | 1.0 | - | | | | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | - | <1.0 | - | | | | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$ M# | - | 3.5 | - | | | | | mg/kg | 0.5 | A-T-024s |
| Copper$_D$ M# | - | 92 | - | | | | | mg/kg | 1 | A-T-024s |
| Chromium$_D$ M# | - | 15 | - | | | | | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | - | <1 | - | | | | | mg/kg | 1 | A-T-040s |
| Lead$_D$ M# | - | 130 | - | | | | | mg/kg | 1 | A-T-024s |
| Manganese$_D$ M# | - | 411 | - | | | | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | - | <0.17 | - | | | | | mg/kg | 0.17 | A-T-024s |
| Nickel$_D$ M# | - | 22 | - | | | | | mg/kg | 1 | A-T-024s |
| Selenium$_D$ M# | - | 2 | - | | | | | mg/kg | 1 | A-T-024s |
| Tin$_D$ | - | <5 | - | | | | | mg/kg | 5 | A-T-024s |
| Titanium$_D$ | - | 67 | - | | | | | mg/kg | 5 | A-T-024s |
| Vanadium$_D$ M# | - | 26 | - | | | | | mg/kg | 1 | A-T-024s |
| Zinc$_D$ M# | - | 355 | - | | | | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/01728**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| **Acid Herbicides (Suite 3+)** | | | | | | | | | | |
| 2,3,6-TBA$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-D$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DB$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-T$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex)$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 4-CPA$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Benazolin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Bentazone$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Bromacil$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Bromoxynil$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Clopyralid$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Dicamba$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Diclofop$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop-isopropyl$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Fluroxypyr$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Ioxynil$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPA$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPB$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPP; (Mecoprop)$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| PCP; (Pentachlorophenol)$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Picloram$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Triclopyr$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/01728**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | - | NAD | - | | | | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | | | | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | | | | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | - | N/A | - | | | | | | | A-T-045 |

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| **Carb+Urea Herbs Suite1** | | | | | | | | | | |
| Carbetamide$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorbufam$_A$ | <0.50 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Chloroxuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorpropham$_A$ | <0.50 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlortoluron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Diflubenzuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Dimefuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Diuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Ethiofencarb$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Isoproturon$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Linuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Methabenzthiazuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Metoxuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Monolinuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Monuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Pencycuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Phenmedipham$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Pirimicarb$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Propham$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine and Simazine)** | | | | | | | | | | |
| Dichlobenil$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Tecnazene$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Trifluralin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| alpha-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Hexachlorobenzene (HCB)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Simazine$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Atrazine$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| beta-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Quintozene (PCNB)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Chlorothalonil$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| delta-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Triallate$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Heptachlor$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Aldrin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Triadimefon$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Telodrin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Isodrin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Pendimethalin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Heptachlor epoxide$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| trans-Chlordane (Gamma)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDE (2,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan I (Alpha)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| cis-Chlordane (Alpha)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDE (4,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Dieldrin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDD (2,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endrin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan II (Beta)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDD (4,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDT (2,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endrin Aldehyde$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endrin Ketone$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan Sulphate$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDT (4,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| o,p-Methoxychlor$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| p,p-Methoxychlor$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Permethrin I (cis)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Permethrin II (trans)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Dichlorvos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Mevinphos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| Demeton-S$_A$ | <0.50 | - | - | | | | | mg/kg | 0.5 | A-T-056 |
| Demeton-O$_A$ | <0.50 | - | - | | | | | mg/kg | 0.5 | A-T-056 |
| Phorate$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Dimethoate$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Propetamphos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Diazinon (Dimpylate)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Disulfoton$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | A-T-056 |
| Chlorpyrifos-methyl$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Parathion (Ethyl Parathion)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Methyl Parathion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Pirimiphos-methyl$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Fenitrothion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Fensulphothion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Fenthion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Malathion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Chlorfenvinphos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Chlorpyrifos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Trichloronate$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Prothiofos (Tokuthion)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Ethion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Triazophos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Carbophenothion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Phosalone$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Azinphos-methyl$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Azinphos-ethyl$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Coumaphos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |

**Envirolab Job Number: 22/01728**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| **ONP (Triazines Herbicides x11)** | | | | | | | | | | |
| Ametryne$_A$ | <0.2 | - | - | | | | | mg/kg | 0.2 | Subcon RPS MH |
| Atraton$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Atrazine$_A$ | <0.50 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Cyanazine$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Prometon$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Prometryn$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Propazine$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Simazine$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Simetryn$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Terbuthylazine$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Terbutryn$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/01728**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | - | 0.13 | - | | | | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | - | 0.01 | - | | | | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | - | 0.13 | - | | | | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | - | 0.34 | - | | | | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | - | 0.28 | - | | | | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | - | 0.37 | - | | | | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | - | 0.15 | - | | | | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | - | 0.16 | - | | | | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | - | 0.43 | - | | | | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | - | <0.04 | - | | | | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | - | 0.75 | - | | | | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | - | 0.07 | - | | | | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | - | 0.16 | - | | | | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | - | 0.23 | - | | | | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | - | 0.86 | - | | | | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | - | 0.74 | - | | | | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | - | 4.81 | - | | | | | mg/kg | 0.01 | A-T-019s |
| | | | | | | | | | | |
| **Pyrethroids (x6)** | | | | | | | | | | |
| Cyfluthrin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Cyhalothrin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Cypermethrin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Deltamethrin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Fenvalerate$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Permethrin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/01728**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| **Speciated PCB-WHO12** | | | | | | | | | | |
| PCB BZ 81$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 105$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 114$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 118$_A^{M\#}$ | - | <0.007 | - | | | | | mg/kg | 0.007 | A-T-004s |
| PCB BZ 123$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 126$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 156$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 157$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 167$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 169$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 189$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 77$_A$ | - | <0.005 | - | | | | | mg/kg | 0.005 | A-T-004s |
| Total Speciated PCB-WHO12$_A$ | - | <0.007 | - | | | | | mg/kg | 0.005 | A-T-004s |

**Envirolab Job Number: 22/01728**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| **SVOC** | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Hexachlorobenzene$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | - | 524 | - | | | | | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | - | 162 | - | | | | | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | - | <500 | - | | | | | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | - | 1160 | - | | | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Pentachlorophenol (SVOC)$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | - | <500 | - | | | | | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Isophorone$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |

Envirolab Job Number: 22/01728

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| Hexachloroethane$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | - | <100 | - | | | | | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | - | 293 | - | | | | | µg/kg | 100 | A-T-052s |

**Envirolab Job Number: 22/01728**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| **VOC** | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Chloromethane$_{A}$ | - | <250 | - | | | | | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Bromomethane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Chloroethane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Dichloromethane$_{A}$ | - | <125 | - | | | | | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_{A}^{\#}$ | - | <125 | - | | | | | µg/kg | 5 | A-T-006s |
| Chloroform$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_{A}^{\#}$ | - | <50 | - | | | | | µg/kg | 2 | A-T-006s |
| Benzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Trichloroethene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Dibromomethane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_{A}^{\#}$ | - | <250 | - | | | | | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Toluene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_{A}^{\#}$ | - | <75 | - | | | | | µg/kg | 3 | A-T-006s |
| 1,2-Dibromoethane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| Chlorobenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_{A}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| m & p Xylene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| o-Xylene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Styrene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Bromoform$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_{A}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| Bromobenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_{A}^{\#}$ | - | <50 | - | | | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_{A}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_{A}$ | - | <50 | - | | | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_{A}$ | - | <75 | - | | | | | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_{A}^{\#}$ | - | <25 | - | | | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_{A}$ | - | <75 | - | | | | | µg/kg | 3 | A-T-006s |

Envirolab Job Number: 22/01728

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | | | | | | | | |
| Client Sample ID | BH303 | BH303 | BH303 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 7.50 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 14-Feb-22 | 14-Feb-22 | 14-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | | | | | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | - | <0.05 | - | | | | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | - | <0.05 | - | | | | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | - | 13 | - | | | | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | - | 10 | - | | | | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | - | 18 | - | | | | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | - | 17 | - | | | | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | - | 17 | - | | | | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | - | 3 | - | | | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | - | 79 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | - | <0.05 | - | | | | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | - | <0.05 | - | | | | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | - | 9 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | - | 12 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | - | 48 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | - | 66 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | - | 77 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | - | 2 | - | | | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | - | 213 | - | | | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | - | 292 | - | | | | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | - | <0.05 | - | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | - | <0.05 | - | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | - | <0.05 | - | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | - | <0.05 | - | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | - | <0.05 | - | | | | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | - | <0.05 | - | | | | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project No:** 22/01728

**Date Received:** 25/02/2022 (am)

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Cool Box Temperatures (°C):** 11.5

**Clients Project No:** 326R

| Lab Sample ID | 22/01728/2 | 22/01728/9 |
|---|---|---|
| Client Sample No | 303ES02 | |
| Client Sample ID/Depth | BH303 0.50m | BH303 7.50m |
| Date Sampled | 14/02/22 | 14/02/22 |
| Deviation Code | | |
| F | ✓ | ✓ |

*Key*

*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/01728/2 | 22/01728/9 |
|---|---|---|
| Client Sample No | 303ES02 | |
| Client Sample ID/Depth | BH303 0.50m | BH303 7.50m |
| Date Sampled | 14/02/22 | 14/02/22 |
| Cyanide (total) | ✓ | |
| VPHCWG | ✓ | |
| PAH-16MS | ✓ | |
| VOC | ✓ | |
| SVOC | ✓ | |
| Cyanide (free) | ✓ | |
| PCB Total | | ✓ |
| Total Organic Carbon | | ✓ |
| Mineral Oil (>C10-C40) | | ✓ |
| PAH (total 17) | | ✓ |
| BTEX (total) | | ✓ |

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/01728/1 | 22/01728/2 | 22/01728/9 |
|---|---|---|---|
| Client Sample No | 303ES01 | 303ES02 | |
| Client Sample ID/Depth | BH303 0.30m | BH303 0.50m | BH303 7.50m |
| Date Sampled | 14/02/22 | 14/02/22 | 14/02/22 |
| A-T-004s | | 04/03/2022 | 21/03/2022 |
| A-T-006s | | 04/03/2022 | |
| A-T-007s | | | 21/03/2022 |
| A-T-019s | | 04/03/2022 | 21/03/2022 |
| A-T-022s | | 07/03/2022 | 22/03/2022 |
| A-T-024s | 08/03/2022 | 08/03/2022 | |
| A-T-025w | | | 28/03/2022 |
| A-T-026s | 07/03/2022 | | |
| A-T-026w | | | 28/03/2022 |
| A-T-027s | | 09/03/2022 | |
| A-T-028s | 08/03/2022 | | |
| A-T-031s | 08/03/2022 | 08/03/2022 | |
| A-T-031w | | | 28/03/2022 |
| A-T-032s | | 08/03/2022 | 25/03/2022 |
| A-T-032w | | | 28/03/2022 |
| A-T-037w | | | 28/03/2022 |
| A-T-040s | | 07/03/2022 | |
| A-T-041s | | 07/03/2022 | |
| A-T-042sCCN | | 08/03/2022 | |
| A-T-042sFCN | | 08/03/2022 | |
| A-T-042sTCN | | 08/03/2022 | |
| A-T-044 | 08/03/2022 | 08/03/2022 | 24/03/2022 |
| A-T-045 | | 28/02/2022 | |
| A-T-050s | | 08/03/2022 | |
| A-T-050w | | | 28/03/2022 |
| A-T-052s | | 07/03/2022 | |
| A-T-055s | | 07/03/2022 | |
| A-T-056 | 04/03/2022 | | |
| Calc-no stones | | | 28/03/2022 |
| Probe (w) | | | 28/03/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | | | |
|---|---|---|---|
| Envirolab Job Number: | 22/01728 | | |
| Issue Number: | 1 | Date: | 28-Mar-22 |

Client: BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK, WA5 7ZT

| | |
|---|---|
| Project Manager: | Andy Bird |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project Ref: | 326R |
| Order No: | RIT 262 915 759 |
| Date Samples Received: | 16-Feb-22 |
| Date Instructions Received: | 25-Feb-22 |
| Date Analysis Completed: | 28-Mar-22 |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Richard Wong
Client Manager

envirolab

***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/01728/9 | | | | |
| Client Sample Number | | | | | | | | |
| Client Sample ID | | | | BH303 | | | | |
| Depth to Top | | | | 7.5 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 14/02/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 5A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **16.2** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **23.8** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **37** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.047 | **0.470** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | 0.002 | **0.020** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.002 | **0.020** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.010 | **0.100** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | <0.001 | **<0.01** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.819 | **8.190** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 4 | **39** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.4 | **4.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 54 | **538** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 98 | **980** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 5.0 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 196 | | | | |
| Mass Sample (kg) | | | | 0.217 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 80.5 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/02177
**Issue Number:** 1 **Date:** 21 March, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 07/03/22
**Date Instructions Received:** 09/03/22
**Date Analysis Completed:** 21/03/22

**Approved by:**



Sophie France
Client Service Manager

UKAS TESTING
1247

**Envirolab Job Number: 22/02177**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW01 | 326R.SWS02.EW01 | 326R.SWS03.EW01 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Mar-22 | 05-Mar-22 | 05-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| pH (w)$_{A}^{\#}$ | 7.58 | 7.79 | 7.83 | | | | | pH | 0.01 | A-T-031w |
| Hardness Total$_{A}^{\#}$ | 104 | 115 | 114 | | | | | mg/l Ca CO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_{A}^{\#}$ | <0.02 | 0.08 | 0.07 | | | | | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_{A}^{\#}$ | 49 | 51 | 51 | | | | | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | | | | | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | | | | | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | | | | | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_{A}$ | 0.2 | 0.2 | 0.2 | | | | | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_{A}$ | <0.01 | <0.01 | <0.01 | | | | | mg/l | 0.01 | A-T-050w |
| DOC (w)$_{A}^{\#}$ | 9.2 | 8.5 | 8.9 | | | | | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_{A}$ | 2 | 1 | 1 | | | | | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_{A}^{\#}$ | 2 | 2 | 2 | | | | | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_{A}^{\#}$ | <0.2 | <0.2 | <0.2 | | | | | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_{A}^{\#}$ | 33 | 37 | 37 | | | | | mg/l | 1 | A-T-049w |
| Copper (dissolved)$_{A}^{\#}$ | 6 | 5 | 8 | | | | | µg/l | 1 | A-T-025w |
| Chromium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Chromium (hexavalent) (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/l | 0.01 | A-T-040w |
| Lead (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_{A}^{\#}$ | 14 | 4 | 14 | | | | | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_{A}^{\#}$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_{A}^{\#}$ | 3 | 3 | 4 | | | | | µg/l | 1 | A-T-025w |
| Selenium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_{A}^{\#}$ | 34 | 29 | 23 | | | | | µg/l | 1 | A-T-025w |
| | | | | | | | | | | |
| OCP+OPP Combined Pest Suite (incl. Atrazine+Simazine) (w) | | | | | | | | | | |
| Dichlobenil (w)$_{A}$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Tecnazene (w)$_{A}$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Trifluralin (w)$_{A}$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| alpha-Hexachlorocyclohexane (HCH) (w)$_{A}$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW01 | 326R.SWS02.EW01 | 326R.SWS03.EW01 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Mar-22 | 05-Mar-22 | 05-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| Hexachlorobenzene (HCB) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Simazine (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Atrazine (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| beta-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Quintozene (PCNB) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Triallate (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| delta-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Chlorothalonil (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Aldrin (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Triadimefon (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Telodrin (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Isodrin (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Pendimethalin (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor epoxide (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| trans-Chlordane (Gamma) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDE (2,4) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan I (Alpha) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| cis-Chlordane (Alpha) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDE (4,4) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Dieldrin (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDD (2,4) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endrin (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan II (Beta) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDD (4,4) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDT (2,4) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endrin Aldehyde (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan Sulphate (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDT (4,4) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-Methoxychlor (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endrin Ketone (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-Methoxychlor (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Permethrin I (cis) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW01 | 326R.SWS02.EW01 | 326R.SWS03.EW01 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Mar-22 | 05-Mar-22 | 05-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| Permethrin II (trans) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Dichlorvos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Mevinphos (w)$_A$ | <0.5 | <0.5 | <0.5 | | | | | µg/l | 0.5 | A-T-056w |
| Demeton-S (w)$_A$ | <0.5 | <0.5 | <0.5 | | | | | µg/l | 0.5 | A-T-056w |
| Phorate (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Dimethoate (w)$_A$ | <0.5 | <0.5 | <0.5 | | | | | µg/l | 0.5 | A-T-056w |
| Demeton-O (w)$_A$ | <0.5 | <0.5 | <0.5 | | | | | µg/l | 0.5 | A-T-056w |
| Propetamphos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Diazinon (Dimpylate) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Disulfoton (w)$_A$ | <0.5 | <0.5 | <0.5 | | | | | µg/l | 0.5 | A-T-056w |
| Chlorpyrifos-methyl (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Methyl Parathion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Pirimiphos-methyl (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Fenitrothion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Malathion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Chlorpyrifos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Fenthion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Parathion (Ethyl Parathion) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Trichloronate (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Chlorfenvinphos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Fensulphothion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Prothiofos (Tokuthion) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Ethion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Triazophos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Carbophenothion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Phosalone (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-methyl (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-ethyl (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Coumaphos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| gamma-Hexachlorocyclohexane (HCH / Lindane) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |

**Envirolab Job Number: 22/02177**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW01 | 326R.SWS02.EW01 | 326R.SWS03.EW01 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Mar-22 | 05-Mar-22 | 05-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_A^{\#}$ | <0.01 | 0.01 | 0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_A^{\#}$ | 0.02 | 0.02 | 0.02 | | | | | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_A^{\#}$ | <0.01 | <0.01 | 0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_A^{\#}$ | <0.01 | 0.01 | 0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_A^{\#}$ | 0.02 | 0.03 | 0.02 | | | | | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_A^{\#}$ | 0.04 | 0.07 | 0.07 | | | | | µg/l | 0.01 | A-T-019w |

**Envirolab Job Number: 22/02177**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW01 | 326R.SWS02.EW01 | 326R.SWS03.EW01 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Mar-22 | 05-Mar-22 | 05-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **Speciated PCB-WHO12 (w)** | | | | | | | | | | |
| PCB BZ 81 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 105 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 114 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 118 (w)$_A$$^{\#}$ | <0.002 | <0.002 | <0.002 | | | | | µg/l | 0.002 | A-T-004w |
| PCB BZ 123 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 126 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 156 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 157 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 167 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 169 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 189 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 77 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| Total Speciated PCB-WHO12 (w)$_A$ | <0.002 | <0.002 | <0.002 | | | | | µg/l | 0.001 | A-T-004w |

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW01 | 326R.SWS02.EW01 | 326R.SWS03.EW01 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Mar-22 | 05-Mar-22 | 05-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| SVOC (excluding PAH-16) (w) | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol (w)$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | <4 | <4 | <4 | | | | | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Hexachlorobenzene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Pentachlorophenol (SVOC)$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Phenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |

Envirolab Job Number: 22/02177

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW01 | 326R.SWS02.EW01 | 326R.SWS03.EW01 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Mar-22 | 05-Mar-22 | 05-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| Nitrobenzene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Isophorone$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Perylene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW01 | 326R.SWS02. EW01 | 326R.SWS03. EW01 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Mar-22 | 05-Mar-22 | 05-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| VOC (w) | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Chloromethane$_{A}$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromomethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Chloroethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Dichloromethane$_{A}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromochloromethane$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-006w |
| Chloroform$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_{A}^{\#}$ | <2 | <2 | <2 | | | | | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Benzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Dibromomethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_{A}^{\#}$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-006w |
| Trichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Toluene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_{A}^{\#}$ | <3 | <3 | <3 | | | | | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/02177**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW01 | 326R.SWS02. EW01 | 326R.SWS03. EW01 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Mar-22 | 05-Mar-22 | 05-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| Tetrachloroethene$_{A}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1,1,2-Tetrachloroethane$_{A}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Chlorobenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Ethylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| m & p Xylene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromoform$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Styrene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_{A}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| o-Xylene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromobenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| n-propylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_{A}^{\#}$ | <2 | <2 | <2 | | | | | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| n-butylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_{A}^{\#}$ | <2 | <2 | <2 | | | | | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_{A}^{\#}$ | <3 | <3 | <3 | | | | | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_{A}^{\#}$ | <3 | <3 | <3 | | | | | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/02177**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW01 | 326R.SWS02. EW01 | 326R.SWS03. EW01 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Mar-22 | 05-Mar-22 | 05-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **TPH UKCWG (w) with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6 $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Ali >C6-C8 $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Ali >C8-C10 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Ali >C10-C12 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Ali >C12-C16 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Ali >C16-C21 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Ali >C21-C35 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Ali >C35-C44 $(w)_A$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Total Aliphatics $(w)_A$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Aro >C5-C7 $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Aro >C7-C8 $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Aro >C8-C10 $(w)_A$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Aro >C10-C12 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Aro >C12-C16 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Aro >C16-C21 $(w)_A^{\#}$ | <5 | <5 | 6 | | | | | µg/l | 5 | A-T-055w |
| Aro >C21-C35 $(w)_A$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-055w |
| Aro >C35-C44 $(w)_A$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Total Aromatics $(w)_A$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) $(w)_A$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-055w |
| BTEX - Benzene $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - Toluene $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - o Xylene $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| MTBE $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project No:** 22/02177

**Date Received:** 09/03/2022 (am)

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Cool Box Temperatures (°C):** 8.4

**Clients Project No:** 326R

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 |
|---|---|---|---|
| Client Sample No | 326R.SWS01.EW01 | 326R.SWS02.EW01 | 326R.SWS03.EW01 |
| Client Sample ID/Depth | SWS01 | SWS02 | SWS03 |
| Date Sampled | 05/03/22 | 05/03/22 | 05/03/22 |
| Deviation Code | | | |
| A7 (no HNO3) | ✓ | ✓ | ✓ |
| D8 (Pesticides) | ✓ | ✓ | ✓ |

*Key*

*A7 (no HNO3)* *No HNO3 preserved bottle provided (dissolved metals will be deviating)*

*D8 (Pesticides)* *Glass container not provided for Pesticides*

*If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.*

# Envirolab Analysis Dates

| Lab Sample ID | 22/02177/1 | 22/02177/2 | 22/02177/3 |
|---|---|---|---|
| Client Sample No | 326R.SWS01.EW01 | 326R.SWS02.EW01 | 326R.SWS03.EW01 |
| Client Sample ID/Depth | SWS01 | SWS02 | SWS03 |
| Date Sampled | 05/03/22 | 05/03/22 | 05/03/22 |
| A-T-004w | 18/03/2022 | 18/03/2022 | 18/03/2022 |
| A-T-006w | 16/03/2022 | 16/03/2022 | 16/03/2022 |
| A-T-019w | 16/03/2022 | 16/03/2022 | 16/03/2022 |
| A-T-022w | 16/03/2022 | 16/03/2022 | 16/03/2022 |
| A-T-025w | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-026w | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-031w | 14/03/2022 | 14/03/2022 | 14/03/2022 |
| A-T-032w | 14/03/2022 | 14/03/2022 | 14/03/2022 |
| A-T-033w | 17/03/2022 | 17/03/2022 | 17/03/2022 |
| A-T-040w | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-041w | 17/03/2022 | 17/03/2022 | 17/03/2022 |
| A-T-042wCCN | 14/03/2022 | 14/03/2022 | 14/03/2022 |
| A-T-042wFCN | 14/03/2022 | 14/03/2022 | 14/03/2022 |
| A-T-042wTCN | 14/03/2022 | 14/03/2022 | 14/03/2022 |
| A-T-049w | 15/03/2022 | 15/03/2022 | 15/03/2022 |
| A-T-050w | 15/03/2022 | 15/03/2022 | 15/03/2022 |
| A-T-052w | 17/03/2022 | 17/03/2022 | 17/03/2022 |
| A-T-055w | 16/03/2022 | 16/03/2022 | 16/03/2022 |
| A-T-056w | 16/03/2022 | 16/03/2022 | 16/03/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/02256
**Issue Number:** 1 **Date:** 24 March, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 03/03/22
**Date Instructions Received:** 10/03/22
**Date Analysis Completed:** 24/03/22

**Approved by:**



Sophie France
Client Service Manager

**Envirolab Job Number: 22/02256**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 01 | 02 | 03 | | | | | | | |
| Client Sample ID | BH313 | BH313 | BH313 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 1.00 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 23-Feb-22 | 23-Feb-22 | 23-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4AB | 5A | | | | | | | |
| % Stones >10mm$_A$ | <0.1 | 19.2 | 33.1 | | | | | % w/w | 0.1 | A-T-044 |
| pH$_D$[M#] | - | 8.65 | - | | | | | pH | 0.01 | A-T-031s |
| Chloride (water sol 2:1)$_D$[M#] | <10 | - | - | | | | | mg/kg | 10 | A-T-026s |
| Cyanide (total)$_A$[M#] | - | <1 | - | | | | | mg/kg | 1 | A-T-042sTCN |
| Phenols - Total by HPLC$_A$ | - | <0.2 | - | | | | | mg/kg | 0.2 | A-T-050s |
| Sulphide$_A$ | <5 | - | - | | | | | mg/kg | 5 | A-T-043-s |
| Sulphur (elemental)$_D$[M#] | <5 | - | - | | | | | mg/kg | 5 | A-T-029s |
| Loss on ignition (550degC)$_D$[M#] | 2.8 | - | - | | | | | % w/w | 0.6 | A-T-030s |
| Total Organic Carbon$_D$[M#] | - | 4.48 | 1.75 | | | | | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | - | <5 | - | | | | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$[M#] | - | 13 | - | | | | | mg/kg | 1 | A-T-024s |
| Barium$_D$ | 68 | - | - | | | | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | - | 1.0 | - | | | | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | - | <1.0 | - | | | | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$[M#] | - | <0.5 | - | | | | | mg/kg | 0.5 | A-T-024s |
| Copper$_D$[M#] | - | 36 | - | | | | | mg/kg | 1 | A-T-024s |
| Chromium$_D$[M#] | - | 28 | - | | | | | mg/kg | 1 | A-T-024s |
| Lead$_D$[M#] | - | 74 | - | | | | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | - | 0.61 | - | | | | | mg/kg | 0.17 | A-T-024s |
| Molybdenum$_D$[M#] | 1 | - | - | | | | | mg/kg | 1 | A-T-024s |
| Nickel$_D$[M#] | - | 22 | - | | | | | mg/kg | 1 | A-T-024s |
| Selenium$_D$[M#] | - | <1 | - | | | | | mg/kg | 1 | A-T-024s |
| Vanadium$_D$[M#] | - | 27 | - | | | | | mg/kg | 1 | A-T-024s |
| Zinc$_D$[M#] | - | 59 | - | | | | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/02256**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 01 | 02 | 03 | | | | | | | |
| Client Sample ID | BH313 | BH313 | BH313 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 1.00 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 23-Feb-22 | 23-Feb-22 | 23-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4AB | 5A | | | | | | | |
| **Acid Herbicides (Suite 3+)** | | | | | | | | | | |
| 2,3,6-TBA$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-D$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DB$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-T$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex)$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 4-CPA$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Benazolin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Bentazone$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Bromacil$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Bromoxynil$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Clopyralid$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Dicamba$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Diclofop$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop-isopropyl$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Fluroxypyr$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Ioxynil$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPA$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPB$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPP; (Mecoprop)$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| PCP; (Pentachlorophenol)$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Picloram$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Triclopyr$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/02256**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 01 | 02 | 03 | | | | | | | |
| Client Sample ID | BH313 | BH313 | BH313 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 1.00 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 23-Feb-22 | 23-Feb-22 | 23-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4AB | 5A | | | | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | - | NAD | - | | | | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | | | | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | | | | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | - | N/A | - | | | | | | | A-T-045 |

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 01 | 02 | 03 | | | | | | | |
| Client Sample ID | BH313 | BH313 | BH313 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 1.00 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 23-Feb-22 | 23-Feb-22 | 23-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4AB | 5A | | | | | | | |
| **Carb+Urea Herbs Suite1** | | | | | | | | | | |
| Carbetamide$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorbufam$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Chloroxuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorpropham$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlortoluron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Diflubenzuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Dimefuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Diuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Ethiofencarb$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Isoproturon$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Linuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Methabenzthiazuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Metoxuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Monolinuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Monuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Pencycuron$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Phenmedipham$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Pirimicarb$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Propham$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine and Simazine)** | | | | | | | | | | |
| Dichlobenil$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Tecnazene$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Trifluralin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| alpha-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Hexachlorobenzene (HCB)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Simazine$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Atrazine$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 01 | 02 | 03 | | | | | | | |
| Client Sample ID | BH313 | BH313 | BH313 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 1.00 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 23-Feb-22 | 23-Feb-22 | 23-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4AB | 5A | | | | | | | |
| beta-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Quintozene (PCNB)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Chlorothalonil$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| delta-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Triallate$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Heptachlor$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Aldrin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Triadimefon$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Telodrin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Isodrin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Pendimethalin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Heptachlor epoxide$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| trans-Chlordane (Gamma)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDE (2,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan I (Alpha)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| cis-Chlordane (Alpha)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDE (4,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Dieldrin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDD (2,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endrin$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan II (Beta)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDD (4,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDT (2,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endrin Aldehyde$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endrin Ketone$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan Sulphate$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDT (4,4)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| o,p-Methoxychlor$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| p,p-Methoxychlor$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Permethrin I (cis)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Permethrin II (trans)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Dichlorvos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Mevinphos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 01 | 02 | 03 | | | | | | | |
| Client Sample ID | BH313 | BH313 | BH313 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 1.00 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 23-Feb-22 | 23-Feb-22 | 23-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4AB | 5A | | | | | | | |
| Demeton-S$_A$ | <0.50 | - | - | | | | | mg/kg | 0.5 | A-T-056 |
| Demeton-O$_A$ | <0.50 | - | - | | | | | mg/kg | 0.5 | A-T-056 |
| Phorate$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Dimethoate$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Propetamphos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Diazinon (Dimpylate)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Disulfoton$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | A-T-056 |
| Chlorpyrifos-methyl$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Parathion (Ethyl Parathion)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Methyl Parathion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Pirimiphos-methyl$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Fenitrothion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Fensulphothion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Fenthion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Malathion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Chlorfenvinphos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Chlorpyrifos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Trichloronate$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Prothiofos (Tokuthion)$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Ethion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Triazophos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Carbophenothion$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Phosalone$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Azinphos-methyl$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Azinphos-ethyl$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |
| Coumaphos$_A$ | <0.01 | - | - | | | | | mg/kg | 0.01 | A-T-056 |

**Envirolab Job Number: 22/02256**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 01 | 02 | 03 | | | | | | | |
| Client Sample ID | BH313 | BH313 | BH313 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 1.00 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 23-Feb-22 | 23-Feb-22 | 23-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4AB | 5A | | | | | | | |
| ONP (Triazines Herbicides x11) | | | | | | | | | | |
| Ametryne$_A$ | <0.20 | - | - | | | | | mg/kg | 0.2 | Subcon RPS MH |
| Atraton$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Atrazine$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Cyanazine$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Prometon$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Prometryn$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Propazine$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Simazine$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Simetryn$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Terbuthylazine$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |
| Terbutryn$_A$ | <0.02 | - | - | | | | | mg/kg | 0.02 | Subcon RPS MH |

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 01 | 02 | 03 | | | | | | | |
| Client Sample ID | BH313 | BH313 | BH313 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 1.00 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 23-Feb-22 | 23-Feb-22 | 23-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4AB | 5A | | | | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | - | 0.03 | - | | | | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | - | 0.02 | - | | | | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | - | 0.07 | - | | | | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | - | 0.27 | - | | | | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | - | 0.32 | - | | | | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | - | 0.30 | - | | | | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | - | 0.13 | - | | | | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | - | 0.14 | - | | | | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | - | 0.33 | - | | | | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | - | <0.04 | - | | | | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | - | 0.57 | - | | | | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | - | 0.02 | - | | | | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | - | 0.14 | - | | | | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | - | <0.03 | - | | | | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | - | 0.23 | - | | | | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | - | 0.65 | - | | | | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | - | 3.22 | - | | | | | mg/kg | 0.01 | A-T-019s |
| | | | | | | | | | | |
| **Pyrethroids (x6)** | | | | | | | | | | |
| Cyfluthrin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Cyhalothrin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Cypermethrin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Deltamethrin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Fenvalerate$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |
| Permethrin$_A$ | <0.10 | - | - | | | | | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/02256**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 01 | 02 | 03 | | | | | | | |
| Client Sample ID | BH313 | BH313 | BH313 | | | | | | | |
| Depth to Top | 0.30 | 0.50 | 1.00 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 23-Feb-22 | 23-Feb-22 | 23-Feb-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 4A | 4AB | 5A | | | | | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_{A}^{\#}$ | - | <0.01 | - | | | | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_{A}^{\#}$ | - | <0.01 | - | | | | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_{A}$ | - | <1 | - | | | | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_{A}^{M\#}$ | - | <1 | - | | | | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_{A}^{M\#}$ | - | <1 | - | | | | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_{A}^{M\#}$ | - | <1 | - | | | | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_{A}^{M\#}$ | - | 4 | - | | | | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_{A}$ | - | 3 | - | | | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_{A}$ | - | 8 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_{A}^{\#}$ | - | <0.01 | - | | | | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_{A}^{\#}$ | - | <0.01 | - | | | | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_{A}$ | - | <1 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_{A}$ | - | <1 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_{A}$ | - | 4 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_{A}^{M\#}$ | - | 15 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_{A}$ | - | 69 | - | | | | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_{A}$ | - | 2 | - | | | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_{A}$ | - | 92 | - | | | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_{A}$ | - | 100 | - | | | | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_{A}^{\#}$ | - | <0.01 | - | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_{A}^{\#}$ | - | <0.01 | - | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_{A}^{\#}$ | - | <0.01 | - | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_{A}^{\#}$ | - | <0.01 | - | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_{A}^{\#}$ | - | <0.01 | - | | | | | mg/kg | 0.01 | A-T-022s |
| MTBE$_{A}^{\#}$ | - | <0.01 | - | | | | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project No:** 22/02256

**Date Received:** 10/03/2022 (am)

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Cool Box Temperatures (°C):** 7.1

**Clients Project No:** 326R

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 |
|---|---|---|---|
| Client Sample No | 01 | 02 | 03 |
| Client Sample ID/Depth | BH313 0.30m | BH313 0.50m | BH313 1.00m |
| Date Sampled | 23/02/22 | 23/02/22 | 23/02/22 |
| Deviation Code | | | |
| F | ✓ | ✓ | ✓ |

*Key*
*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 |
|---|---|---|---|
| Client Sample No | 01 | 02 | 03 |
| Client Sample ID/Depth | BH313 0.30m | BH313 0.50m | BH313 1.00m |
| Date Sampled | 23/02/22 | 23/02/22 | 23/02/22 |
| Acid Herbicides (Suite 3+) | ✓ | | |
| Carb+Urea Herbs Suite1 | ✓ | | |
| Pyrethroids (x6) | ✓ | | |
| Sulphide | ✓ | | |
| VPHCWG | | ✓ | |
| PAH-16MS | | ✓ | |
| Cyanide (total) | | ✓ | |
| PAH (total 17) | | | ✓ |
| BTEX (total) | | | ✓ |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3,

ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/02256/1 | 22/02256/2 | 22/02256/3 |
|---|---|---|---|
| Client Sample No | 01 | 02 | 03 |
| Client Sample ID/Depth | BH313 0.30m | BH313 0.50m | BH313 1.00m |
| Date Sampled | 23/02/22 | 23/02/22 | 23/02/22 |
| A-T-004s | | | 17/03/2022 |
| A-T-007s | | | 17/03/2022 |
| A-T-019s | | 16/03/2022 | 16/03/2022 |
| A-T-022s | | 17/03/2022 | 17/03/2022 |
| A-T-024s | 23/03/2022 | 23/03/2022 | |
| A-T-025w | | | 23/03/2022 |
| A-T-026s | 21/03/2022 | | |
| A-T-026w | | | 23/03/2022 |
| A-T-027s | | 21/03/2022 | |
| A-T-029s | 21/03/2022 | | |
| A-T-030s | 24/03/2022 | | |
| A-T-031s | | 22/03/2022 | |
| A-T-031w | | | 23/03/2022 |
| A-T-032s | | 23/03/2022 | 23/03/2022 |
| A-T-032w | | | 23/03/2022 |
| A-T-037w | | | 23/03/2022 |
| A-T-042sTCN | | 16/03/2022 | |
| A-T-043-s | 17/03/2022 | | |
| A-T-044 | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-045 | | 14/03/2022 | |
| A-T-050s | | 17/03/2022 | |
| A-T-050w | | | 23/03/2022 |
| A-T-055s | | 17/03/2022 | |
| A-T-056 | 18/03/2022 | | |
| Calc-no stones | | | 23/03/2022 |
| Probe (w) | | | 23/03/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | | | |
|---|---|---|---|
| Envirolab Job Number: | 22/02256 | | |
| Issue Number: | 1 | Date: | 24-Mar-22 |

Client: BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK, WA5 7ZT

| | |
|---|---|
| Project Manager: | Andy Bird |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project Ref: | 326R |
| Order No: | RIT 262 915 759 |
| Date Samples Received: | 3-Mar-22 |
| Date Instructions Received: | 10-Mar-22 |
| Date Analysis Completed: | 24-Mar-22 |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Sophie France
Client Service Manager

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02256/3 | | | | |
| Client Sample Number | | | | 3 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH313 | | | | |
| Depth to Top | | | | 1 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 23/02/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 5A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **1.75** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **0.87** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **17** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **0.019** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.003 | **0.030** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.039 | **0.390** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.008 | **0.080** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.005 | **0.050** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | <0.001 | **<0.01** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.008 | **0.080** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.001 | **0.010** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.011 | **0.110** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 13 | **125** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.5 | **5.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 8 | **80** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 69 | **690** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 9.5 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 138 | | | | |
| Mass Sample (kg) | | | | 0.215 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 81.4 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Mottram Road, Hyde, Cheshire, SK14 3AR

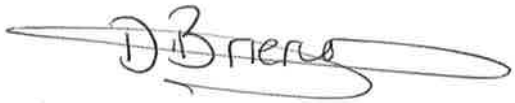
# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/02297
**Issue Number:** 1 **Date:** 23 March, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 03/03/22
**Date Instructions Received:** 10/03/22
**Date Analysis Completed:** 23/03/22

**Approved by:**



Danielle Brierley
Deputy Client Services Supervisor

**Envirolab Job Number: 22/02297**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301. ES03 | 326R.BH301. ES11 | 326R.BH302. ES05 | 326R.BH302. ES11 | 326R.BH305. ES02 | 326R.BH305. ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| % Stones >10mm$_A$ | <0.1 | <0.1 | <0.1 | <0.1 | 9.6 | 6.6 | | % w/w | 0.1 | A-T-044 |
| pH$_D$$^{M\#}$ | 8.50 | - | - | 9.01 | - | 4.52 | | pH | 0.01 | A-T-031s |
| Cyanide (total)$_A$$^{M\#}$ | <1 | - | - | <1 | - | <1 | | mg/kg | 1 | A-T-042sTCN |
| Thiocyanate$_A$ | <5 | - | - | <5 | - | - | | mg/kg | 5 | A-T-041s |
| Phenols - Total by HPLC$_A$ | <0.2 | - | - | <0.2 | - | <0.2 | | mg/kg | 0.2 | A-T-050s |
| Total Organic Carbon$_D$$^{M\#}$ | NDP | 1.39 | 2.30 | 0.73 | 45.2 | 48.5 | | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | <5 | - | - | <5 | - | <5 | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$$^{M\#}$ | 12 | - | - | 7 | - | 27 | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | 1.0 | - | - | 1.6 | - | 1.6 | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | <1.0 | - | - | <1.0 | - | <1.0 | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$$^{M\#}$ | <0.5 | - | - | 1.0 | - | 1.4 | | mg/kg | 0.5 | A-T-024s |
| Cobalt$_D$$^{M\#}$ | 5 | - | - | 13 | - | - | | mg/kg | 1 | A-T-024s |
| Copper$_D$$^{M\#}$ | 59 | - | - | 15 | - | 110 | | mg/kg | 1 | A-T-024s |
| Chromium$_D$$^{M\#}$ | 10 | - | - | 37 | - | 12 | | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | <1 | - | - | <1 | - | - | | mg/kg | 1 | A-T-040s |
| Lead$_D$$^{M\#}$ | 113 | - | - | 102 | - | 79 | | mg/kg | 1 | A-T-024s |
| Manganese$_D$$^{M\#}$ | 289 | - | - | 497 | - | - | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | 0.52 | - | - | <0.17 | - | <0.17 | | mg/kg | 0.17 | A-T-024s |
| Nickel$_D$$^{M\#}$ | 12 | - | - | 40 | - | 26 | | mg/kg | 1 | A-T-024s |
| Selenium$_D$$^{M\#}$ | <1 | - | - | <1 | - | 2 | | mg/kg | 1 | A-T-024s |
| Vanadium$_D$$^{M\#}$ | 14 | - | - | 37 | - | 33 | | mg/kg | 1 | A-T-024s |
| Zinc$_D$$^{M\#}$ | 39 | - | - | 47 | - | 110 | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/02297**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301.ES03 | 326R.BH301.ES11 | 326R.BH302.ES05 | 326R.BH302.ES11 | 326R.BH305.ES02 | 326R.BH305.ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| **Acid Herbicides (Suite 3+)** | | | | | | | | | | |
| 2,3,6-TBA$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-D$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DB$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-T$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex)$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 4-CPA$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Benazolin$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Bentazone$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Bromacil$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Bromoxynil$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Clopyralid$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Dicamba$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Diclofop$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop-isopropyl$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Fluroxypyr$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Ioxynil$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| MCPA$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| MCPB$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| MCPP; (Mecoprop)$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| PCP; (Pentachlorophenol)$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Picloram$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Triclopyr$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/02297**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301. ES03 | 326R.BH301. ES11 | 326R.BH302. ES05 | 326R.BH302. ES11 | 326R.BH305. ES02 | 326R.BH305. ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_D^{\#}$ | Chrysotile | - | - | NAD | - | NAD | | | | A-T-045 |
| Asbestos Matrix (visual)$_D$ | - | - | - | - | - | - | | | | A-T-045 |
| Asbestos Matrix (microscope)$_D$ | Loose Fibres | - | - | - | - | - | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_D$ | N/A | - | - | N/A | - | N/A | | | | A-T-045 |
| | | | | | | | | | | |
| **Asbestos in Soil Quantification % (Hand Picking & Weighing)** | | | | | | | | | | |
| Asbestos in soil % composition (hand picking and weighing)$_D$ | 0.006 | - | - | - | - | - | | % w/w | 0.001 | A-T-054 |

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**Envirolab Job Number: 22/02297**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301.ES03 | 326R.BH301.ES11 | 326R.BH302.ES05 | 326R.BH302.ES11 | 326R.BH305.ES02 | 326R.BH305.ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| **Carb+Urea Herbs Suite1** | | | | | | | | | | |
| Carbetamide$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorbufam$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Chloroxuron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorpropham$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Chlortoluron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Diflubenzuron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Dimefuron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Diuron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Ethiofencarb$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Isoproturon$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Linuron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Methabenzthiazuron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Metoxuron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Monolinuron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Monuron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Pencycuron$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Phenmedipham$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Pirimicarb$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Propham$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine and Simazine)** | | | | | | | | | | |
| Dichlobenil$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Tecnazene$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Trifluralin$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| alpha-Hexachlorocyclohexane (HCH)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Hexachlorobenzene (HCB)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Simazine$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Atrazine$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301.ES03 | 326R.BH301.ES11 | 326R.BH302.ES05 | 326R.BH302.ES11 | 326R.BH305.ES02 | 326R.BH305.ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| beta-Hexachlorocyclohexane (HCH)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Quintozene (PCNB)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Chlorothalonil$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| delta-Hexachlorocyclohexane (HCH)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Triallate$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Heptachlor$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Aldrin$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Triadimefon$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Telodrin$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Isodrin$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Pendimethalin$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Heptachlor epoxide$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| trans-Chlordane (Gamma)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| o,p-DDE (2,4)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endosulphan I (Alpha)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| cis-Chlordane (Alpha)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| p,p-DDE (4,4)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Dieldrin$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| o,p-DDD (2,4)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endrin$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endosulphan II (Beta)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| p,p-DDD (4,4)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| o,p-DDT (2,4)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endrin Aldehyde$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endrin Ketone$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endosulphan Sulphate$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| p,p-DDT (4,4)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| o,p-Methoxychlor$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| p,p-Methoxychlor$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Permethrin I (cis)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Permethrin II (trans)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Dichlorvos$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Mevinphos$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |

**Envirolab Job Number: 22/02297**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301. ES03 | 326R.BH301. ES11 | 326R.BH302. ES05 | 326R.BH302. ES11 | 326R.BH305. ES02 | 326R.BH305. ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| Demeton-S$_A$ | - | - | <0.50 | - | - | - | | mg/kg | 0.5 | A-T-056 |
| Demeton-O$_A$ | - | - | <0.50 | - | - | - | | mg/kg | 0.5 | A-T-056 |
| Phorate$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Dimethoate$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Propetamphos$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Diazinon (Dimpylate)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Disulfoton$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | A-T-056 |
| Chlorpyrifos-methyl$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Parathion (Ethyl Parathion)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Methyl Parathion$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Pirimiphos-methyl$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Fenitrothion$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Fensulphothion$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Fenthion$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Malathion$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Chlorfenvinphos$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Chlorpyrifos$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Trichloronate$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Prothiofos (Tokuthion)$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Ethion$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Triazophos$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Carbophenothion$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Phosalone$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Azinphos-methyl$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Azinphos-ethyl$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Coumaphos$_A$ | - | - | <0.01 | - | - | - | | mg/kg | 0.01 | A-T-056 |

**Envirolab Job Number: 22/02297**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301. ES03 | 326R.BH301. ES11 | 326R.BH302. ES05 | 326R.BH302. ES11 | 326R.BH305. ES02 | 326R.BH305. ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| **ONP (Triazines Herbicides x11)** | | | | | | | | | | |
| Ametryne$_A$ | - | - | <0.20 | - | - | - | | mg/kg | 0.2 | Subcon RPS MH |
| Atraton$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Atrazine$_A$ | - | - | <0.02 | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Cyanazine$_A$ | - | - | <0.02 | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Prometon$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Prometryn$_A$ | - | - | <0.02 | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Propazine$_A$ | - | - | <0.02 | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Simazine$_A$ | - | - | <0.02 | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Simetryn$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Terbuthylazine$_A$ | - | - | <0.02 | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Terbutryn$_A$ | - | - | <0.02 | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/02297**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301.ES03 | 326R.BH301.ES11 | 326R.BH302.ES05 | 326R.BH302.ES11 | 326R.BH305.ES02 | 326R.BH305.ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | 0.39 | - | - | <0.01 | - | 0.72 | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | 6.64 | - | - | <0.01 | - | <0.01 | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | 3.81 | - | - | <0.02 | - | 0.72 | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | 11.6 | - | - | <0.04 | - | 3.43 | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | 24.7 | - | - | <0.04 | - | 4.27 | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | 15.7 | - | - | <0.05 | - | 5.14 | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | 21.3 | - | - | <0.05 | - | 2.26 | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | 5.20 | - | - | <0.07 | - | 1.91 | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | 17.2 | - | - | <0.06 | - | 4.74 | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | 2.66 | - | - | <0.04 | - | 0.53 | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | 17.9 | - | - | <0.08 | - | 7.32 | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | 0.99 | - | - | <0.01 | - | 0.34 | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | 14.1 | - | - | <0.03 | - | 2.19 | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | 1.28 | - | - | <0.03 | - | 1.37 | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | 3.73 | - | - | 0.06 | - | 5.17 | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | 47.6 | - | - | <0.07 | - | 7.76 | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | 195 | - | - | <0.08 | - | 47.9 | | mg/kg | 0.01 | A-T-019s |
| | | | | | | | | | | |
| **Pyrethroids (x6)** | | | | | | | | | | |
| Cyfluthrin$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Cyhalothrin$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Cypermethrin$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Deltamethrin$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Fenvalerate$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Permethrin$_A$ | - | - | <0.10 | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/02297**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301.ES03 | 326R.BH301.ES11 | 326R.BH302.ES05 | 326R.BH302.ES11 | 326R.BH305.ES02 | 326R.BH305.ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| **Speciated PCB-WHO12** | | | | | | | | | | |
| PCB BZ 81$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 105$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 114$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 118$_A^{M\#}$ | <0.007 | - | - | <0.007 | - | <0.007 | | mg/kg | 0.007 | A-T-004s |
| PCB BZ 123$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 126$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 156$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 157$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 167$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 169$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 189$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 77$_A$ | <0.005 | - | - | <0.005 | - | <0.005 | | mg/kg | 0.005 | A-T-004s |
| Total Speciated PCB-WHO12$_A$ | <0.007 | - | - | <0.007 | - | <0.007 | | mg/kg | 0.005 | A-T-004s |

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301.ES03 | 326R.BH301.ES11 | 326R.BH302.ES05 | 326R.BH302.ES11 | 326R.BH305.ES02 | 326R.BH305.ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| **SVOC** | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Hexachlorobenzene$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | <5000 | - | - | - | - | - | | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Pentachlorophenol (SVOC)$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | <5000 | - | - | - | - | - | | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301.ES03 | 326R.BH301.ES11 | 326R.BH302.ES05 | 326R.BH302.ES11 | 326R.BH305.ES02 | 326R.BH305.ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| Isophorone$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Hexachloroethane$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | <1000 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | 7520 | - | - | - | - | - | | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301.ES03 | 326R.BH301.ES11 | 326R.BH302.ES05 | 326R.BH302.ES11 | 326R.BH305.ES02 | 326R.BH305.ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| VOC | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Chloromethane$_{A}$ | <10 | - | - | - | - | - | | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Bromomethane$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Chloroethane$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Dichloromethane$_{A}$ | <5 | - | - | - | - | - | | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_{A}^{\#}$ | <5 | - | - | - | - | - | | µg/kg | 5 | A-T-006s |
| Chloroform$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_{A}^{\#}$ | <2 | - | - | - | - | - | | µg/kg | 2 | A-T-006s |
| Benzene$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Trichloroethene$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Dibromomethane$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_{A}^{\#}$ | <10 | - | - | - | - | - | | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Toluene$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_{A}^{\#}$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_{A}^{\#}$ | <3 | - | - | - | - | - | | µg/kg | 3 | A-T-006s |

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301. ES03 | 326R.BH301. ES11 | 326R.BH302. ES05 | 326R.BH302. ES11 | 326R.BH305. ES02 | 326R.BH305. ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| 1,2-Dibromoethane$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Chlorobenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_A$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| m & p Xylene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| o-Xylene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Styrene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Bromoform$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_A$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| Bromobenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_A^\#$ | <2 | - | - | - | - | - | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_A$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_A$ | <2 | - | - | - | - | - | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_A$ | <3 | - | - | - | - | - | | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_A^\#$ | <1 | - | - | - | - | - | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_A$ | <3 | - | - | - | - | - | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/02297**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301. ES03 | 326R.BH301. ES11 | 326R.BH302. ES05 | 326R.BH302. ES11 | 326R.BH305. ES02 | 326R.BH305. ES03 | | | | |
| Client Sample ID | BH301 | BH301 | BH302 | BH302 | BH305 | BH305 | | | | |
| Depth to Top | 1.00 | 9.20 | 2.00 | 12.50 | 0.50 | 1.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Feb-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | 01-Mar-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 5A | 7 | 6 | 4AE | 4A | | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | <1 | - | - | <1 | - | 47 | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | 2 | - | - | <1 | - | 35 | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | 23 | - | - | <1 | - | 63 | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | 22 | - | - | <1 | - | 54 | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | 20 | - | - | 2 | - | 64 | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | 30 | - | - | <1 | - | 8 | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | 98 | - | - | 2 | - | 272 | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | 5 | - | - | <1 | - | 38 | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | 11 | - | - | <1 | - | 34 | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | 47 | - | - | <1 | - | 81 | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | 106 | - | - | 1 | - | 117 | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | 531 | - | - | 4 | - | 193 | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | 27 | - | - | <1 | - | 2 | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | 727 | - | - | 5 | - | 466 | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | 824 | - | - | 7 | - | 739 | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/02297

**Date Received:** 10/03/2022 (am)

**Cool Box Temperatures (°C):** 6.7 - 7.2

| Lab Sample ID | 22/02297/3 | 22/02297/21 | 22/02297/23 | 22/02297/24 |
|---|---|---|---|---|
| Client Sample No | 326R.BH301 .ES03 | 326R.BH302 .ES11 | 326R.BH305 .ES02 | 326R.BH305 .ES03 |
| Client Sample ID/Depth | BH301 1.00m | BH302 12.50m | BH305 0.50m | BH305 1.00m |
| Date Sampled | 25/02/22 | 01/03/22 | 01/03/22 | 01/03/22 |
| Deviation Code | | | | |
| F | ✓ | ✓ | ✓ | ✓ |

*Key*
*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/02297/3 | 22/02297/21 | 22/02297/23 | 22/02297/24 |
|---|---|---|---|---|
| Client Sample No | 326R.BH301 .ES03 | 326R.BH302 .ES11 | 326R.BH305 .ES02 | 326R.BH305 .ES03 |
| Client Sample ID/Depth | BH301 1.00m | BH302 12.50m | BH305 0.50m | BH305 1.00m |
| Date Sampled | 25/02/22 | 01/03/22 | 01/03/22 | 01/03/22 |
| Cyanide (total) | ✓ | ✓ | | ✓ |
| VPHCWG | ✓ | | | |
| PAH-16MS | ✓ | | | |
| VOC | ✓ | | | |
| SVOC | ✓ | | | |
| BTEX (total) | | | ✓ | ✓ |

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/02297/3 | 22/02297/11 | 22/02297/15 | 22/02297/21 | 22/02297/23 | 22/02297/24 |
|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH301 .ES03 | 326R.BH301 .ES11 | 326R.BH302 .ES05 | 326R.BH302 .ES11 | 326R.BH305 .ES02 | 326R.BH305 .ES03 |
| Client Sample ID/Depth | BH301 1.00m | BH301 9.20m | BH302 2.00m | BH302 12.50m | BH305 0.50m | BH305 1.00m |
| Date Sampled | 25/02/22 | 01/03/22 | 01/03/22 | 01/03/22 | 01/03/22 | 01/03/22 |
| A-T-004s | 17/03/2022 | 17/03/2022 | 17/03/2022 | 17/03/2022 | 17/03/2022 | 17/03/2022 |
| A-T-006s | 16/03/2022 | | | | | |
| A-T-007s | | 16/03/2022 | 16/03/2022 | | 16/03/2022 | 16/03/2022 |
| A-T-019s | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 |
| A-T-022s | 17/03/2022 | 17/03/2022 | 17/03/2022 | 17/03/2022 | 18/03/2022 | 18/03/2022 |
| A-T-024s | 22/03/2022 | | | 22/03/2022 | | 22/03/2022 |
| A-T-025w | | 23/03/2022 | 23/03/2022 | | 23/03/2022 | 23/03/2022 |
| A-T-026w | | 23/03/2022 | 23/03/2022 | | 23/03/2022 | 23/03/2022 |
| A-T-027s | 22/03/2022 | | | 22/03/2022 | | 22/03/2022 |
| A-T-031s | 22/03/2022 | | | 22/03/2022 | | 22/03/2022 |
| A-T-031w | | 23/03/2022 | 23/03/2022 | | 23/03/2022 | 23/03/2022 |
| A-T-032s | 18/03/2022 | 23/03/2022 | 23/03/2022 | 23/03/2022 | 23/03/2022 | 23/03/2022 |
| A-T-032w | | 23/03/2022 | 23/03/2022 | | 23/03/2022 | 23/03/2022 |
| A-T-037w | | 23/03/2022 | 23/03/2022 | | 23/03/2022 | 23/03/2022 |
| A-T-040s | 23/03/2022 | | | 21/03/2022 | | |
| A-T-041s | 16/03/2022 | | | 16/03/2022 | | |
| A-T-042sTCN | 16/03/2022 | | | 16/03/2022 | | 16/03/2022 |
| A-T-044 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-045 | 14/03/2022 | | | 14/03/2022 | | 14/03/2022 |
| A-T-050s | 16/03/2022 | | | 21/03/2022 | | 21/03/2022 |
| A-T-050w | | 23/03/2022 | 23/03/2022 | | 23/03/2022 | 23/03/2022 |
| A-T-052s | 21/03/2022 | | | | | |
| A-T-054 | 15/03/2022 | | | | | |
| A-T-055s | 17/03/2022 | | | 17/03/2022 | | 18/03/2022 |
| A-T-056 | | | 16/03/2022 | | | |
| Calc-no stones | | 23/03/2022 | 23/03/2022 | | 23/03/2022 | 23/03/2022 |
| Probe (w) | | 23/03/2022 | 23/03/2022 | | 23/03/2022 | 23/03/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | | | |
|---|---|---|---|
| Envirolab Job Number: | 22/02297 | | |
| Issue Number: | 1 | Date: | 23-Mar-22 |

Client: BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK, WA5 7ZT

| | |
|---|---|
| Project Manager: | Andy Bird |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project Ref: | 326R |
| Order No: | RIT 262 915 759 |
| Date Samples Received: | 3-Mar-22 |
| Date Instructions Received: | 10-Mar-22 |
| Date Analysis Completed: | 23-Mar-22 |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

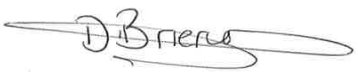
IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Danielle Brierley
Deputy Client Services Supervisor

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02297/11 | | | | |
| Client Sample Number | | | | 326R.BH301.ES11 | | | | |
| Client Sample ID | | | | BH301 | | | | |
| Depth to Top | | | | 9.2 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 01/03/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 5A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **1.39** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **6.38** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **19** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.019 | **0.190** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.005 | **0.050** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.007 | **0.070** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.001 | **0.010** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.001 | **0.010** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.014 | **0.140** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 2 | **21** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | <0.50 | **<1** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 28 | **281** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 99 | **990** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.8 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 198 | | | | |
| Mass Sample (kg) | | | | 0.212 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 82.4 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02297/15 | | | | |
| Client Sample Number | | | | 326R.BH302.ES05 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH302 | | | | |
| Depth to Top | | | | 2 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 01/03/2022 | | | | |
| Sample Type | | | | Solid | | | | |
| Sample Matrix Code | | | | 7 | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **2.3** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg)$_A$ | A-T-019 | N | N | **40.9** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **70** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **0.02** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.044 | **0.440** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.009 | **0.090** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.012 | **0.120** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.002 | **0.020** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.028 | **0.280** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.002 | **0.020** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.013 | **0.130** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 2 | **19** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.7 | **7.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 5 | **50** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 54 | **540** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.7 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 107 | | | | |
| Mass Sample (kg) | | | | 0.216 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 80.9 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02297/23 | | | | |
| Client Sample Number | | | | 326R.BH305.ES02 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH305 | | | | |
| Depth to Top | | | | 0.5 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 01/03/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4AE | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **45.2** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **198** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **76** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.05** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.056 | **0.560** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.004 | **0.040** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.006 | **0.060** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | <0.001 | **<0.01** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.204 | **2.040** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | <1.00 | **<10** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | <0.10 | **<1** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 28 | **280** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 52 | **520** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 5.6 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 105 | | | | |
| Mass Sample (kg) | | | | 0.224 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 78.2 | | | | |

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02297/24 | | | | |
| Client Sample Number | | | | 326R.BH305.ES03 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH305 | | | | |
| Depth to Top | | | | 1 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 01/03/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | **4.52** | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **48.5** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **48.5** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **152** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.05** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.066 | **0.660** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | 0.002 | **0.020** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.006 | **0.060** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.024 | **0.240** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | <0.001 | **<0.01** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.329 | **3.290** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | <1.00 | **<10** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.2 | **2.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 35 | **349** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 48 | **480** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 5.7 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 96 | | | | |
| Mass Sample (kg) | | | | 0.225 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 77.9 | | | | |

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/02368
**Issue Number:** 1 **Date:** 29 March, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 25/02/22
**Date Instructions Received:** 14/03/22
**Date Analysis Completed:** 28/03/22

**Approved by:**



Sophie France
Client Service Manager

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| % Stones >10mm$_A$ | 40.6 | 13.3 | 22.5 | 5.0 | 29.1 | 9.2 | 14.2 | % w/w | 0.1 | A-T-044 |
| pH$_D$[M#] | - | 6.16 | - | - | - | 6.02 | 6.11 | pH | 0.01 | A-T-031s |
| Chloride (water sol 2:1)$_D$[M#] | - | - | - | - | - | - | <10 | mg/kg | 10 | A-T-026s |
| Cyanide (total)$_A$[M#] | - | <1 | - | - | - | <1 | <1 | mg/kg | 1 | A-T-042sTCN |
| Phenols - Total by HPLC$_A$ | - | <0.2 | - | - | - | <0.2 | <0.2 | mg/kg | 0.2 | A-T-050s |
| Sulphide$_A$ | - | - | - | - | - | - | 44 | mg/kg | 5 | A-T-043-s |
| Sulphur (elemental)$_D$[M#] | - | - | - | - | - | - | 110 | mg/kg | 5 | A-T-029s |
| Loss on ignition (550degC)$_D$[M#] | - | - | - | - | - | - | 24.0 | % w/w | 0.6 | A-T-030s |
| Total Organic Carbon$_D$[M#] | - | 2.07 | 13.5 | 31.4 | 22.4 | 24 | 34.3 | % w/w | 0.03 | A-T-032s |
| Aluminium$_D$ | - | - | - | - | - | - | 8270 | mg/kg | 1 | A-T-024s |
| Antimony$_D$ | - | <5 | - | - | - | 11 | 9 | mg/kg | 5 | A-T-024s |
| Arsenic$_D$[M#] | - | 9 | - | - | - | 31 | 40 | mg/kg | 1 | A-T-024s |
| Barium$_D$ | - | - | - | - | - | - | 190 | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | - | 0.6 | - | - | - | 3.0 | 1.9 | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | - | <1.0 | - | - | - | <1.0 | <1.0 | mg/kg | 1 | A-T-027s |
| Cadmium$_D$[M#] | - | 0.9 | - | - | - | 1.5 | 1.7 | mg/kg | 0.5 | A-T-024s |
| Calcium$_D$ | - | - | - | - | - | - | 8540 | mg/kg | 50 | A-T-024s |
| Cobalt$_D$[M#] | - | - | - | - | - | - | 12 | mg/kg | 1 | A-T-024s |
| Copper$_D$[M#] | - | 93 | - | - | - | 342 | 297 | mg/kg | 1 | A-T-024s |
| Chromium$_D$[M#] | - | 10 | - | - | - | 18 | 17 | mg/kg | 1 | A-T-024s |
| Iron$_D$ | - | - | - | - | - | - | 43300 | mg/kg | 50 | A-T-024s |
| Lead$_D$[M#] | - | 77 | - | - | - | 131 | 687 | mg/kg | 1 | A-T-024s |
| Magnesium$_D$ | - | - | - | - | - | - | 1000 | mg/kg | 50 | A-T-024s |
| Manganese$_D$[M#] | - | - | - | - | - | - | 595 | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | - | <0.17 | - | - | - | <0.17 | 0.45 | mg/kg | 0.17 | A-T-024s |
| Molybdenum$_D$[M#] | - | - | - | - | - | - | 8 | mg/kg | 1 | A-T-024s |
| Nickel$_D$[M#] | - | 19 | - | - | - | 50 | 40 | mg/kg | 1 | A-T-024s |
| Potassium$_D$ | - | - | - | - | - | - | 500 | mg/kg | 50 | A-T-024s |
| Selenium$_D$[M#] | - | <1 | - | - | - | <1 | <1 | mg/kg | 1 | A-T-024s |
| Silver$_D$ | - | - | - | - | - | - | <10 | mg/kg | 10 | A-T-024s |
| Tin$_D$ | - | - | - | - | - | - | <5 | mg/kg | 5 | A-T-024s |
| Titanium$_D$ | - | - | - | - | - | - | 420 | mg/kg | 5 | A-T-024s |
| Vanadium$_D$[M#] | - | 16 | - | - | - | 54 | 45 | mg/kg | 1 | A-T-024s |

Envirolab Job Number: 22/02368

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| Zinc$_{D}^{M\#}$ | - | 301 | - | - | - | 121 | 169 | mg/kg | 5 | A-T-024s |

envirolab

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| **Acid Herbicides (Suite 3+)** | | | | | | | | | | |
| 2,3,6-TBA$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-D$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DB$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-T$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex)$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 4-CPA$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Benazolin$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Bentazone$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Bromacil$_A$ | 0.5 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Bromoxynil$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Clopyralid$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Dicamba$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Diclofop$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop-isopropyl$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Fluroxypyr$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Ioxynil$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| MCPA$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| MCPB$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| MCPP; (Mecoprop)$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| PCP; (Pentachlorophenol)$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Picloram$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Triclopyr$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | - | NAD | - | - | - | NAD | NAD | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | - | - | - | - | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | - | - | - | - | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | - | N/A | - | - | - | N/A | N/A | | | A-T-045 |

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| **Carb+Urea Herbs Suite1** | | | | | | | | | | |
| Carbetamide$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Chlorbufam$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Chloroxuron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Chlorpropham$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Chlortoluron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Diflubenzuron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Dimefuron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Diuron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Ethiofencarb$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Isoproturon$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Linuron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Methabenzthiazuron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Metoxuron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Monolinuron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Monuron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Pencycuron$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Phenmedipham$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Pirimicarb$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Propham$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine and Simazine)** | | | | | | | | | | |
| Dichlobenil$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Tecnazene$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Trifluralin$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| alpha-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Hexachlorobenzene (HCB)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Simazine$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Atrazine$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| beta-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Quintozene (PCNB)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Chlorothalonil$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| delta-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Triallate$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Heptachlor$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Aldrin$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Triadimefon$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Telodrin$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Isodrin$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Pendimethalin$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Heptachlor epoxide$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| trans-Chlordane (Gamma)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| o,p-DDE (2,4)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endosulphan I (Alpha)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| cis-Chlordane (Alpha)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| p,p-DDE (4,4)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Dieldrin$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| o,p-DDD (2,4)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endrin$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endosulphan II (Beta)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| p,p-DDD (4,4)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| o,p-DDT (2,4)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endrin Aldehyde$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endrin Ketone$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endosulphan Sulphate$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| p,p-DDT (4,4)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| o,p-Methoxychlor$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| p,p-Methoxychlor$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Permethrin I (cis)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Permethrin II (trans)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Dichlorvos$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Mevinphos$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| Demeton-S$_A$ | <0.50 | - | - | - | - | - | - | mg/kg | 0.5 | A-T-056 |
| Demeton-O$_A$ | <0.50 | - | - | - | - | - | - | mg/kg | 0.5 | A-T-056 |
| Phorate$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Dimethoate$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Propetamphos$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Diazinon (Dimpylate)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Disulfoton$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | A-T-056 |
| Chlorpyrifos-methyl$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Parathion (Ethyl Parathion)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Methyl Parathion$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Pirimiphos-methyl$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Fenitrothion$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Fensulphothion$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Fenthion$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Malathion$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Chlorfenvinphos$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Chlorpyrifos$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Trichloronate$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Prothiofos (Tokuthion)$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Ethion$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Triazophos$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Carbophenothion$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Phosalone$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Azinphos-methyl$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Azinphos-ethyl$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |
| Coumaphos$_A$ | <0.01 | - | - | - | - | - | - | mg/kg | 0.01 | A-T-056 |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| **ONP (Triazines Herbicides x11)** | | | | | | | | | | |
| Ametryne$_A$ | <0.20 | - | - | - | - | - | - | mg/kg | 0.2 | Subcon RPS MH |
| Atraton$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Atrazine$_A$ | <0.02 | - | - | - | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Cyanazine$_A$ | <0.02 | - | - | - | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Prometon$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Prometryn$_A$ | <0.02 | - | - | - | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Propazine$_A$ | <0.02 | - | - | - | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Simazine$_A$ | <0.02 | - | - | - | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Simetryn$_A$ | <0.02 | - | - | - | - | - | - | mg/kg | 0.1 | Agg CO2w |
| Terbuthylazine$_A$ | <0.02 | - | - | - | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Terbutryn$_A$ | <0.02 | - | - | - | - | - | - | mg/kg | 0.02 | Agg CO2w |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | - | <0.01 | - | - | - | <0.01 | 0.01 | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | - | <0.02 | - | - | - | <0.02 | 0.07 | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | - | <0.04 | - | - | - | <0.04 | 0.17 | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | - | <0.04 | - | - | - | 0.24 | 0.25 | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | - | <0.05 | - | - | - | 0.15 | 0.34 | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | - | <0.05 | - | - | - | 0.16 | 0.12 | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | - | <0.07 | - | - | - | 0.10 | 0.15 | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | - | <0.06 | - | - | - | 0.07 | 0.29 | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | - | <0.04 | - | - | - | <0.04 | <0.04 | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | - | <0.08 | - | - | - | <0.08 | 0.29 | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | - | <0.03 | - | - | - | 0.19 | 0.13 | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | - | <0.03 | - | - | - | <0.03 | 0.13 | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | - | <0.03 | - | - | - | <0.03 | 0.19 | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | - | <0.07 | - | - | - | <0.07 | 0.28 | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | - | <0.08 | - | - | - | 0.91 | 2.42 | mg/kg | 0.01 | A-T-019s |
| | | | | | | | | | | |
| **Pyrethroids (x6)** | | | | | | | | | | |
| Cyfluthrin$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Cyhalothrin$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Cypermethrin$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Deltamethrin$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Fenvalerate$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Permethrin$_A$ | <0.10 | - | - | - | - | - | - | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| **Speciated PCB-WHO12** | | | | | | | | | | |
| PCB BZ 81$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 105$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 114$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 118$_{A}^{M\#}$ | - | - | - | - | - | - | <0.007 | mg/kg | 0.007 | A-T-004s |
| PCB BZ 123$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 126$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 156$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 157$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 167$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 169$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 189$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 77$_{A}$ | - | - | - | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| Total Speciated PCB-WHO12$_{A}$ | - | - | - | - | - | - | <0.007 | mg/kg | 0.005 | A-T-004s |

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| **SVOC+TICS (UKWIR)** | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Hexachlorobenzene$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | - | - | - | - | - | <500 | - | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Pentachlorophenol (SVOC)$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | - | - | - | - | - | <500 | - | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Isophorone$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |

Envirolab Job Number: 22/02368

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| Hexachloroethane$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | - | - | - | - | - | <100 | - | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| **VOC+TICS (UKWIR)** | | | | | | | | | | |
| Dichlorodifluoromethane$_A$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Chloromethane$_A$ | - | - | - | - | - | <50 | - | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Bromomethane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Chloroethane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Dichloromethane$_A$ | - | - | - | - | - | <25 | - | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_A^{\#}$ | - | - | - | - | - | <25 | - | µg/kg | 5 | A-T-006s |
| Chloroform$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_A^{\#}$ | - | - | - | - | - | <10 | - | µg/kg | 2 | A-T-006s |
| Benzene$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Trichloroethene$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Dibromomethane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_A^{\#}$ | - | - | - | - | - | <50 | - | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Toluene$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_A^{\#}$ | - | - | - | - | - | <15 | - | µg/kg | 3 | A-T-006s |
| 1,2-Dibromoethane$_A^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| Chlorobenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_{A}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| m & p Xylene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| o-Xylene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Styrene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Bromoform$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_{A}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| Bromobenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_{A}^{\#}$ | - | - | - | - | - | <10 | - | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_{A}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_{A}$ | - | - | - | - | - | <10 | - | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_{A}$ | - | - | - | - | - | <15 | - | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_{A}^{\#}$ | - | - | - | - | - | <5 | - | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_{A}$ | - | - | - | - | - | <15 | - | µg/kg | 3 | A-T-006s |

Envirolab Job Number: 22/02368

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | | | |
| Client Sample ID | TP304 | TP304 | TP304 | TP305 | TP305 | TP305 | TP306 | | | |
| Depth to Top | 0.50 | 1.00 | 2.90 | 1.00 | 2.00 | 3.00 | 0.50 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 22-Feb-22 | 22-Feb-22 | 22-Feb-22 | 24-Feb-22 | 24-Feb-22 | 24-Feb-22 | 25-Feb-22 | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Solid | | | |
| Sample Matrix Code | 4AE | 4A | 4A | 4A | 4A | 7 | 7 | | | |
| TPH UKCWG with Clean Up *C1 | | | | | | | | | | |
| Ali >C5-C6$_{A}^{\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_{A}^{\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_{A}$ | - | <1 | - | - | - | <1 | 2 | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_{A}^{M\#}$ | - | <1 | - | - | - | <1 | 1 | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_{A}^{M\#}$ | - | <1 | - | - | - | <1 | 2 | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_{A}^{M\#}$ | - | <1 | - | - | - | <1 | 3 | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_{A}^{M\#}$ | - | 2 | - | - | - | 1 | 39 | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_{A}$ | - | <1 | - | - | - | <1 | 12 | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_{A}$ | - | 2 | - | - | - | 1 | 59 | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_{A}^{\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_{A}^{\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_{A}$ | - | <1 | - | - | - | <1 | 3 | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_{A}$ | - | <1 | - | - | - | <1 | 2 | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_{A}$ | - | <1 | - | - | - | <1 | 6 | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_{A}^{M\#}$ | - | <1 | - | - | - | <1 | 6 | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_{A}$ | - | 2 | - | - | - | 1 | 11 | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_{A}$ | - | <1 | - | - | - | <1 | 6 | mg/kg | 1 | A-T-055s |
| Total Aromatics$_{A}$ | - | 2 | - | - | - | 1 | 33 | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_{A}$ | - | 4 | - | - | - | 2 | 93 | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_{A}^{\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_{A}^{\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_{A}^{\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_{A}^{\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_{A}^{\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-022s |
| MTBE$_{A}^{\#}$ | - | <0.01 | - | - | - | <0.01 | <0.01 | mg/kg | 0.01 | A-T-022s |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| % Stones >10mm$_A$ | 3.9 | 6.6 | 6.9 | 35.4 | <0.1 | 53.1 | <0.1 | % w/w | 0.1 | A-T-044 |
| pH$_D$$^{M\#}$ | 7.90 | 7.32 | 8.63 | - | 8.74 | - | 8.56 | pH | 0.01 | A-T-031s |
| Electrical conductivity @ 20degC$_D$ | - | 442 | 115 | - | 181 | - | - | µs/cm | 10 | A-T-037s |
| Chloride (water sol 2:1)$_D$$^{M\#}$ | <10 | - | - | - | - | - | - | mg/kg | 10 | A-T-026s |
| Cyanide (total)$_A$$^{M\#}$ | <1 | <1 | <1 | - | <1 | - | <1 | mg/kg | 1 | A-T-042sTCN |
| Thiocyanate$_A$ | - | - | - | - | - | - | <5 | mg/kg | 5 | A-T-041s |
| Phenols - Total by HPLC$_A$ | <0.2 | <0.2 | <0.2 | - | <0.2 | - | <0.2 | mg/kg | 0.2 | A-T-050s |
| Sulphide$_A$ | 30 | - | - | - | - | - | - | mg/kg | 5 | A-T-043-s |
| Sulphur (elemental)$_D$$^{M\#}$ | 17 | - | - | - | - | - | - | mg/kg | 5 | A-T-029s |
| Loss on ignition (550degC)$_D$$^{M\#}$ | 27.0 | - | - | - | - | - | - | % w/w | 0.6 | A-T-030s |
| Total Organic Carbon$_D$$^{M\#}$ | 21.3 | 0.87 | 0.46 | - | 2.35 | 3.10 | 1.34 | % w/w | 0.03 | A-T-032s |
| Aluminium$_D$ | 7410 | - | - | - | - | - | - | mg/kg | 1 | A-T-024s |
| Antimony$_D$ | <5 | <5 | <5 | - | <5 | - | 5 | mg/kg | 5 | A-T-024s |
| Arsenic$_D$$^{M\#}$ | 9 | 3 | 10 | - | 4 | - | 29 | mg/kg | 1 | A-T-024s |
| Barium$_D$ | 132 | - | - | - | - | - | - | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | 1.1 | <0.5 | 1.3 | - | 0.9 | - | 1.7 | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | <1.0 | <1.0 | <1.0 | - | <1.0 | - | <1.0 | mg/kg | 1 | A-T-027s |
| Cadmium$_D$$^{M\#}$ | 0.9 | <0.5 | 0.8 | - | <0.5 | - | 1.5 | mg/kg | 0.5 | A-T-024s |
| Calcium$_D$ | 11600 | - | - | - | - | - | - | mg/kg | 50 | A-T-024s |
| Cobalt$_D$$^{M\#}$ | 12 | - | - | - | - | - | 10 | mg/kg | 1 | A-T-024s |
| Copper$_D$$^{M\#}$ | 30 | 11 | 36 | - | 25 | - | 150 | mg/kg | 1 | A-T-024s |
| Chromium$_D$$^{M\#}$ | 22 | 7 | 24 | - | 11 | - | 15 | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | - | <1 | <1 | - | - | - | <1 | mg/kg | 1 | A-T-040s |
| Iron$_D$ | 62500 | - | - | - | - | - | - | mg/kg | 50 | A-T-024s |
| Lead$_D$$^{M\#}$ | 31 | 7 | 88 | - | 93 | - | 464 | mg/kg | 1 | A-T-024s |
| Magnesium$_D$ | 1710 | - | - | - | - | - | - | mg/kg | 50 | A-T-024s |
| Manganese$_D$$^{M\#}$ | 750 | - | - | - | - | - | 247 | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | <0.17 | <0.17 | <0.17 | - | <0.17 | - | <0.17 | mg/kg | 0.17 | A-T-024s |
| Molybdenum$_D$$^{M\#}$ | <1 | - | - | - | - | - | - | mg/kg | 1 | A-T-024s |
| Nickel$_D$$^{M\#}$ | 28 | 7 | 32 | - | 14 | - | 33 | mg/kg | 1 | A-T-024s |
| Potassium$_D$ | 690 | - | - | - | - | - | - | mg/kg | 50 | A-T-024s |
| Selenium$_D$$^{M\#}$ | <1 | <1 | <1 | - | <1 | - | <1 | mg/kg | 1 | A-T-024s |
| Silver$_D$ | <10 | - | - | - | - | - | - | mg/kg | 10 | A-T-024s |

Envirolab Job Number: 22/02368

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| Tin$_{D}$ | <5 | - | - | - | - | - | - | mg/kg | 5 | A-T-024s |
| Titanium$_{D}$ | 170 | - | - | - | - | - | - | mg/kg | 5 | A-T-024s |
| Vanadium$_{D}^{M\#}$ | 24 | 8 | 31 | - | 14 | - | 39 | mg/kg | 1 | A-T-024s |
| Zinc$_{D}^{M\#}$ | 89 | 36 | 52 | - | 31 | - | 262 | mg/kg | 5 | A-T-024s |
| Redox Potential (water soluble)$_{D}$ | - | 165 | 184 | - | 210 | - | - | mV | | Probe |
| BTEX and MTBE Total$_{A}$ | - | <0.01 | <0.01 | - | <0.01 | - | - | mg/kg | 0.01 | A-T-022s |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| **Acid Herbicides (Suite 3+)** | | | | | | | | | | |
| 2,3,6-TBA$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-D$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DB$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-T$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex)$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 4-CPA$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Benazolin$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Bentazone$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Bromacil$_A$ | - | - | - | <0.1 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Bromoxynil$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Clopyralid$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Dicamba$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Diclofop$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop-isopropyl$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Fluroxypyr$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Ioxynil$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| MCPA$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| MCPB$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| MCPP; (Mecoprop)$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| PCP; (Pentachlorophenol)$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Picloram$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Triclopyr$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | NAD | NAD | NAD | - | NAD | - | NAD | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | - | - | - | - | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | - | - | - | - | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | N/A | N/A | N/A | - | N/A | - | N/A | | | A-T-045 |

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| **Carb+Urea Herbs Suite1** | | | | | | | | | | |
| Carbetamide$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Chlorbufam$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Chloroxuron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Chlorpropham$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Chlortoluron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Diflubenzuron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Dimefuron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Diuron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Ethiofencarb$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Isoproturon$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Linuron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Methabenzthiazuron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Metoxuron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Monolinuron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Monuron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Pencycuron$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Phenmedipham$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Pirimicarb$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Propham$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine and Simazine)** | | | | | | | | | | |
| Dichlobenil$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Tecnazene$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Trifluralin$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| alpha-Hexachlorocyclohexane (HCH)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Hexachlorobenzene (HCB)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Simazine$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Atrazine$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| beta-Hexachlorocyclohexane (HCH)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Quintozene (PCNB)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Chlorothalonil$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| delta-Hexachlorocyclohexane (HCH)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Triallate$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Heptachlor$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Aldrin$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Triadimefon$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Telodrin$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Isodrin$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Pendimethalin$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Heptachlor epoxide$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| trans-Chlordane (Gamma)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| o,p-DDE (2,4)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endosulphan I (Alpha)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| cis-Chlordane (Alpha)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| p,p-DDE (4,4)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Dieldrin$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| o,p-DDD (2,4)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endrin$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endosulphan II (Beta)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| p,p-DDD (4,4)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| o,p-DDT (2,4)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endrin Aldehyde$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endrin Ketone$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Endosulphan Sulphate$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| p,p-DDT (4,4)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| o,p-Methoxychlor$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| p,p-Methoxychlor$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Permethrin I (cis)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Permethrin II (trans)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Dichlorvos$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Mevinphos$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| Demeton-S$_A$ | - | - | - | <0.50 | - | - | - | mg/kg | 0.5 | A-T-056 |
| Demeton-O$_A$ | - | - | - | <0.50 | - | - | - | mg/kg | 0.5 | A-T-056 |
| Phorate$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Dimethoate$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Propetamphos$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Diazinon (Dimpylate)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Disulfoton$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | A-T-056 |
| Chlorpyrifos-methyl$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Parathion (Ethyl Parathion)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Methyl Parathion$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Pirimiphos-methyl$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Fenitrothion$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Fensulphothion$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Fenthion$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Malathion$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Chlorfenvinphos$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Chlorpyrifos$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Trichloronate$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Prothiofos (Tokuthion)$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Ethion$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Triazophos$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Carbophenothion$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Phosalone$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Azinphos-methyl$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Azinphos-ethyl$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |
| Coumaphos$_A$ | - | - | - | <0.01 | - | - | - | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| ONP (Triazines Herbicides x11) | | | | | | | | | | |
| Ametryne$_A$ | - | - | - | <0.20 | - | - | - | mg/kg | 0.2 | Subcon RPS MH |
| Atraton$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Atrazine$_A$ | - | - | - | <0.02 | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Cyanazine$_A$ | - | - | - | <0.02 | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Prometon$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Prometryn$_A$ | - | - | - | <0.02 | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Propazine$_A$ | - | - | - | <0.02 | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Simazine$_A$ | - | - | - | <0.02 | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Simetryn$_A$ | - | - | - | <0.02 | - | - | - | mg/kg | 0.1 | Agg CO2w |
| Terbuthylazine$_A$ | - | - | - | <0.02 | - | - | - | mg/kg | 0.02 | Agg CO2w |
| Terbutryn$_A$ | - | - | - | <0.02 | - | - | - | mg/kg | 0.02 | Agg CO2w |

Envirolab Job Number: 22/02368

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A$ M# | 0.18 | <0.01 | <0.01 | - | 0.11 | - | 0.09 | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A$ M# | 0.01 | <0.01 | <0.01 | - | 0.04 | - | <0.03 | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A$ M# | 0.60 | <0.02 | <0.02 | - | 0.28 | - | 0.11 | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A$ M# | 1.94 | <0.04 | <0.04 | - | 0.35 | - | 0.16 | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A$ M# | 1.28 | <0.04 | <0.04 | - | 0.29 | - | 0.13 | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A$ M# | 1.61 | <0.05 | <0.05 | - | 0.26 | - | 0.19 | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A$ M# | 0.43 | <0.05 | <0.05 | - | 0.11 | - | 0.14 | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A$ M# | 0.61 | <0.07 | <0.07 | - | 0.12 | - | <0.07 | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A$ M# | 2.45 | <0.06 | <0.06 | - | 0.40 | - | 0.26 | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A$ M# | 0.11 | <0.04 | <0.04 | - | <0.04 | - | <0.04 | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A$ M# | 5.43 | <0.08 | <0.08 | - | 0.88 | - | 0.20 | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A$ M# | 0.12 | <0.01 | <0.01 | - | 0.10 | - | <0.01 | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A$ M# | 0.48 | <0.03 | <0.03 | - | 0.11 | - | 0.10 | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A$ M# | 0.06 | <0.03 | <0.03 | - | <0.03 | - | <0.03 | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A$ M# | 2.41 | <0.03 | <0.03 | - | 1.12 | - | 0.10 | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A$ M# | 5.48 | <0.07 | <0.07 | - | 0.83 | - | 0.61 | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A$ M# | 23.2 | <0.08 | <0.08 | - | 5.00 | - | 2.09 | mg/kg | 0.01 | A-T-019s |
| | | | | | | | | | | |
| **Pyrethroids (x6)** | | | | | | | | | | |
| Cyfluthrin$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Cyhalothrin$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Cypermethrin$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Deltamethrin$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Fenvalerate$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |
| Permethrin$_A$ | - | - | - | <0.10 | - | - | - | mg/kg | 0.1 | Subcon RPS MH |

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| **Speciated PCB-WHO12** | | | | | | | | | | |
| PCB BZ 81$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 105$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 114$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 118$_A$$^{M\#}$ | <0.007 | <0.007 | <0.007 | - | - | - | <0.007 | mg/kg | 0.007 | A-T-004s |
| PCB BZ 123$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 126$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 156$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 157$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 167$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 169$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 189$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| PCB BZ 77$_A$ | <0.005 | <0.005 | <0.005 | - | - | - | <0.005 | mg/kg | 0.005 | A-T-004s |
| Total Speciated PCB-WHO12$_A$ | <0.007 | <0.007 | <0.007 | - | - | - | <0.007 | mg/kg | 0.005 | A-T-004s |

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| **SVOC+TICS (UKWIR)** | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| SVOC TICs (Tentatively Identified Compounds)$_A$ | - | None detected | None detected | - | None detected | - | - | | | A-T-052s |
| Hexachlorobenzene$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | - | <500 | <500 | - | <500 | - | <500 | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 1,2,4-Trichlorobenzene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 1,4-Dichlorobenzene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| 1,3-Dichlorobenzene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| 1,2-Dichlorobenzene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | - | 277 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Acenaphthylene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Acenaphthene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| Anthracene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Benzo(a)anthracene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Benzo(b)fluoranthene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Benzo(k)fluoranthene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Benzo(a)pyrene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Benzo(ghi)perylene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Chrysene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Fluoranthene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Fluorene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Indeno(1,2,3-cd)pyrene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Phenanthrene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Pyrene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Naphthalene$_A$ | - | 704 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Dibenzo(ah)anthracene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Pentachlorophenol (SVOC)$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | - | <500 | <500 | - | <500 | - | <500 | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Isophorone$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Hexachloroethane$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| Hexachlorobutadiene$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Cresol & Chlorinated Phenol Total$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Phenols Total (from SVOC)$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| SVOC Total (excl. PAH/Phenols/Cresols and Chlorophenols)$_A$ | - | 277 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | - | <100 | <100 | - | <100 | - | <100 | µg/kg | 100 | A-T-052s |
| SVOC Total (excl. PAH/Phenols/Cresols/Chlorophenols/Ethers/Nitrobenzene)$_A$ | - | 277 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |
| Ethers Total (from SVOC)$_A$ | - | <100 | <100 | - | <100 | - | - | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| **VOC+TICS (UKWIR)** | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Chloromethane$_{A}$ | - | <10 | <10 | - | <10 | - | <10 | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Bromomethane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Chloroethane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Dichloromethane$_{A}$ | - | <5 | <5 | - | <5 | - | <5 | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_{A}^{\#}$ | - | <5 | <5 | - | <5 | - | <5 | µg/kg | 5 | A-T-006s |
| Chloroform$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_{A}^{\#}$ | - | <2 | <2 | - | <2 | - | <2 | µg/kg | 2 | A-T-006s |
| Benzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Trichloroethene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Dibromomethane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_{A}^{\#}$ | - | <10 | <10 | - | <10 | - | <10 | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Toluene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_{A}^{\#}$ | - | <3 | <3 | - | <3 | - | <3 | µg/kg | 3 | A-T-006s |
| 1,2-Dibromoethane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| Chlorobenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_{A}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| m & p Xylene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| o-Xylene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Styrene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Bromoform$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_{A}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| Bromobenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_{A}^{\#}$ | - | <2 | <2 | - | <2 | - | <2 | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_{A}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_{A}$ | - | <2 | <2 | - | <2 | - | <2 | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_{A}$ | - | <3 | <3 | - | <3 | - | <3 | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_{A}^{\#}$ | - | <1 | <1 | - | <1 | - | <1 | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_{A}$ | - | <3 | <3 | - | <3 | - | <3 | µg/kg | 3 | A-T-006s |
| VOC Total (excl. BTEX)$_{A}$ | - | <10 | <10 | - | <10 | - | - | µg/kg | 10 | A-T-006s |
| BTEX Total (from VOC)$_{A}$ | - | <1 | <1 | - | <1 | - | - | µg/kg | 1 | A-T-006s |
| VOC TICs$_{A}$ | - | None detected | None detected | - | None detected | - | - | | | A-T-006s |

Envirolab Job Number: 22/02368

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 | 22/02368/41 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 4 | 3 | 4 | 1 | 3 | 3 | 7 | | | |
| Client Sample ID | TP307 | TP308 | TP309 | TP310 | TP310 | TT301 | TT301 | | | |
| Depth to Top | 2.00 | 1.00 | 1.00 | 0.30 | 1.00 | 1.20 | 2.45 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 24-Feb-22 | 22-Feb-22 | 23-Feb-22 | 23-Feb-22 | 22-Feb-22 | 21-Feb-22 | 21-Feb-22 | | | |
| Sample Type | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | |
| Sample Matrix Code | 7 | 6A | 5A | 4AE | 6A | 7 | 5A | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | <0.01 | <0.01 | <0.01 | - | <0.01 | - | <0.01 | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | <0.01 | <0.01 | <0.01 | - | <0.01 | - | <0.01 | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | 2 | <1 | <1 | - | <1 | - | <5 | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | 1 | <1 | <1 | - | <1 | - | 35 | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | 2 | <1 | <1 | - | <1 | - | 618 | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | 5 | <1 | <1 | - | <1 | - | 533 | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | 39 | <1 | <1 | - | <1 | - | 291 | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | 12 | <1 | <1 | - | <1 | - | <5 | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | 62 | <1 | <1 | - | <1 | - | 1480 | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | <0.01 | <0.01 | <0.01 | - | <0.01 | - | <0.01 | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | <0.01 | <0.01 | <0.01 | - | <0.01 | - | <0.01 | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | 4 | <1 | <1 | - | <1 | - | <5 | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | 2 | <1 | <1 | - | <1 | - | 13 | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | 13 | <1 | <1 | - | <1 | - | 397 | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | 39 | <1 | <1 | - | <1 | - | 363 | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | 63 | <1 | <1 | - | <1 | - | 74 | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | 5 | <1 | <1 | - | <1 | - | <5 | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | 127 | <1 | <1 | - | <1 | - | 847 | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | 189 | <1 | <1 | - | <1 | - | 2320 | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | <0.01 | <0.01 | <0.01 | - | <0.01 | - | <0.01 | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | <0.01 | <0.01 | <0.01 | - | <0.01 | - | <0.01 | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | <0.01 | <0.01 | <0.01 | - | <0.01 | - | <0.01 | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | <0.01 | <0.01 | <0.01 | - | <0.01 | - | <0.01 | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | <0.01 | <0.01 | <0.01 | - | <0.01 | - | <0.01 | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | <0.01 | <0.01 | <0.01 | - | <0.01 | - | <0.01 | mg/kg | 0.01 | A-T-022s |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 1 | 2 | 1 | 1 | | | | | | |
| Client Sample ID | TT302 | TT302 | TT303 | TT303A | | | | | | |
| Depth to Top | 0.30 | 0.80 | 0.35 | 0.60 | | | | | | |
| Depth To Bottom | | 1.00 | | | | | | | | |
| Date Sampled | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | | | | | | |
| Sample Type | Solid | Solid | Solid | Solid | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | 7 | | | | | | |
| % Stones >10mm$_A$ | <0.1 | 13.5 | 20.4 | 26.3 | | | | % w/w | 0.1 | A-T-044 |
| pH$_D$$^{M\#}$ | 8.21 | - | 6.48 | - | | | | pH | 0.01 | A-T-031s |
| Chloride (water sol 2:1)$_D$$^{M\#}$ | <10 | - | <10 | - | | | | mg/kg | 10 | A-T-026s |
| Cyanide (complex)$_A$ | 9 | - | 4 | - | | | | | 1 | A-T-042sCCN |
| Cyanide (total)$_A$$^{M\#}$ | 10 | - | 4 | - | | | | mg/kg | 1 | A-T-042sTCN |
| Thiocyanate$_A$ | <5 | - | <5 | - | | | | mg/kg | 5 | A-T-041s |
| Phenols - Total by HPLC$_A$ | <0.2 | - | 0.2 | - | | | | mg/kg | 0.2 | A-T-050s |
| Sulphide$_A$ | <5 | - | <5 | - | | | | mg/kg | 5 | A-T-043-s |
| Sulphur (elemental)$_D$$^{M\#}$ | 890 | - | <5 | - | | | | mg/kg | 5 | A-T-029s |
| Loss on ignition (550degC)$_D$$^{M\#}$ | NDP | - | 53.0 | - | | | | % w/w | 0.6 | A-T-030s |
| Total Organic Carbon$_D$$^{M\#}$ | NDP | 36.2 | 48.2 | 17.4 | | | | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | <5 | - | 10 | - | | | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$$^{M\#}$ | 11 | - | 24 | - | | | | mg/kg | 1 | A-T-024s |
| Barium$_D$ | 198 | - | 88 | - | | | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | 0.6 | - | 0.7 | - | | | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | <1.0 | - | <1.0 | - | | | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$$^{M\#}$ | 0.5 | - | 1.7 | - | | | | mg/kg | 0.5 | A-T-024s |
| Cobalt$_D$$^{M\#}$ | 4 | - | 11 | - | | | | mg/kg | 1 | A-T-024s |
| Copper$_D$$^{M\#}$ | 65 | - | 87 | - | | | | mg/kg | 1 | A-T-024s |
| Chromium$_D$$^{M\#}$ | 7 | - | 40 | - | | | | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | <1 | - | <1 | - | | | | mg/kg | 1 | A-T-040s |
| Lead$_D$$^{M\#}$ | 162 | - | 46 | - | | | | mg/kg | 1 | A-T-024s |
| Manganese$_D$$^{M\#}$ | 63 | - | 582 | - | | | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | <0.17 | - | <0.17 | - | | | | mg/kg | 0.17 | A-T-024s |
| Molybdenum$_D$$^{M\#}$ | 1 | - | 3 | - | | | | mg/kg | 1 | A-T-024s |
| Nickel$_D$$^{M\#}$ | 12 | - | 35 | - | | | | mg/kg | 1 | A-T-024s |
| Selenium$_D$$^{M\#}$ | 1 | - | <1 | - | | | | mg/kg | 1 | A-T-024s |
| Vanadium$_D$$^{M\#}$ | 13 | - | 40 | - | | | | mg/kg | 1 | A-T-024s |
| Zinc$_D$$^{M\#}$ | 126 | - | 76 | - | | | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 1 | 2 | 1 | 1 | | | | | | |
| Client Sample ID | TT302 | TT302 | TT303 | TT303A | | | | | | |
| Depth to Top | 0.30 | 0.80 | 0.35 | 0.60 | | | | | | |
| Depth To Bottom | | 1.00 | | | | | | | | |
| Date Sampled | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | | | | | | |
| Sample Type | Solid | Solid | Solid | Solid | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | 7 | | | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | Chrysotile | - | NAD | - | | | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | Cement | - | - | - | | | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | - | | | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | Yes | - | N/A | - | | | | | | A-T-045 |
| | | | | | | | | | | |
| **Asbestos in Soil Quantification % (Hand Picking & Weighing)** | | | | | | | | | | |
| Asbestos in soil % composition (hand picking and weighing)$_{D}$ | 1.539 | - | - | - | | | | % w/w | 0.001 | A-T-054 |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 1 | 2 | 1 | 1 | | | | | | |
| Client Sample ID | TT302 | TT302 | TT303 | TT303A | | | | | | |
| Depth to Top | 0.30 | 0.80 | 0.35 | 0.60 | | | | | | |
| Depth To Bottom | | 1.00 | | | | | | | | |
| Date Sampled | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | | | | | | |
| Sample Type | Solid | Solid | Solid | Solid | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | 7 | | | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | 7.29 | - | 94.1 | - | | | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | 10.9 | - | 110 | - | | | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | 19.1 | - | 155 | - | | | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | 39.6 | - | 205 | - | | | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | 39.6 | - | 123 | - | | | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | 35.8 | - | 111 | - | | | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | 29.9 | - | 74.6 | - | | | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | 12.7 | - | 48.8 | - | | | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | 60 | - | 409 | - | | | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | 5.51 | - | 19.2 | - | | | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | 59 | - | 272 | - | | | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | 13.4 | - | 248 | - | | | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | 24.1 | - | 65.4 | - | | | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | 9.57 | - | 822 | - | | | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | 74.4 | - | 1080 | - | | | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | 129 | - | 437 | - | | | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | 570 | - | 4270 | - | | | | mg/kg | 0.01 | A-T-019s |

**Envirolab Job Number: 22/02368**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 1 | 2 | 1 | 1 | | | | | | |
| Client Sample ID | TT302 | TT302 | TT303 | TT303A | | | | | | |
| Depth to Top | 0.30 | 0.80 | 0.35 | 0.60 | | | | | | |
| Depth To Bottom | | 1.00 | | | | | | | | |
| Date Sampled | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | | | | | | |
| Sample Type | Solid | Solid | Solid | Solid | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | 7 | | | | | | |
| **Speciated PCB-WHO12** | | | | | | | | | | |
| PCB BZ 81$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 105$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 114$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 118$_{A}^{M\#}$ | <0.007 | - | <0.070 | - | | | | mg/kg | 0.007 | A-T-004s |
| PCB BZ 123$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 126$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 156$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 157$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 167$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 169$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 189$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 77$_{A}$ | <0.005 | - | <0.050 | - | | | | mg/kg | 0.005 | A-T-004s |
| Total Speciated PCB-WHO12$_{A}$ | <0.007 | - | <0.070 | - | | | | mg/kg | 0.005 | A-T-004s |

| Lab Sample ID | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 1 | 2 | 1 | 1 | | | | | | |
| Client Sample ID | TT302 | TT302 | TT303 | TT303A | | | | | | |
| Depth to Top | 0.30 | 0.80 | 0.35 | 0.60 | | | | | | |
| Depth To Bottom | | 1.00 | | | | | | | | |
| Date Sampled | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | | | | | | |
| Sample Type | Solid | Solid | Solid | Solid | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | 7 | | | | | | |
| SVOC+TICS (UKWIR) | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Hexachlorobenzene$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | <25000 | - | <25000 | - | | | | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | 9540 | - | 23800 | - | | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Pentachlorophenol (SVOC)$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | <25000 | - | <25000 | - | | | | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Isophorone$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |

Envirolab Job Number: 22/02368

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 1 | 2 | 1 | 1 | | | | | | |
| Client Sample ID | TT302 | TT302 | TT303 | TT303A | | | | | | |
| Depth to Top | 0.30 | 0.80 | 0.35 | 0.60 | | | | | | |
| Depth To Bottom | | 1.00 | | | | | | | | |
| Date Sampled | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | | | | | | |
| Sample Type | Solid | Solid | Solid | Solid | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | 7 | | | | | | |
| Hexachloroethane$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | <5000 | - | <5000 | - | | | | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | 25600 | - | 83000 | - | | | | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 1 | 2 | 1 | 1 | | | | | | |
| Client Sample ID | TT302 | TT302 | TT303 | TT303A | | | | | | |
| Depth to Top | 0.30 | 0.80 | 0.35 | 0.60 | | | | | | |
| Depth To Bottom | | 1.00 | | | | | | | | |
| Date Sampled | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | | | | | | |
| Sample Type | Solid | Solid | Solid | Solid | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | 7 | | | | | | |
| **VOC+TICS (UKWIR)** | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Chloromethane$_{A}$ | <50 | - | <10 | - | | | | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Bromomethane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Chloroethane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_{A}^{\#}$ | <5 | - | 1 | - | | | | µg/kg | 1 | A-T-006s |
| Dichloromethane$_{A}$ | <25 | - | <5 | - | | | | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_{A}^{\#}$ | <25 | - | <5 | - | | | | µg/kg | 5 | A-T-006s |
| Chloroform$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_{A}^{\#}$ | <10 | - | <2 | - | | | | µg/kg | 2 | A-T-006s |
| Benzene$_{A}^{\#}$ | 69 | - | 18 | - | | | | µg/kg | 1 | A-T-006s |
| Trichloroethene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Dibromomethane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_{A}^{\#}$ | <50 | - | <10 | - | | | | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Toluene$_{A}^{\#}$ | 48 | - | 57 | - | | | | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_{A}^{\#}$ | <15 | - | <3 | - | | | | µg/kg | 3 | A-T-006s |
| 1,2-Dibromoethane$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |

| Lab Sample ID | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 1 | 2 | 1 | 1 | | | | | | |
| Client Sample ID | TT302 | TT302 | TT303 | TT303A | | | | | | |
| Depth to Top | 0.30 | 0.80 | 0.35 | 0.60 | | | | | | |
| Depth To Bottom | | 1.00 | | | | | | | | |
| Date Sampled | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | | | | | | |
| Sample Type | Solid | Solid | Solid | Solid | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | 7 | | | | | | |
| Chlorobenzene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_{A}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_{A}^{\#}$ | 34 | - | 31 | - | | | | µg/kg | 1 | A-T-006s |
| m & p Xylene$_{A}^{\#}$ | 36 | - | 228 | - | | | | µg/kg | 1 | A-T-006s |
| o-Xylene$_{A}^{\#}$ | 31 | - | 514 | - | | | | µg/kg | 1 | A-T-006s |
| Styrene$_{A}^{\#}$ | <5 | - | 125 | - | | | | µg/kg | 1 | A-T-006s |
| Bromoform$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_{A}^{\#}$ | <5 | - | 5 | - | | | | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_{A}$ | <5 | - | 36 | - | | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | <5 | - | 6 | - | | | | µg/kg | 1 | A-T-006s |
| Bromobenzene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_{A}^{\#}$ | <5 | - | 6 | - | | | | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_{A}^{\#}$ | <5 | - | 30 | - | | | | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | 20 | - | 222 | - | | | | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_{A}^{\#}$ | <10 | - | <2 | - | | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | 8 | - | 533 | - | | | | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_{A}^{\#}$ | <5 | - | 20 | - | | | | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_{A}^{\#}$ | 6 | - | 3 | - | | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_{A}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_{A}^{\#}$ | <5 | - | 23 | - | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_{A}$ | <10 | - | 7 | - | | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_{A}$ | <15 | - | 3 | - | | | | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_{A}^{\#}$ | <5 | - | <1 | - | | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_{A}$ | <15 | - | <3 | - | | | | µg/kg | 3 | A-T-006s |

Envirolab Job Number: 22/02368

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 1 | 2 | 1 | 1 | | | | | | |
| Client Sample ID | TT302 | TT302 | TT303 | TT303A | | | | | | |
| Depth to Top | 0.30 | 0.80 | 0.35 | 0.60 | | | | | | |
| Depth To Bottom | | 1.00 | | | | | | | | |
| Date Sampled | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | 17-Feb-22 | | | | | | |
| Sample Type | Solid | Solid | Solid | Solid | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | 7 | | | | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | <0.01 | - | <0.10 | - | | | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | 0.03 | - | <0.10 | - | | | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | 34 | - | <200 | - | | | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | 65 | - | <200 | - | | | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | 262 | - | 1080 | - | | | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | 315 | - | 945 | - | | | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | 222 | - | 2710 | - | | | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | 213 | - | 1210 | - | | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | 1110 | - | 5930 | - | | | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | 0.41 | - | 0.14 | - | | | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | 0.38 | - | 0.32 | - | | | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | 109 | - | 395 | - | | | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | 105 | - | 1280 | - | | | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | 675 | - | 5680 | - | | | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | 1540 | - | 10900 | - | | | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | 3710 | - | 27800 | - | | | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | 192 | - | 1110 | - | | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | 6340 | - | 47100 | - | | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | 7450 | - | 53000 | - | | | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | 0.41 | - | 0.14 | - | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | 0.38 | - | 0.32 | - | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | 0.34 | - | 0.11 | - | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | 0.55 | - | 0.82 | - | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | 0.46 | - | 2.13 | - | | | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | <0.01 | - | <0.10 | - | | | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Project No:** 22/02368

**Date Received:** 14/03/2022 (am)

**Cool Box Temperatures (°C):** 6.0, 6.2, 6.8, 7.0, 6.5, 7.0

**Clients Project No:** 326R

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | 3 | 4 | 1 | 3 | 3 |
| Client Sample ID/Depth | TP304 0.50m | TP304 1.00m | TP304 2.90m | TP305 1.00m | TP305 2.00m | TP305 3.00m | TP306 0.50m | TP308 1.00m | TP309 1.00m | TP310 0.30m | TP310 1.00m | TT301 1.20m |
| Date Sampled | 22/02/22 | 22/02/22 | 22/02/22 | 24/02/22 | 24/02/22 | 24/02/22 | 25/02/22 | 22/02/22 | 23/02/22 | 23/02/22 | 22/02/22 | 21/02/22 |
| Deviation Code | | | | | | | | | | | | |
| F | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

| Lab Sample ID | 22/02368/41 | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 |
|---|---|---|---|---|---|
| Client Sample No | 7 | 1 | 2 | 1 | 1 |
| Client Sample ID/Depth | TT301 2.45m | TT302 0.30m | TT302 0.80-1.00m | TT303 0.35m | TT303A 0.60m |
| Date Sampled | 21/02/22 | 17/02/22 | 17/02/22 | 17/02/22 | 17/02/22 |
| Deviation Code | | | | | |
| F | ✓ | ✓ | ✓ | ✓ | ✓ |

*Key*
*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | 3 | 4 | 1 | 3 | 3 |
| Client Sample ID/Depth | TP304 0.50m | TP304 1.00m | TP304 2.90m | TP305 1.00m | TP305 2.00m | TP305 3.00m | TP306 0.50m | TP308 1.00m | TP309 1.00m | TP310 0.30m | TP310 1.00m | TT301 1.20m |
| Date Sampled | 22/02/22 | 22/02/22 | 22/02/22 | 24/02/22 | 24/02/22 | 24/02/22 | 25/02/22 | 22/02/22 | 23/02/22 | 23/02/22 | 22/02/22 | 21/02/22 |
| Acid Herbicides (Suite 3+) | ✓ | | | | | | | | | ✓ | | |
| Carb+Urea Herbs Suite1 | ✓ | | | | | | | | | ✓ | | |
| Pyrethroids (x6) | ✓ | | | | | | | | | ✓ | | |

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 | 22/02368/39 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Client Sample No** | 2 | 3 | 5 | 3 | 5 | 6 | 2 | 3 | 4 | 1 | 3 | 3 |
| **Client Sample ID/Depth** | TP304 0.50m | TP304 1.00m | TP304 2.90m | TP305 1.00m | TP305 2.00m | TP305 3.00m | TP306 0.50m | TP308 1.00m | TP309 1.00m | TP310 0.30m | TP310 1.00m | TT301 1.20m |
| **Date Sampled** | 22/02/22 | 22/02/22 | 22/02/22 | 24/02/22 | 24/02/22 | 24/02/22 | 25/02/22 | 22/02/22 | 23/02/22 | 23/02/22 | 22/02/22 | 21/02/22 |
| Cyanide (total) | | ✓ | | | | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| Total Organic Carbon | | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | | ✓ | |
| VPHCWG | | ✓ | | | | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| PAH-16MS | | ✓ | | | | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| PAH (total 17) | | | ✓ | ✓ | ✓ | | ✓ | | | | | ✓ |
| BTEX (total) | | | ✓ | ✓ | ✓ | | ✓ | | | | | ✓ |
| VOC | | | | | | ✓ | | | ✓ | | | |
| SVOC | | | | | | ✓ | | | ✓ | | | |
| Sulphide | | | | | | | ✓ | | | | | |
| VOC+TICS (UKWIR) | | | | | | | | ✓ | ✓ | | ✓ | |
| SVOC+TICS (UKWIR) | | | | | | | | ✓ | ✓ | | ✓ | |
| BTEX and MTBE Total | | | | | | | | ✓ | ✓ | | ✓ | |

| Lab Sample ID | 22/02368/41 | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 |
|---|---|---|---|---|---|
| Client Sample No | 7 | 1 | 2 | 1 | 1 |
| Client Sample ID/Depth | TT301 2.45m | TT302 0.30m | TT302 0.80-1.00m | TT303 0.35m | TT303A 0.60m |
| Date Sampled | 21/02/22 | 17/02/22 | 17/02/22 | 17/02/22 | 17/02/22 |
| Acid Herbicides (Suite 3+) | | | | | |
| Carb+Urea Herbs Suite1 | | | | | |
| Pyrethroids (x6) | | | | | |
| Cyanide (total) | ✓ | ✓ | | ✓ | |
| Total Organic Carbon | ✓ | | | | |
| VPHCWG | ✓ | ✓ | | ✓ | |
| PAH-16MS | ✓ | ✓ | | ✓ | |
| PAH (total 17) | | | ✓ | | ✓ |
| BTEX (total) | | | ✓ | | ✓ |
| VOC | ✓ | ✓ | | ✓ | |
| SVOC | ✓ | ✓ | | ✓ | |
| Sulphide | | ✓ | | ✓ | |
| VOC+TICS (UKWIR) | | | | | |
| SVOC+TICS (UKWIR) | | | | | |
| BTEX and MTBE Total | | | | | |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 2 | 3 | 5 | 3 | 5 | 6 | 2 | 4 | 3 | 4 | 1 | 3 |
| Client Sample ID/Depth | TP304 0.50m | TP304 1.00m | TP304 2.90m | TP305 1.00m | TP305 2.00m | TP305 3.00m | TP306 0.50m | TP307 2.00m | TP308 1.00m | TP309 1.00m | TP310 0.30m | TP310 1.00m |
| Date Sampled | 22/02/22 | 22/02/22 | 22/02/22 | 24/02/22 | 24/02/22 | 24/02/22 | 25/02/22 | 24/02/22 | 22/02/22 | 23/02/22 | 23/02/22 | 22/02/22 |
| A-T-004s | | | 18/03/2022 | 18/03/2022 | 18/03/2022 | | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | | |
| A-T-006s | | | | | | 23/03/2022 | | | 28/03/2022 | 24/03/2022 | | 24/03/2022 |
| A-T-007s | | | 21/03/2022 | 21/03/2022 | 21/03/2022 | | 21/03/2022 | | | | | |
| A-T-019s | | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | | 18/03/2022 |
| A-T-022s | | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | | 21/03/2022 |
| A-T-024s | | 22/03/2022 | | | | 22/03/2022 | 23/03/2022 | 23/03/2022 | 22/03/2022 | 22/03/2022 | | 22/03/2022 |
| A-T-025w | | | 28/03/2022 | 28/03/2022 | 28/03/2022 | | 28/03/2022 | | | | | |
| A-T-026s | | | | | | | 17/03/2022 | 17/03/2022 | | | | |
| A-T-026w | | | 28/03/2022 | 28/03/2022 | 28/03/2022 | | 28/03/2022 | | | | | |
| A-T-027s | | 17/03/2022 | | | | 17/03/2022 | 17/03/2022 | 17/03/2022 | 17/03/2022 | 17/03/2022 | | 17/03/2022 |
| A-T-029s | | | | | | | 17/03/2022 | 17/03/2022 | | | | |
| A-T-030s | | | | | | | 28/03/2022 | 28/03/2022 | | | | |
| A-T-031s | | 17/03/2022 | | | | 17/03/2022 | 17/03/2022 | 17/03/2022 | 17/03/2022 | 17/03/2022 | | 17/03/2022 |
| A-T-031w | | | 28/03/2022 | 28/03/2022 | 28/03/2022 | | 28/03/2022 | | | | | |
| A-T-032s | | 25/03/2022 | 25/03/2022 | 25/03/2022 | 25/03/2022 | 25/03/2022 | 28/03/2022 | 28/03/2022 | 25/03/2022 | 25/03/2022 | | 25/03/2022 |
| A-T-032w | | | 28/03/2022 | 28/03/2022 | 28/03/2022 | | 28/03/2022 | | | | | |
| A-T-037s | | | | | | | | | 21/03/2022 | 21/03/2022 | | 21/03/2022 |
| A-T-037w | | | 28/03/2022 | 28/03/2022 | 28/03/2022 | | 28/03/2022 | | | | | |
| A-T-040s | | | | | | | | | 17/03/2022 | 17/03/2022 | | |
| A-T-041s | | | | | | | | | | | | |
| A-T-042sCCN | | | | | | | | | | | | |
| A-T-042sTCN | | 18/03/2022 | | | | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | | 18/03/2022 |
| A-T-043-s | | | | | | | 21/03/2022 | 21/03/2022 | | | | |
| A-T-044 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 |
| A-T-045 | | 15/03/2022 | | | | 15/03/2022 | 15/03/2022 | 15/03/2022 | 15/03/2022 | 15/03/2022 | | 15/03/2022 |
| A-T-050s | | 21/03/2022 | | | | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | | 21/03/2022 |
| A-T-050w | | | 28/03/2022 | 28/03/2022 | 28/03/2022 | | 28/03/2022 | | | | | |
| A-T-052s | | | | | | 21/03/2022 | | | 23/03/2022 | 23/03/2022 | | 23/03/2022 |
| A-T-054 | | | | | | | | | | | | |
| A-T-055s | | 21/03/2022 | | | | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | | 21/03/2022 |
| A-T-056 | 18/03/2022 | | | | | | | | | | 18/03/2022 | |
| Agg CO2w | 23/03/2022 | | | | | | | | | | 23/03/2022 | |

| Lab Sample ID | 22/02368/2 | 22/02368/3 | 22/02368/5 | 22/02368/8 | 22/02368/10 | 22/02368/11 | 22/02368/13 | 22/02368/20 | 22/02368/24 | 22/02368/30 | 22/02368/32 | 22/02368/34 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Client Sample No** | 2 | 3 | 5 | 3 | 5 | 6 | 2 | 4 | 3 | 4 | 1 | 3 |
| **Client Sample ID/Depth** | TP304 0.50m | TP304 1.00m | TP304 2.90m | TP305 1.00m | TP305 2.00m | TP305 3.00m | TP306 0.50m | TP307 2.00m | TP308 1.00m | TP309 1.00m | TP310 0.30m | TP310 1.00m |
| **Date Sampled** | 22/02/22 | 22/02/22 | 22/02/22 | 24/02/22 | 24/02/22 | 24/02/22 | 25/02/22 | 24/02/22 | 22/02/22 | 23/02/22 | 23/02/22 | 22/02/22 |
| Calc-no stones | | | 28/03/2022 | 28/03/2022 | 28/03/2022 | | 28/03/2022 | | | | | |
| Probe | | | | | | | | | 21/03/2022 | 21/03/2022 | | 21/03/2022 |
| Probe (w) | | | 28/03/2022 | 28/03/2022 | 28/03/2022 | | 28/03/2022 | | | | | |

| Lab Sample ID | 22/02368/39 | 22/02368/41 | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 |
|---|---|---|---|---|---|---|
| Client Sample No | 3 | 7 | 1 | 2 | 1 | 1 |
| Client Sample ID/Depth | TT301 1.20m | TT301 2.45m | TT302 0.30m | TT302 0.80-1.00m | TT303 0.35m | TT303A 0.60m |
| Date Sampled | 21/02/22 | 21/02/22 | 17/02/22 | 17/02/22 | 17/02/22 | 17/02/22 |
| A-T-004s | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | 22/03/2022 | 18/03/2022 |
| A-T-006s | | 18/03/2022 | 23/03/2022 | | 18/03/2022 | |
| A-T-007s | 21/03/2022 | | | 21/03/2022 | | 21/03/2022 |
| A-T-019s | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 | 18/03/2022 |
| A-T-022s | 21/03/2022 | 23/03/2022 | 21/03/2022 | 23/03/2022 | 23/03/2022 | 21/03/2022 |
| A-T-024s | | 22/03/2022 | 22/03/2022 | | 22/03/2022 | |
| A-T-025w | 28/03/2022 | | | 28/03/2022 | | 28/03/2022 |
| A-T-026s | | | 17/03/2022 | | 17/03/2022 | |
| A-T-026w | 28/03/2022 | | | 28/03/2022 | | 28/03/2022 |
| A-T-027s | | 17/03/2022 | 17/03/2022 | | 17/03/2022 | |
| A-T-029s | | | 22/03/2022 | | 23/03/2022 | |
| A-T-030s | | | 25/03/2022 | | 17/03/2022 | |
| A-T-031s | | 17/03/2022 | 17/03/2022 | | 17/03/2022 | |
| A-T-031w | 28/03/2022 | | | 28/03/2022 | | 28/03/2022 |
| A-T-032s | 25/03/2022 | 25/03/2022 | 25/03/2022 | 25/03/2022 | 25/03/2022 | 25/03/2022 |
| A-T-032w | 28/03/2022 | | | 28/03/2022 | | 28/03/2022 |
| A-T-037s | | | | | | |
| A-T-037w | 28/03/2022 | | | 28/03/2022 | | 28/03/2022 |
| A-T-040s | | 17/03/2022 | 17/03/2022 | | 17/03/2022 | |
| A-T-041s | | 18/03/2022 | 18/03/2022 | | 18/03/2022 | |
| A-T-042sCCN | | | 23/03/2022 | | 23/03/2022 | |
| A-T-042sTCN | | 18/03/2022 | 18/03/2022 | | 18/03/2022 | |
| A-T-043-s | | | 21/03/2022 | | 21/03/2022 | |
| A-T-044 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 | 16/03/2022 |
| A-T-045 | | 15/03/2022 | 15/03/2022 | | 15/03/2022 | |
| A-T-050s | | 21/03/2022 | 21/03/2022 | | 21/03/2022 | |
| A-T-050w | 28/03/2022 | | | 28/03/2022 | | 28/03/2022 |
| A-T-052s | | 21/03/2022 | 22/03/2022 | | 22/03/2022 | |
| A-T-054 | | | 16/03/2022 | | | |
| A-T-055s | | 23/03/2022 | 21/03/2022 | | 23/03/2022 | |
| A-T-056 | | | | | | |
| Agg CO2w | | | | | | |
| Calc-no stones | 28/03/2022 | | | 28/03/2022 | | 28/03/2022 |
| Probe | | | | | | |

| Lab Sample ID | 22/02368/39 | 22/02368/41 | 22/02368/42 | 22/02368/43 | 22/02368/44 | 22/02368/46 |
|---|---|---|---|---|---|---|
| Client Sample No | 3 | 7 | 1 | 2 | 1 | 1 |
| Client Sample ID/Depth | TT301 1.20m | TT301 2.45m | TT302 0.30m | TT302 0.80-1.00m | TT303 0.35m | TT303A 0.60m |
| Date Sampled | 21/02/22 | 21/02/22 | 17/02/22 | 17/02/22 | 17/02/22 | 17/02/22 |
| Probe (w) | 28/03/2022 | | | 28/03/2022 | | 28/03/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | | | |
|---|---|---|---|
| Envirolab Job Number: | 22/02368 | | |
| Issue Number: | 1 | Date: | 29-Mar-22 |

Client: BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK, WA5 7ZT

| | |
|---|---|
| Project Manager: | Andy Bird |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project Ref: | 326R |
| Order No: | RIT 262 915 759 |
| Date Samples Received: | 25-Feb-22 |
| Date Instructions Received: | 14-Mar-22 |
| Date Analysis Completed: | 28-Mar-22 |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Richard Wong
Client Manager

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02368/5 | | | | |
| Client Sample Number | | | | 5 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | TP304 | | | | |
| Depth to Top | | | | 2.9 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 22/02/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **13.5** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **9.19** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **156** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.036 | **0.360** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.004 | **0.040** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.004 | **0.040** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.001 | **0.010** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.003 | **0.030** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.002 | **0.020** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.013 | **0.130** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 3 | **32** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.7 | **7.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 65 | **646** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 145 | **1450** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.7 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 291 | | | | |
| Mass Sample (kg) | | | | 0.22 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 79.4 | | | | |

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| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02368/8 | | | | |
| Client Sample Number | | | | 3 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | TP305 | | | | |
| Depth to Top | | | | 1 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 24/02/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **31.4** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **0.36** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **228** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.006 | **0.060** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.060 | **0.600** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.370 | **3.700** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.005 | **0.050** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.541 | **5.410** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.005 | **0.050** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.215 | **2.150** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 6 | **59** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.6 | **6.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 4 | **45** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | <20 | **<200** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | 20.60 | **206** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 8.0 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 36 | | | | |
| Mass Sample (kg) | | | | 0.235 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 74.4 | | | | |

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| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02368/10 | | | | |
| Client Sample Number | | | | 5 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | TP305 | | | | |
| Depth to Top | | | | 2 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 24/02/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **22.4** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **0.18** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **16** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.005 | **0.050** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.045 | **0.450** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.218 | **2.180** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.006 | **0.060** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.312 | **3.120** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.003 | **0.030** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.154 | **1.540** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | <1.00 | **<10** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.5 | **5.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 5 | **48** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | <20 | **<200** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 8.1 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 36 | | | | |
| Mass Sample (kg) | | | | 0.24 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 72.8 | | | | |

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| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02368/13 | | | | |
| Client Sample Number | | | | 2 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | TP306 | | | | |
| Depth to Top | | | | 0.5 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 25/02/2022 | | | | |
| Sample Type | | | | Solid | | | | |
| Sample Matrix Code | | | | 7 | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | **6.11** | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **34.3** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **2.43** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **139** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.020 | **0.200** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.651 | **6.510** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | 0.001 | **0.010** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.011 | **0.110** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.175 | **1.750** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.020 | **0.200** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.301 | **3.010** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.003 | **0.030** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | 0.001 | **0.010** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.302 | **3.020** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 1 | **12** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.5 | **5.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 11 | **106** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 23 | **230** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | 65.70 | **657** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.9 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 46 | | | | |
| Mass Sample (kg) | | | | 0.231 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 75.6 | | | | |

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| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02368/39 | | | | |
| Client Sample Number | | | | 3 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | TT301 | | | | |
| Depth to Top | | | | 1.2 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 21/02/2022 | | | | |
| Sample Type | | | | Solid | | | | |
| Sample Matrix Code | | | | 7 | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **3.1** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **15.4** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **33** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.003 | **0.030** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.094 | **0.940** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.019 | **0.190** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.003 | **0.030** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | <0.001 | **<0.01** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.051 | **0.510** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.002 | **0.020** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.037 | **0.370** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | <1.00 | **<10** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.3 | **3.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 4 | **41** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 40 | **400** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 8.4 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 79 | | | | |
| Mass Sample (kg) | | | | 0.188 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 93 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02368/43 | | | | |
| Client Sample Number | | | | 2 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | TT302 | | | | |
| Depth to Top | | | | 0.8 | | | | |
| Depth to Bottom | | | | 1.00 | | | | |
| Date Sampled | | | | 17/02/2022 | | | | |
| Sample Type | | | | Solid | | | | |
| Sample Matrix Code | | | | 7 | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **36.2** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **75** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **1740** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **5.9** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.256 | **2.560** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.026 | **0.260** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.005 | **0.050** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.002 | **0.020** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.103 | **1.030** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.002 | **0.020** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.025 | **0.250** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 8 | **84** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.9 | **9.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 9 | **94** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 124 | **1240** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | 44.60 | **446** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 8.1 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 249 | | | | |
| Mass Sample (kg) | | | | 0.296 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 59.1 | | | | |

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02368/46 | | | | |
| Client Sample Number | | | | 1 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | TT303A | | | | |
| Depth to Top | | | | 0.6 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 17/02/2022 | | | | |
| Sample Type | | | | Solid | | | | |
| Sample Matrix Code | | | | 7 | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **17.4** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **519** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **1030** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.007 | **0.070** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.159 | **1.590** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.072 | **0.720** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.007 | **0.070** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.003 | **0.030** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.197 | **1.970** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.002 | **0.020** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.082 | **0.820** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 5 | **51** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 1.3 | **13.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 6 | **58** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 64 | **640** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | 32.90 | **329** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 8.3 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 128 | | | | |
| Mass Sample (kg) | | | | 0.209 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 83.6 | | | | |

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/02473
**Issue Number:** 1 **Date:** 29 March, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Mailing list 1/Mailing list 2
**Project Name:** Victoria North HIF infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 10/03/22
**Date Instructions Received:** 15/03/22
**Date Analysis Completed:** 29/03/22

**Approved by:**



Sophie France
Client Service Manager

**Envirolab Job Number: 22/02473**

**Client Project Name: Victoria North HIF infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02473/2 | 22/02473/3 | 22/02473/7 | 22/02473/15 | 22/02473/16 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH304. ES02 | 326R.BH304. ES03 | 326R.BH304. ES07 | 326R.BH304. ES15 | 326R.BH304. ES16 | | | | | |
| Client Sample ID | BH304 | BH304 | BH304 | BH304 | BH304 | | | | | |
| Depth to Top | 0.50 | 1.00 | 5.00 | 13.00 | 14.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 16-Feb-22 | 16-Feb-22 | 18-Feb-22 | 18-Feb-22 | 18-Feb-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | 5AE | 7 | | | | | |
| % Stones >10mm$_A$ | 32.9 | 45.7 | 5.3 | 0.9 | <0.1 | | | % w/w | 0.1 | A-T-044 |
| pH$_D$$^{M\#}$ | 7.38 | - | 7.64 | 7.18 | - | | | pH | 0.01 | A-T-031s |
| Cyanide (total)$_A$$^{M\#}$ | <1 | - | <1 | <1 | - | | | mg/kg | 1 | A-T-042sTCN |
| Phenols - Total by HPLC$_A$ | <0.2 | - | <0.2 | <0.2 | - | | | mg/kg | 0.2 | A-T-050s |
| Total Organic Carbon$_D$$^{M\#}$ | 18.9 | 13.4 | 21.1 | 2.28 | 1.23 | | | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | <5 | - | <5 | <5 | - | | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$$^{M\#}$ | 21 | - | 27 | 5 | - | | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | 1.6 | - | 1.3 | 0.7 | - | | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | <1.0 | - | <1.0 | <1.0 | - | | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$$^{M\#}$ | 4.7 | - | 2.3 | 1.1 | - | | | mg/kg | 0.5 | A-T-024s |
| Copper$_D$$^{M\#}$ | 182 | - | 103 | 31 | - | | | mg/kg | 1 | A-T-024s |
| Chromium$_D$$^{M\#}$ | 16 | - | 18 | 12 | - | | | mg/kg | 1 | A-T-024s |
| Lead$_D$$^{M\#}$ | 547 | - | 90 | 27 | - | | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | <0.17 | - | <0.17 | <0.17 | - | | | mg/kg | 0.17 | A-T-024s |
| Nickel$_D$$^{M\#}$ | 29 | - | 43 | 21 | - | | | mg/kg | 1 | A-T-024s |
| Selenium$_D$$^{M\#}$ | <1 | - | <1 | <1 | - | | | mg/kg | 1 | A-T-024s |
| Vanadium$_D$$^{M\#}$ | 48 | - | 26 | 16 | - | | | mg/kg | 1 | A-T-024s |
| Zinc$_D$$^{M\#}$ | 1300 | - | 224 | 69 | - | | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/02473**

**Client Project Name: Victoria North HIF infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02473/2 | 22/02473/3 | 22/02473/7 | 22/02473/15 | 22/02473/16 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH304.ES02 | 326R.BH304.ES03 | 326R.BH304.ES07 | 326R.BH304.ES15 | 326R.BH304.ES16 | | | | | |
| Client Sample ID | BH304 | BH304 | BH304 | BH304 | BH304 | | | | | |
| Depth to Top | 0.50 | 1.00 | 5.00 | 13.00 | 14.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 16-Feb-22 | 16-Feb-22 | 18-Feb-22 | 18-Feb-22 | 18-Feb-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | 5AE | 7 | | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | NAD | - | NAD | NAD | - | | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | - | - | | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | - | - | | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | N/A | - | N/A | N/A | - | | | | | A-T-045 |

Envirolab Job Number: 22/02473

Client Project Name: Victoria North HIF infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02473/2 | 22/02473/3 | 22/02473/7 | 22/02473/15 | 22/02473/16 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH304.ES02 | 326R.BH304.ES03 | 326R.BH304.ES07 | 326R.BH304.ES15 | 326R.BH304.ES16 | | | | | |
| Client Sample ID | BH304 | BH304 | BH304 | BH304 | BH304 | | | | | |
| Depth to Top | 0.50 | 1.00 | 5.00 | 13.00 | 14.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 16-Feb-22 | 16-Feb-22 | 18-Feb-22 | 18-Feb-22 | 18-Feb-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | 5AE | 7 | | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | 0.10 | - | 1.23 | 0.01 | - | | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | 0.02 | - | 0.03 | <0.01 | - | | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | 0.23 | - | 1.35 | 0.04 | - | | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | 1.14 | - | 1.95 | 0.07 | - | | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | 1.05 | - | 1.31 | 0.10 | - | | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | 1.26 | - | 1.56 | 0.10 | - | | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | 0.40 | - | 0.44 | 0.07 | - | | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | 0.55 | - | 0.59 | <0.07 | - | | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | 1.16 | - | 1.97 | 0.09 | - | | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | 0.13 | - | 0.14 | <0.04 | - | | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | 1.85 | - | 5.41 | 0.17 | - | | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | 0.08 | - | 0.81 | 0.01 | - | | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | 0.49 | - | 0.53 | 0.07 | - | | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | 0.36 | - | 2.03 | <0.03 | - | | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | 1.01 | - | 7.43 | 0.15 | - | | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | 1.80 | - | 5.02 | 0.15 | - | | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | 11.6 | - | 31.8 | 1.03 | - | | | mg/kg | 0.01 | A-T-019s |

Envirolab Job Number: 22/02473

Client Project Name: Victoria North HIF infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02473/2 | 22/02473/3 | 22/02473/7 | 22/02473/15 | 22/02473/16 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH304. ES02 | 326R.BH304. ES03 | 326R.BH304. ES07 | 326R.BH304. ES15 | 326R.BH304. ES16 | | | | | |
| Client Sample ID | BH304 | BH304 | BH304 | BH304 | BH304 | | | | | |
| Depth to Top | 0.50 | 1.00 | 5.00 | 13.00 | 14.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 16-Feb-22 | 16-Feb-22 | 18-Feb-22 | 18-Feb-22 | 18-Feb-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | 5AE | 7 | | | | | |
| **Speciated PCB-WHO12** | | | | | | | | | | |
| PCB BZ 81$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 105$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 114$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 118$_{A}^{M\#}$ | <0.007 | - | - | - | - | | | mg/kg | 0.007 | A-T-004s |
| PCB BZ 123$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 126$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 156$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 157$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 167$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 169$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 189$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 77$_{A}$ | <0.005 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |
| Total Speciated PCB-WHO12$_{A}$ | <0.007 | - | - | - | - | | | mg/kg | 0.005 | A-T-004s |

**Envirolab Job Number: 22/02473**

**Client Project Name: Victoria North HIF infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02473/2 | 22/02473/3 | 22/02473/7 | 22/02473/15 | 22/02473/16 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH304. ES02 | 326R.BH304. ES03 | 326R.BH304. ES07 | 326R.BH304. ES15 | 326R.BH304. ES16 | | | | | |
| Client Sample ID | BH304 | BH304 | BH304 | BH304 | BH304 | | | | | |
| Depth to Top | 0.50 | 1.00 | 5.00 | 13.00 | 14.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 16-Feb-22 | 16-Feb-22 | 18-Feb-22 | 18-Feb-22 | 18-Feb-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Solid | | | | | |
| Sample Matrix Code | 4A | 4A | 5A | 5AE | 7 | | | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | <0.05 | - | <0.05 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | <0.05 | - | <0.05 | 0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | 10 | - | <1 | 7 | - | | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | 4 | - | <1 | 5 | - | | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | 7 | - | <1 | 11 | - | | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | 8 | - | <1 | 14 | - | | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | 25 | - | 4 | 31 | - | | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | 2 | - | 3 | 5 | - | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | 55 | - | 8 | 74 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | <0.05 | - | <0.05 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | <0.05 | - | <0.05 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | 6 | - | <1 | 5 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | 9 | - | <1 | 32 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | 27 | - | 1 | 26 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | 32 | - | 2 | 39 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | 44 | - | 4 | 87 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | 2 | - | 2 | 2 | - | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | 120 | - | 10 | 192 | - | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | 175 | - | 18 | 266 | - | | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | <0.05 | - | <0.05 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | <0.05 | - | <0.05 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | <0.05 | - | <0.05 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | <0.05 | - | <0.05 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | <0.05 | - | <0.05 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | <0.05 | - | <0.05 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project No:** 22/02473

**Date Received:** 15/03/2022 (am)

**Project:** Victoria North HIF infrastructure & Enabling Works

**Cool Box Temperatures (°C):** 8.6 - 12.3

**Clients Project No:** 326R

| Lab Sample ID | 22/02473/2 | 22/02473/3 | 22/02473/7 | 22/02473/15 | 22/02473/16 |
|---|---|---|---|---|---|
| Client Sample No | 326R.BH304 .ES02 | 326R.BH304 .ES03 | 326R.BH304 .ES07 | 326R.BH304 .ES15 | 326R.BH304 .ES16 |
| Client Sample ID/Depth | BH304 0.50m | BH304 1.00m | BH304 5.00m | BH304 13.00m | BH304 14.00m |
| Date Sampled | 16/02/22 | 16/02/22 | 18/02/22 | 18/02/22 | 18/02/22 |
| Deviation Code | | | | | |
| F | ✓ | ✓ | ✓ | ✓ | ✓ |

*Key*
*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/02473/2 | 22/02473/3 | 22/02473/7 | 22/02473/15 | 22/02473/16 |
|---|---|---|---|---|---|
| Client Sample No | 326R.BH304 .ES02 | 326R.BH304 .ES03 | 326R.BH304 .ES07 | 326R.BH304 .ES15 | 326R.BH304 .ES16 |
| Client Sample ID/Depth | BH304 0.50m | BH304 1.00m | BH304 5.00m | BH304 13.00m | BH304 14.00m |
| Date Sampled | 16/02/22 | 16/02/22 | 18/02/22 | 18/02/22 | 18/02/22 |
| Cyanide (total) | ✓ | | ✓ | ✓ | |
| Total Organic Carbon | ✓ | ✓ | ✓ | ✓ | |
| VPHCWG | ✓ | | ✓ | ✓ | |
| EPH UKCWG | ✓ | | | | |
| PAH-16MS | ✓ | | ✓ | ✓ | |
| Mineral Oil (>C10-C40) | | ✓ | | | |
| PAH (total 17) | | ✓ | | | ✓ |
| BTEX (total) | | ✓ | | | ✓ |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3,

ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/02473/2 | 22/02473/3 | 22/02473/7 | 22/02473/15 | 22/02473/16 |
|---|---|---|---|---|---|
| **Client Sample No** | 326R.BH304 .ES02 | 326R.BH304 .ES03 | 326R.BH304 .ES07 | 326R.BH304 .ES15 | 326R.BH304 .ES16 |
| **Client Sample ID/Depth** | BH304 0.50m | BH304 1.00m | BH304 5.00m | BH304 13.00m | BH304 14.00m |
| **Date Sampled** | 16/02/22 | 16/02/22 | 18/02/22 | 18/02/22 | 18/02/22 |
| A-T-004s | 18/03/2022 | 18/03/2022 | | | 18/03/2022 |
| A-T-007s | | 21/03/2022 | | | 21/03/2022 |
| A-T-019s | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-022s | 22/03/2022 | 22/03/2022 | 22/03/2022 | 18/03/2022 | 18/03/2022 |
| A-T-024s | 25/03/2022 | | 25/03/2022 | 25/03/2022 | |
| A-T-025w | | 28/03/2022 | | | 28/03/2022 |
| A-T-026w | | 28/03/2022 | | | 28/03/2022 |
| A-T-027s | 29/03/2022 | | 29/03/2022 | 29/03/2022 | |
| A-T-031s | 25/03/2022 | | 25/03/2022 | 25/03/2022 | |
| A-T-031w | | 28/03/2022 | | | 28/03/2022 |
| A-T-032s | 29/03/2022 | 29/03/2022 | 29/03/2022 | 29/03/2022 | 29/03/2022 |
| A-T-032w | | 28/03/2022 | | | 28/03/2022 |
| A-T-037w | | 28/03/2022 | | | 28/03/2022 |
| A-T-042sTCN | 18/03/2022 | | 18/03/2022 | 29/03/2022 | |
| A-T-044 | 24/03/2022 | 24/03/2022 | 24/03/2022 | 24/03/2022 | 24/03/2022 |
| A-T-045 | 21/03/2022 | | 21/03/2022 | 21/03/2022 | |
| A-T-050s | 21/03/2022 | | 21/03/2022 | 21/03/2022 | |
| A-T-050w | | 28/03/2022 | | | 28/03/2022 |
| A-T-055s | 22/03/2022 | | 22/03/2022 | 18/03/2022 | |
| Calc-no stones | | 28/03/2022 | | | 28/03/2022 |
| Probe (w) | | 28/03/2022 | | | 28/03/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | | | |
|---|---|---|---|
| Envirolab Job Number: | 22/02473 | | |
| Issue Number: | 1 | Date: | 30-Mar-22 |
| Client: | BAM Ritchies Warrington<br>Unit 5<br>Taurus Park<br>Europa Boulevard<br>Warrington<br>UK, WA5 7ZT | | |
| Project Manager: | Mailing list 1/Mailing list 2 | | |
| Project Name: | Victoria North HIF infrastructure & Enabling Works | | |
| Project Ref: | 326R | | |
| Order No: | RIT 262 915 759 | | |
| Date Samples Received: | 10-Mar-22 | | |
| Date Instructions Received: | 15-Mar-22 | | |
| Date Analysis Completed: | 29-Mar-22 | | |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

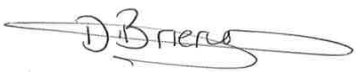
IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Danielle Brierley
Deputy Client Services Supervisor

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02473/3 | | | | |
| Client Sample Number | | | | 326R.BH304.ES03 | | | | |
| Client Sample ID | | | | BH304 | | | | |
| Depth to Top | | | | 1 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 16/02/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **13.4** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **1.82** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **14** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.05** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.019 | **0.190** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.007 | **0.070** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.005 | **0.050** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.002 | **0.020** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.005 | **0.050** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | <0.001 | **<0.01** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.005 | **0.050** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 3 | **29** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 1.0 | **10.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 22 | **216** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 66 | **660** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.7 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 132 | | | | |
| Mass Sample (kg) | | | | 0.208 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 84.1 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/02473/16 | | | | |
| Client Sample Number | | | | 326R.BH304.ES16 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH304 | | | | |
| Depth to Top | | | | 14 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 18/02/2022 | | | | |
| Sample Type | | | | Solid | | | | |
| Sample Matrix Code | | | | 7 | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **1.23** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **<0.08** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **<10** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.023 | **0.230** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.007 | **0.070** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.003 | **0.030** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.002 | **0.020** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.005 | **0.050** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.001 | **0.010** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.014 | **0.140** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 9 | **86** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.7 | **7.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 19 | **192** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 52 | **520** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.5 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 104 | | | | |
| Mass Sample (kg) | | | | 0.202 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 86.7 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/02481
**Issue Number:** 1 **Date:** 31 March, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 16/03/22
**Date Instructions Received:** 16/03/22
**Date Analysis Completed:** 31/03/22

**Approved by:**



Sophie France
Client Service Manager

UKAS TESTING
1247

**Envirolab Job Number: 22/02481**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| pH (w)$_{A}^{\#}$ | 7.42 | 7.44 | 7.06 | | | | | pH | 0.01 | A-T-031w |
| Hardness Total$_{A}^{\#}$ | 225 | 220 | 197 | | | | | mg/l CaCO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_{A}^{\#}$ | 0.39 | 0.17 | 0.29 | | | | | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_{A}^{\#}$ | 36 | 27 | 33 | | | | | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | | | | | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | | | | | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | | | | | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_{A}$ | 0.2 | 0.2 | 0.2 | | | | | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_{A}$ | <0.01 | <0.01 | <0.01 | | | | | mg/l | 0.01 | A-T-050w |
| DOC (w)$_{A}^{\#}$ | 9.7 | 7.2 | 7.7 | | | | | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_{A}$ | <1 | <1 | 1 | | | | | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_{A}^{\#}$ | 3 | 3 | 3 | | | | | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_{A}^{\#}$ | <0.2 | <0.2 | <0.2 | | | | | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_{A}^{\#}$ | 71 | 69 | 62 | | | | | mg/l | 1 | A-T-049w |
| Copper (dissolved)$_{A}^{\#}$ | 8 | 7 | 11 | | | | | µg/l | 1 | A-T-025w |
| Chromium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Chromium (hexavalent) (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/l | 0.01 | A-T-040w |
| Lead (dissolved)$_{A}^{\#}$ | 2 | <1 | 10 | | | | | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_{A}^{\#}$ | 97 | 82 | 103 | | | | | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_{A}^{\#}$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_{A}^{\#}$ | 4 | 4 | 4 | | | | | µg/l | 1 | A-T-025w |
| Selenium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_{A}^{\#}$ | 52 | 47 | 82 | | | | | µg/l | 1 | A-T-025w |

**Envirolab Job Number: 22/02481**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **Acid Herbicides Suite 3+ (w)** | | | | | | | | | | |
| 2,3,6-TBA (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-D (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DB (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-T (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex) (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 4-CPA (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Benazolin (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bentazone (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bromacil (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bromoxynil (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Clopyralid (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Dicamba (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Diclofop (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop-isopropyl (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Fluroxypyr (w)$_A$ | 0.09 | 0.09 | 0.09 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Ioxynil (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPA (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPB (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPP; (Mecoprop) (w)$_A$ | 0.58 | 0.63 | 0.62 | | | | | µg/l | 0.02 | Subcon RPS MH |
| PCP; (Pentachlorophenol) (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Picloram (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Triclopyr (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/02481**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **Carb+Urea(w)HerbsSuite1** | | | | | | | | | | |
| Carbetamide (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chlorbufam (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chloroxuron (w) $_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Chlorpropham (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chlortoluron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Diflubenzuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Dimefuron (w) $_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Diuron (w)$_A$ | 0.13 | 0.13 | 0.15 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Ethiofencarb (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Isoproturon (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Linuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Methabenzthiazuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Metoxuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Monolinuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Monuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Pencycuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Phenmedipham (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Pirimicarb (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Propham (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine+Simazine) (w)** | | | | | | | | | | |
| Dichlobenil (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Tecnazene (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Trifluralin (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| alpha-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Hexachlorobenzene (HCB) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Simazine (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Atrazine (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| beta-Hexachlorocyclohexane (HCH) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Quintozene (PCNB) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Triallate (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| delta-Hexachlorocyclohexane (HCH) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Chlorothalonil (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Aldrin (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Triadimefon (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Telodrin (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Isodrin (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Pendimethalin (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor epoxide (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| trans-Chlordane (Gamma) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDE (2,4) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan I (Alpha) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| cis-Chlordane (Alpha) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDE (4,4) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Dieldrin (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDD (2,4) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endrin (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan II (Beta) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDD (4,4) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDT (2,4) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endrin Aldehyde (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan Sulphate (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDT (4,4) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-Methoxychlor (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Endrin Ketone (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-Methoxychlor (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Permethrin I (cis) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Permethrin II (trans) (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Dichlorvos (w)A | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Mevinphos (w)A | <0.5 | <0.5 | <0.5 | | | | | µg/l | 0.5 | A-T-056w |

**Envirolab Job Number: 22/02481**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| Demeton-S (w)$_A$ | <0.5 | <0.5 | <0.5 | | | | | µg/l | 0.5 | A-T-056w |
| Phorate (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Dimethoate (w)$_A$ | <0.5 | <0.5 | <0.5 | | | | | µg/l | 0.5 | A-T-056w |
| Demeton-O (w)$_A$ | <0.5 | <0.5 | <0.5 | | | | | µg/l | 0.5 | A-T-056w |
| Propetamphos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Diazinon (Dimpylate) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Disulfoton (w)$_A$ | <0.5 | <0.5 | <0.5 | | | | | µg/l | 0.5 | A-T-056w |
| Chlorpyrifos-methyl (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Methyl Parathion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Pirimiphos-methyl (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Fenitrothion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Malathion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Chlorpyrifos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Fenthion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Parathion (Ethyl Parathion) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Trichloronate (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Chlorfenvinphos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Fensulphothion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Prothiofos (Tokuthion) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Ethion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Triazophos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Carbophenothion (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Phosalone (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-methyl (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-ethyl (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| Coumaphos (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |
| gamma-Hexachlorocyclohexane (HCH / Lindane) (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-056w |

**Envirolab Job Number: 22/02481**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| ONP (Triazine Herbicides x11) (w) | | | | | | | | | | |
| Ametryne (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Atraton (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Atrazine (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Cyanazine (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Prometon (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Prometryn (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Propazine (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Simazine (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Simetryn (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Terbuthylazine (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Terbutryn (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/02481**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_A^{\#}$ | 0.02 | 0.02 | 0.02 | | | | | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_A^{\#}$ | 0.02 | 0.01 | 0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_A^{\#}$ | <0.01 | <0.01 | 0.01 | | | | | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_A^{\#}$ | 0.04 | 0.03 | 0.04 | | | | | µg/l | 0.01 | A-T-019w |
| | | | | | | | | | | |
| **Pyrethroids (x6) (w)** | | | | | | | | | | |
| Cyfluthrin (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Cyhalothrin-lambda (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Cypermethrin (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Deltamethrin (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Fenvalerate (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Permethrin (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/l | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/02481**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **Speciated PCB-WHO12 (w)** | | | | | | | | | | |
| PCB BZ 81 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 105 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 114 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 118 (w)$_A$$^{\#}$ | <0.002 | <0.002 | <0.002 | | | | | µg/l | 0.002 | A-T-004w |
| PCB BZ 123 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 126 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 156 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 157 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 167 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 169 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 189 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 77 (w)$_A$ | <0.001 | <0.001 | <0.001 | | | | | µg/l | 0.001 | A-T-004w |
| Total Speciated PCB-WHO12 (w)$_A$ | <0.002 | <0.002 | <0.002 | | | | | µg/l | 0.001 | A-T-004w |

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| SVOC (excluding PAH-16) (w) | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol (w)$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Hexachlorobenzene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Pentachlorophenol (SVOC)$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Phenol$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |

Envirolab Job Number: 22/02481

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| Nitrobenzene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Isophorone$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |
| Perylene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-052w |

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| VOC (w) | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Chloromethane$_{A}$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromomethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Chloroethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Dichloromethane$_{A}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromochloromethane$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-006w |
| Chloroform$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_{A}^{\#}$ | <2 | <2 | <2 | | | | | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Benzene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Dibromomethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_{A}^{\#}$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-006w |
| Trichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Toluene$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_{A}^{\#}$ | <3 | <3 | <3 | | | | | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/02481**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| Tetrachloroethene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1,1,2-Tetrachloroethane$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Chlorobenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Ethylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| m & p Xylene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromoform$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Styrene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| o-Xylene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromobenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| n-propylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_A^\#$ | <2 | <2 | <2 | | | | | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| n-butylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_A^\#$ | <2 | <2 | <2 | | | | | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_A^\#$ | <3 | <3 | <3 | | | | | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_A^\#$ | <3 | <3 | <3 | | | | | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/02481**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Mar-22 | 11-Mar-22 | 11-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| TPH UKCWG (w) with Clean Up *C1 | | | | | | | | | | |
| Ali >C5-C6 $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Ali >C6-C8 $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Ali >C8-C10 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Ali >C10-C12 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Ali >C12-C16 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Ali >C16-C21 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Ali >C21-C35 $(w)_A^{\#}$ | <5 | 43 | 18 | | | | | µg/l | 5 | A-T-055w |
| Ali >C35-C44 $(w)_A$ | <5 | 17 | <5 | | | | | µg/l | 5 | A-T-055w |
| Total Aliphatics $(w)_A$ | <5 | 60 | 18 | | | | | µg/l | 5 | A-T-055w |
| Aro >C5-C7 $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Aro >C7-C8 $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Aro >C8-C10 $(w)_A$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Aro >C10-C12 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Aro >C12-C16 $(w)_A^{\#}$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Aro >C16-C21 $(w)_A^{\#}$ | 5 | 9 | 6 | | | | | µg/l | 5 | A-T-055w |
| Aro >C21-C35 $(w)_A$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-055w |
| Aro >C35-C44 $(w)_A$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-055w |
| Total Aromatics $(w)_A$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) $(w)_A$ | <10 | 69 | 24 | | | | | µg/l | 10 | A-T-055w |
| BTEX - Benzene $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - Toluene $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - o Xylene $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| MTBE $(w)_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/02481

**Date Received:** 16/03/2022 (am)

**Cool Box Temperatures (°C):** 8.8, 9.0

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 |
|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 |
| Client Sample ID/Depth | SWS01 | SWS02 | SWS03 |
| Date Sampled | 11/03/22 | 11/03/22 | 11/03/22 |
| Deviation Code | | | |
| F | ✓ | ✓ | ✓ |

*Key*
*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 |
|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 |
| Client Sample ID/Depth | SWS01 | SWS02 | SWS03 |
| Date Sampled | 11/03/22 | 11/03/22 | 11/03/22 |
| Pyrethroids (x6) (w) | ✓ | ✓ | ✓ |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/02481/1 | 22/02481/2 | 22/02481/3 |
|---|---|---|---|
| Client Sample No | 326R.SWS01.EW.02 | 326R.SWS02.EW02 | 326R.SWS03.EW02 |
| Client Sample ID/Depth | SWS01 | SWS02 | SWS03 |
| Date Sampled | 11/03/22 | 11/03/22 | 11/03/22 |
| A-T-004w | 28/03/2022 | 28/03/2022 | 28/03/2022 |
| A-T-006w | 23/03/2022 | 23/03/2022 | 23/03/2022 |
| A-T-019w | 23/03/2022 | 23/03/2022 | 23/03/2022 |
| A-T-022w | 24/03/2022 | 24/03/2022 | 24/03/2022 |
| A-T-025w | 24/03/2022 | 24/03/2022 | 24/03/2022 |
| A-T-026w | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-031w | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-032w | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-033w | 22/03/2022 | 22/03/2022 | 22/03/2022 |
| A-T-040w | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-041w | 22/03/2022 | 22/03/2022 | 22/03/2022 |
| A-T-042wCCN | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-042wFCN | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-042wTCN | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-049w | 31/03/2022 | 31/03/2022 | 31/03/2022 |
| A-T-050w | 21/03/2022 | 21/03/2022 | 21/03/2022 |
| A-T-052w | 25/03/2022 | 25/03/2022 | 25/03/2022 |
| A-T-055w | 25/03/2022 | 25/03/2022 | 25/03/2022 |
| A-T-056w | 24/03/2022 | 24/03/2022 | 24/03/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/02705
**Issue Number:** 1 **Date:** 12 April, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Mailing list 1/Mailing list 2
**Project Name:** Victoria North HIF
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 21/03/22
**Date Instructions Received:** 22/03/22
**Date Analysis Completed:** 12/04/22

**Approved by:**



Sophie France
Client Service Manager

UKAS TESTING
1247

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW03 | 326R.SWS02.EW03 | 326R.SWS03.EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| pH (w)$_{A}^{\#}$ | 7.79 | 7.84 | 7.95 | | | | | pH | 0.01 | A-T-031w |
| Hardness Total$_{A}^{\#}$ | 173 | 175 | 181 | | | | | mg/l Ca CO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_{A}^{\#}$ | 0.14 | 0.15 | 0.19 | | | | | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_{A}^{\#}$ | 69 | 70 | 71 | | | | | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | | | | | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | | | | | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | | | | | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_{A}$ | 0.3 | 0.3 | 0.3 | | | | | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_{A}$ | <0.01 | <0.01 | <0.01 | | | | | mg/l | 0.01 | A-T-050w |
| DOC (w)$_{A}^{\#}$ | 11.3 | 10.1 | 11.0 | | | | | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_{A}$ | 3 | 3 | 3 | | | | | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_{A}^{\#}$ | 3 | 3 | 3 | | | | | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_{A}^{\#}$ | <0.2 | <0.2 | <0.2 | | | | | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_{A}^{\#}$ | 54 | 54 | 56 | | | | | mg/l | 1 | A-T-049w |
| Copper (dissolved)$_{A}^{\#}$ | 7 | 6 | 7 | | | | | µg/l | 1 | A-T-025w |
| Chromium (dissolved)$_{A}^{\#}$ | 1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Chromium (hexavalent) (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/l | 0.01 | A-T-040w |
| Lead (dissolved)$_{A}^{\#}$ | 3 | 3 | 3 | | | | | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_{A}^{\#}$ | 81 | 84 | 167 | | | | | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_{A}^{\#}$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_{A}^{\#}$ | 3 | 3 | 3 | | | | | µg/l | 1 | A-T-025w |
| Selenium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_{A}^{\#}$ | 36 | 55 | 62 | | | | | µg/l | 1 | A-T-025w |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW03 | 326R.SWS02. EW03 | 326R.SWS03. EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **Acid Herbicides Suite 3+ (w)** | | | | | | | | | | |
| 2,3,6-TBA (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-D (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DB (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-T (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex) (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 4-CPA (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Benazolin (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bentazone (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bromacil (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bromoxynil (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Clopyralid (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Dicamba (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Diclofop (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop-isopropyl (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Fluroxypyr (w)$_A$ | 0.03 | 0.03 | 0.03 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Ioxynil (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPA (w)$_A$ | 0.04 | 0.05 | 0.05 | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPB (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPP; (Mecoprop) (w)$_A$ | 1.59 | 1.40 | 1.55 | | | | | µg/l | 0.02 | Subcon RPS MH |
| PCP; (Pentachlorophenol) (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Picloram (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Triclopyr (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW03 | 326R.SWS02. EW03 | 326R.SWS03. EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **Carb+Urea(w)HerbsSuite1** | | | | | | | | | | |
| Carbetamide (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chlorbufam (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chloroxuron (w) $_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Chlorpropham (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chlortoluron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Diflubenzuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Dimefuron (w) $_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Diuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Ethiofencarb (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Isoproturon (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Linuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Methabenzthiazuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Metoxuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Monolinuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Monuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Pencycuron (w)$_A$ | <0.05 | <0.05 | <0.05 | | | | | µg/l | 0.05 | Subcon RPS MH |
| Phenmedipham (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Pirimicarb (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | Subcon RPS MH |
| Propham (w)$_A$ | <0.1 | <0.1 | <0.1 | | | | | µg/l | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine+Simazine) (w)** | | | | | | | | | | |
| Dichlobenil (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Tecnazene (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Trifluralin (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| alpha-Hexachlorocyclohexane (HCH) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Hexachlorobenzene (HCB) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Simazine (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Atrazine (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| beta-Hexachlorocyclohexane (HCH) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW03 | 326R.SWS02.EW03 | 326R.SWS03.EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| Quintozene (PCNB) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Triallate (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| delta-Hexachlorocyclohexane (HCH) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Chlorothalonil (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Aldrin (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Triadimefon (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Telodrin (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Isodrin (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Pendimethalin (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor epoxide (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| trans-Chlordane (Gamma) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDE (2,4) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan I (Alpha) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| cis-Chlordane (Alpha) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDE (4,4) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Dieldrin (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDD (2,4) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Endrin (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan II (Beta) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDD (4,4) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDT (2,4) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Endrin Aldehyde (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan Sulphate (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDT (4,4) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| o,p-Methoxychlor (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Endrin Ketone (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| p,p-Methoxychlor (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Permethrin I (cis) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Permethrin II (trans) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Dichlorvos (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Mevinphos (w)$_A$ | <5.0 | <5.0 | <5.0 | | | | | µg/l | 0.5 | A-T-056w |
| Demeton-S (w)$_A$ | <5.0 | <5.0 | <5.0 | | | | | µg/l | 0.5 | A-T-056w |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW03 | 326R.SWS02.EW03 | 326R.SWS03.EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| Phorate (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Dimethoate (w)$_A$ | <5.0 | <5.0 | <5.0 | | | | | µg/l | 0.5 | A-T-056w |
| Demeton-O (w)$_A$ | <5.0 | <5.0 | <5.0 | | | | | µg/l | 0.5 | A-T-056w |
| Propetamphos (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Diazinon (Dimpylate) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Disulfoton (w)$_A$ | <5.0 | <5.0 | <5.0 | | | | | µg/l | 0.5 | A-T-056w |
| Chlorpyrifos-methyl (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Methyl Parathion (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Pirimiphos-methyl (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Fenitrothion (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Malathion (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Chlorpyrifos (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Fenthion (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Parathion (Ethyl Parathion) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Trichloronate (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Chlorfenvinphos (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Fensulphothion (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Prothiofos (Tokuthion) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Ethion (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Triazophos (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Carbophenothion (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Phosalone (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-methyl (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-ethyl (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| Coumaphos (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |
| gamma-Hexachlorocyclohexane (HCH / Lindane) (w)$_A$ | <1.0 | <1.0 | <1.0 | | | | | µg/l | 0.1 | A-T-056w |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW03 | 326R.SWS02. EW03 | 326R.SWS03. EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **ONP (Triazine Herbicides x11) (w)** | | | | | | | | | | |
| Ametryne (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Atraton (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Atrazine (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Cyanazine (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Prometon (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Prometryn (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Propazine (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Simazine (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Simetryn (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Terbuthylazine (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |
| Terbutryn (w)$_A$ | <0.02 | <0.02 | <0.02 | | | | | µg/l | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW03 | 326R.SWS02. EW03 | 326R.SWS03. EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_A^{\#}$ | <0.10 | <0.10 | <0.10 | | | | | µg/l | 0.01 | A-T-019w |
| | | | | | | | | | | |
| **Pyrethroids (x6) (w)** | | | | | | | | | | |
| Cyfluthrin (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/kg | 0.1 | Subcon RPS MH |
| Cyhalothrin-lambda (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/kg | 0.1 | Subcon RPS MH |
| Cypermethrin (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/kg | 0.1 | Subcon RPS MH |
| Deltamethrin (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/kg | 0.1 | Subcon RPS MH |
| Fenvalerate (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/kg | 0.1 | Subcon RPS MH |
| Permethrin (w)$_A$ | <0.50 | <0.50 | <0.50 | | | | | µg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW03 | 326R.SWS02. EW03 | 326R.SWS03. EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **Speciated PCB-WHO12 (w)** | | | | | | | | | | |
| PCB BZ 81 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 105 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 114 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 118 (w)$_A$$^{\#}$ | <0.020 | <0.020 | <0.020 | | | | | µg/l | 0.002 | A-T-004w |
| PCB BZ 123 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 126 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 156 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 157 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 167 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 169 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 189 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 77 (w)$_A$ | <0.010 | <0.010 | <0.010 | | | | | µg/l | 0.001 | A-T-004w |
| Total Speciated PCB-WHO12 (w)$_A$ | <0.020 | <0.020 | <0.020 | | | | | µg/l | 0.001 | A-T-004w |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW03 | 326R.SWS02. EW03 | 326R.SWS03. EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| SVOC (excluding PAH-16) (w) | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol (w)$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | <100 | <100 | <100 | | | | | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | <100 | <100 | <100 | | | | | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Hexachlorobenzene$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Pentachlorophenol (SVOC)$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Phenol$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Nitrobenzene$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW03 | 326R.SWS02.EW03 | 326R.SWS03.EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| Isophorone$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |
| Perylene$_A$ | <10 | <10 | <10 | | | | | µg/l | 1 | A-T-052w |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW03 | 326R.SWS02. EW03 | 326R.SWS03. EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **VOC (w)** | | | | | | | | | | |
| Dichlorodifluoromethane$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Chloromethane$_A$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromomethane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Chloroethane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Dichloromethane$_A$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromochloromethane$_A^\#$ | <5 | <5 | <5 | | | | | µg/l | 5 | A-T-006w |
| Chloroform$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_A^\#$ | <2 | <2 | <2 | | | | | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Benzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Dibromomethane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_A^\#$ | <10 | <10 | <10 | | | | | µg/l | 10 | A-T-006w |
| Trichloroethene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Toluene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_A^\#$ | <3 | <3 | <3 | | | | | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Tetrachloroethene$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW03 | 326R.SWS02.EW03 | 326R.SWS03.EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| 1,1,1,2-Tetrachloroethane$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Chlorobenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Ethylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| m & p Xylene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromoform$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Styrene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_A$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| o-Xylene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| Bromobenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| n-propylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_A^\#$ | <2 | <2 | <2 | | | | | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| n-butylbenzene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_A^\#$ | <2 | <2 | <2 | | | | | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_A^\#$ | <3 | <3 | <3 | | | | | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_A^\#$ | <3 | <3 | <3 | | | | | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_A^\#$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/02705**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01. EW03 | 326R.SWS02. EW03 | 326R.SWS03. EW03 | | | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 18-Mar-22 | 18-Mar-22 | 18-Mar-22 | | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | | | | | | | |
| **TPH UKCWG (w) with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6 (w)$_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Ali >C6-C8 (w)$_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Ali >C8-C10 (w)$_A^{\#}$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Ali >C10-C12 (w)$_A^{\#}$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Ali >C12-C16 (w)$_A^{\#}$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Ali >C16-C21 (w)$_A^{\#}$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Ali >C21-C35 (w)$_A^{\#}$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Ali >C35-C44 (w)$_A$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Total Aliphatics (w)$_A$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Aro >C5-C7 (w)$_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Aro >C7-C8 (w)$_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| Aro >C8-C10 (w)$_A$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Aro >C10-C12 (w)$_A^{\#}$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Aro >C12-C16 (w)$_A^{\#}$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Aro >C16-C21 (w)$_A^{\#}$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Aro >C21-C35 (w)$_A$ | <100 | <100 | <100 | | | | | µg/l | 10 | A-T-055w |
| Aro >C35-C44 (w)$_A$ | <50 | <50 | <50 | | | | | µg/l | 5 | A-T-055w |
| Total Aromatics (w)$_A$ | <100 | <100 | <100 | | | | | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) (w)$_A$ | <100 | <100 | <100 | | | | | µg/l | 10 | A-T-055w |
| BTEX - Benzene (w)$_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - Toluene (w)$_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene (w)$_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene (w)$_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| BTEX - o Xylene (w)$_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |
| MTBE (w)$_A^{\#}$ | <1 | <1 | <1 | | | | | µg/l | 1 | A-T-022w |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF

**Clients Project No:** 326R

**Project No:** 22/02705

**Date Received:** 22/03/2022 (am)

**Cool Box Temperatures (°C):** 10.4

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/02705/1 | 22/02705/2 | 22/02705/3 |
|---|---|---|---|
| Client Sample No | 326R.SWS01.EW03 | 326R.SWS02.EW03 | 326R.SWS03.EW03 |
| Client Sample ID/Depth | SWS01 | SWS02 | SWS03 |
| Date Sampled | 18/03/22 | 18/03/22 | 18/03/22 |
| A-T-004w | 30/03/2022 | 30/03/2022 | 30/03/2022 |
| A-T-006w | 29/03/2022 | 29/03/2022 | 29/03/2022 |
| A-T-019w | 31/03/2022 | 31/03/2022 | 31/03/2022 |
| A-T-022w | 31/03/2022 | 31/03/2022 | 31/03/2022 |
| A-T-025w | 01/04/2022 | 01/04/2022 | 01/04/2022 |
| A-T-026w | 28/03/2022 | 28/03/2022 | 28/03/2022 |
| A-T-031w | 28/03/2022 | 28/03/2022 | 28/03/2022 |
| A-T-032w | 28/03/2022 | 28/03/2022 | 28/03/2022 |
| A-T-033w | 28/03/2022 | 28/03/2022 | 28/03/2022 |
| A-T-040w | 28/03/2022 | 28/03/2022 | 28/03/2022 |
| A-T-041w | 31/03/2022 | 31/03/2022 | 31/03/2022 |
| A-T-042wCCN | 28/03/2022 | 28/03/2022 | 28/03/2022 |
| A-T-042wFCN | 28/03/2022 | 28/03/2022 | 28/03/2022 |
| A-T-042wTCN | 28/03/2022 | 28/03/2022 | 28/03/2022 |
| A-T-049w | 04/04/2022 | 04/04/2022 | 04/04/2022 |
| A-T-050w | 28/03/2022 | 28/03/2022 | 28/03/2022 |
| A-T-052w | 01/04/2022 | 01/04/2022 | 01/04/2022 |
| A-T-055w | 31/03/2022 | 31/03/2022 | 31/03/2022 |
| A-T-056w | 04/04/2022 | 04/04/2022 | 04/04/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/02780
**Issue Number:** 1 **Date:** 07 April, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Mailing list 1/Mailing list 2
**Project Name:** Victoria North HIF
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 21/03/22
**Date Instructions Received:** 23/03/22
**Date Analysis Completed:** 07/04/22

**Approved by:**



Sophie France
Client Service Manager

**Envirolab Job Number: 22/02780**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| % Stones >10mm$_A$ | 48.6 | 2.3 | <0.1 | <0.1 | 48.5 | | | % w/w | 0.1 | A-T-044 |
| pH$_D$$^{M\#}$ | - | - | 6.80 | 7.90 | 7.14 | | | pH | 0.01 | A-T-031s |
| Cyanide (total)$_A$$^{M\#}$ | - | - | <1 | <1 | <1 | | | mg/kg | 1 | A-T-042sTCN |
| Phenols - Total by HPLC$_A$ | - | - | <0.2 | <0.2 | <0.2 | | | mg/kg | 0.2 | A-T-050s |
| Total Organic Carbon$_D$$^{M\#}$ | - | 0.66 | 0.23 | NAD | 9.87 | | | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | - | - | <5 | 21 | 21 | | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$$^{M\#}$ | - | - | <1 | 58 | 18 | | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | - | - | <0.5 | 1.2 | <0.5 | | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | - | - | <1.0 | <1.0 | <1.0 | | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$$^{M\#}$ | - | - | <0.5 | 7.2 | 3.4 | | | mg/kg | 0.5 | A-T-024s |
| Copper$_D$$^{M\#}$ | - | - | 5 | 275 | 129 | | | mg/kg | 1 | A-T-024s |
| Chromium$_D$$^{M\#}$ | - | - | 9 | 42 | 23 | | | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | - | - | <1 | - | - | | | mg/kg | 1 | A-T-040s |
| Lead$_D$$^{M\#}$ | - | - | 4 | 477 | 191 | | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | - | - | <0.17 | 0.32 | <0.17 | | | mg/kg | 0.17 | A-T-024s |
| Nickel$_D$$^{M\#}$ | - | - | 4 | 69 | 28 | | | mg/kg | 1 | A-T-024s |
| Selenium$_D$$^{M\#}$ | - | - | <1 | <1 | <1 | | | mg/kg | 1 | A-T-024s |
| Vanadium$_D$$^{M\#}$ | - | - | 5 | 71 | 26 | | | mg/kg | 1 | A-T-024s |
| Zinc$_D$$^{M\#}$ | - | - | 12 | 684 | 322 | | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/02780**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| **Acid Herbicides (Suite 3+)** | | | | | | | | | | |
| 2,3,6-TBA$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-D$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DB$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-T$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex)$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 4-CPA$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Benazolin$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Bentazone$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Bromacil$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Bromoxynil$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Clopyralid$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Dicamba$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Diclofop$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop-isopropyl$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Fluroxypyr$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Ioxynil$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPA$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPB$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPP; (Mecoprop)$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| PCP; (Pentachlorophenol)$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Picloram$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Triclopyr$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/02780**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | - | - | NAD | Chrysotile | NAD | | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | - | - | | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | Loose Insulation | - | | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | - | - | N/A | N/A | N/A | | | | | A-T-045 |
| | | | | | | | | | | |
| **Asbestos in Soil Quantification % (Hand Picking & Weighing)** | | | | | | | | | | |
| Asbestos in soil % composition (hand picking and weighing)$_{D}$ | - | - | - | 0.011 | - | | | % w/w | 0.001 | A-T-054 |

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| **Carb+Urea Herbs Suite1** | | | | | | | | | | |
| Carbetamide$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorbufam$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Chloroxuron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorpropham$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlortoluron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Diflubenzuron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Dimefuron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Diuron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Ethiofencarb$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Isoproturon$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Linuron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Methabenzthiazuron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Metoxuron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Monolinuron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Monuron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Pencycuron$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Phenmedipham$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Pirimicarb$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Propham$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine and Simazine)** | | | | | | | | | | |
| Dichlobenil$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Tecnazene$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Trifluralin$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| alpha-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Hexachlorobenzene (HCB)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Simazine$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Atrazine$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| beta-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| Quintozene (PCNB)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Chlorothalonil$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| delta-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Triallate$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Heptachlor$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Aldrin$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Triadimefon$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Telodrin$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Isodrin$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Pendimethalin$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Heptachlor epoxide$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| trans-Chlordane (Gamma)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDE (2,4)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan I (Alpha)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| cis-Chlordane (Alpha)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDE (4,4)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Dieldrin$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDD (2,4)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Endrin$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan II (Beta)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDD (4,4)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDT (2,4)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Endrin Aldehyde$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Endrin Ketone$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan Sulphate$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDT (4,4)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| o,p-Methoxychlor$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| p,p-Methoxychlor$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Permethrin I (cis)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Permethrin II (trans)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Dichlorvos$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Mevinphos$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Demeton-S$_A$ | <0.50 | - | - | - | - | | | mg/kg | 0.5 | A-T-056 |

**Envirolab Job Number: 22/02780**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| Demeton-O$_A$ | <0.50 | - | - | - | - | | | mg/kg | 0.5 | A-T-056 |
| Phorate$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Dimethoate$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Propetamphos$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Diazinon (Dimpylate)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Disulfoton$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | A-T-056 |
| Chlorpyrifos-methyl$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Parathion (Ethyl Parathion)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Methyl Parathion$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Pirimiphos-methyl$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Fenitrothion$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Fensulphothion$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Fenthion$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Malathion$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Chlorfenvinphos$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Chlorpyrifos$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Trichloronate$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Prothiofos (Tokuthion)$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Ethion$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Triazophos$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Carbophenothion$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Phosalone$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Azinphos-methyl$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Azinphos-ethyl$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |
| Coumaphos$_A$ | <0.01 | - | - | - | - | | | mg/kg | 0.01 | A-T-056 |

**Envirolab Job Number: 22/02780**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| ONP (Triazines Herbicides x11) | | | | | | | | | | |
| Ametryne$_A$ | <0.20 | - | - | - | - | | | mg/kg | 0.2 | Subcon RPS MH |
| Atraton$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Atrazine$_A$ | <0.02 | - | - | - | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Cyanazine$_A$ | <0.02 | - | - | - | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Prometon$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Prometryn$_A$ | <0.02 | - | - | - | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Propazine$_A$ | <0.02 | - | - | - | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Simazine$_A$ | <0.02 | - | - | - | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Simetryn$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Terbuthylazine$_A$ | <0.02 | - | - | - | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Terbutryn$_A$ | <0.02 | - | - | - | - | | | mg/kg | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/02780** **Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | - | - | 1.92 | 0.20 | 0.04 | | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | - | - | 0.50 | 0.18 | 0.05 | | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | - | - | 1.00 | 1.04 | 0.26 | | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | - | - | 1.33 | 2.26 | 0.47 | | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | - | - | 1.72 | 2.16 | 0.48 | | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | - | - | 1.00 | 2.64 | 0.63 | | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | - | - | 0.86 | 1.04 | 0.26 | | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | - | - | 0.33 | 1.02 | 0.22 | | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | - | - | 1.35 | 2.51 | 0.58 | | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | - | - | 0.11 | 0.24 | 0.05 | | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | - | - | 2.10 | 4.48 | 0.99 | | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | - | - | 0.62 | 0.17 | 0.02 | | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | - | - | 0.56 | 1.16 | 0.28 | | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | - | - | 2.27 | 0.16 | 0.05 | | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | - | - | 1.50 | 2.60 | 0.45 | | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | - | - | 5.12 | 4.16 | 0.93 | | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | - | - | 22.3 | 26 | 5.76 | | | mg/kg | 0.01 | A-T-019s |
| | | | | | | | | | | |
| **Pyrethroids (x6)** | | | | | | | | | | |
| Cyfluthrin$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Cyhalothrin$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Cypermethrin$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Deltamethrin$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Fenvalerate$_A$ | <0.50 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Permethrin$_A$ | <0.10 | - | - | - | - | | | mg/kg | 0.1 | Subcon RPS MH |

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| SVOC | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Hexachlorobenzene$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | - | - | <500 | - | - | | | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | - | - | 1040 | - | - | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Pentachlorophenol (SVOC)$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | - | - | <500 | - | - | | | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Isophorone$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |

**Envirolab Job Number: 22/02780**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| Hexachloroethane$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | - | - | <100 | - | - | | | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | - | - | 512 | - | - | | | µg/kg | 100 | A-T-052s |

**Envirolab Job Number: 22/02780**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| **VOC** | | | | | | | | | | |
| Dichlorodifluoromethane$_A$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Chloromethane$_A$ | - | - | <10 | - | - | | | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Bromomethane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Chloroethane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Dichloromethane$_A$ | - | - | <5 | - | - | | | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_A^\#$ | - | - | <5 | - | - | | | µg/kg | 5 | A-T-006s |
| Chloroform$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_A^\#$ | - | - | <2 | - | - | | | µg/kg | 2 | A-T-006s |
| Benzene$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Trichloroethene$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Dibromomethane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_A^\#$ | - | - | <10 | - | - | | | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Toluene$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_A^\#$ | - | - | <3 | - | - | | | µg/kg | 3 | A-T-006s |
| 1,2-Dibromoethane$_A^\#$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |

**Envirolab Job Number: 22/02780**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| Chlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_{A}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| m & p Xylene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| o-Xylene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Styrene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Bromoform$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_{A}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| Bromobenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_{A}^{\#}$ | - | - | <2 | - | - | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_{A}^{\#}$ | - | - | 2 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_{A}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_{A}$ | - | - | <2 | - | - | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_{A}$ | - | - | <3 | - | - | | | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_{A}^{\#}$ | - | - | <1 | - | - | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_{A}$ | - | - | <3 | - | - | | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/02780**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 | | | | | |
| Client Sample ID | BH320 | BH320 | BH320 | OP01 | OP03 | | | | | |
| Depth to Top | 0.50 | 4.35 | 6.00 | 0.20 | 0.20 | | | | | |
| Depth To Bottom | | 4.50 | 6.40 | | | | | | | |
| Date Sampled | 10-Feb-22 | 15-Mar-22 | 15-Mar-22 | 10-Mar-22 | 10-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 5A | 5A | 4AE | 4AE | | | | | |
| TPH UKCWG with Clean Up *C1 | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | - | - | <0.01 | <0.01 | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | - | - | <0.01 | <0.01 | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | - | - | 1 | 3 | <1 | | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | - | - | 5 | 2 | <1 | | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | - | - | 23 | 3 | 1 | | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | - | - | 17 | 9 | 4 | | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | - | - | 2 | 236 | 85 | | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | - | - | 5 | 47 | 15 | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | - | - | 54 | 301 | 106 | | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | - | - | <0.01 | <0.01 | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | - | - | <0.01 | <0.01 | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | - | - | 5 | 4 | 1 | | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | - | - | 24 | 5 | 1 | | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | - | - | 79 | 17 | 5 | | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | - | - | 88 | 50 | 18 | | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | - | - | 94 | 149 | 42 | | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | - | - | 5 | 32 | 11 | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | - | - | 295 | 256 | 77 | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | - | - | 348 | 557 | 183 | | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | - | - | <0.01 | <0.01 | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | - | - | <0.01 | <0.01 | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | - | - | <0.01 | <0.01 | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | - | - | <0.01 | <0.01 | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | - | - | <0.01 | <0.01 | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | - | - | <0.01 | <0.01 | <0.01 | | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF

**Clients Project No:** 326R

**Project No:** 22/02780

**Date Received:** 23/03/2022 (am)

**Cool Box Temperatures (°C):** 9.6

| Lab Sample ID | 22/02780/2 | 22/02780/9 | 22/02780/10 | 22/02780/12 |
|---|---|---|---|---|
| Client Sample No | 326R.BH320 .ES02 | 326R.BH320. ES09 | 326R.OP01. ES01 | 326R.OP01. ES03 |
| Client Sample ID/Depth | BH320 0.50m | BH320 6.00-6.40m | OP01 0.20m | OP03 0.20m |
| Date Sampled | 10/02/22 | 15/03/22 | 10/03/22 | 10/03/22 |
| Deviation Code | | | | |
| F | ✓ | ✓ | ✓ | ✓ |

*Key*
*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/02780/2 | 22/02780/9 | 22/02780/10 | 22/02780/12 |
|---|---|---|---|---|
| Client Sample No | 326R.BH320 .ES02 | 326R.BH320. ES09 | 326R.OP01. ES01 | 326R.OP01. ES03 |
| Client Sample ID/Depth | BH320 0.50m | BH320 6.00-6.40m | OP01 0.20m | OP03 0.20m |
| Date Sampled | 10/02/22 | 15/03/22 | 10/03/22 | 10/03/22 |
| Acid Herbicides (Suite 3+) | ✓ | | | |
| Carb+Urea Herbs Suite1 | ✓ | | | |
| Pyrethroids (x6) | ✓ | | | |
| OCP+OPP Combined Pest Suite (incl. Atrazine and Simazine) | ✓ | | | |
| VOC | | ✓ | | |
| Cyanide (total) | | | ✓ | ✓ |
| VPHCWG | | | ✓ | ✓ |
| PAH-16MS | | | ✓ | ✓ |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/02780/2 | 22/02780/7 | 22/02780/9 | 22/02780/10 | 22/02780/12 |
|---|---|---|---|---|---|
| Client Sample No | 326R.BH320.ES02 | 326R.BH320.ES07 | 326R.BH320.ES09 | 326R.OP01.ES01 | 326R.OP01.ES03 |
| Client Sample ID/Depth | BH320 0.50m | BH320 4.35-4.50m | BH320 6.00-6.40m | OP01 0.20m | OP03 0.20m |
| Date Sampled | 10/02/22 | 15/03/22 | 15/03/22 | 10/03/22 | 10/03/22 |
| A-T-004s | | 30/03/2022 | | | |
| A-T-006s | | | 31/03/2022 | | |
| A-T-007s | | 30/03/2022 | | | |
| A-T-019s | | 01/04/2022 | 01/04/2022 | 01/04/2022 | 01/04/2022 |
| A-T-022s | | 31/03/2022 | 31/03/2022 | 31/03/2022 | 31/03/2022 |
| A-T-024s | | | 06/04/2022 | 06/04/2022 | 06/04/2022 |
| A-T-025w | | 07/04/2022 | | | |
| A-T-026w | | 07/04/2022 | | | |
| A-T-027s | | | 05/04/2022 | 05/04/2022 | 05/04/2022 |
| A-T-031s | | | 05/04/2022 | 05/04/2022 | 05/04/2022 |
| A-T-031w | | 07/04/2022 | | | |
| A-T-032s | | 04/04/2022 | 04/04/2022 | 04/04/2022 | 04/04/2022 |
| A-T-032w | | 07/04/2022 | | | |
| A-T-037w | | 07/04/2022 | | | |
| A-T-040s | | | 05/04/2022 | | |
| A-T-042sTCN | | | 31/03/2022 | 31/03/2022 | 31/03/2022 |
| A-T-044 | 04/04/2022 | 04/04/2022 | 04/04/2022 | 04/04/2022 | 05/04/2022 |
| A-T-045 | | | 30/03/2022 | 30/03/2022 | 30/03/2022 |
| A-T-050s | | | 31/03/2022 | 31/03/2022 | 31/03/2022 |
| A-T-050w | | 07/04/2022 | | | |
| A-T-052s | | | 01/04/2022 | | |
| A-T-054 | | | | 31/03/2022 | |
| A-T-055s | | | 31/03/2022 | 31/03/2022 | 31/03/2022 |
| A-T-056 | 07/04/2022 | | | | |
| Calc-no stones | | 07/04/2022 | | | |
| Probe (w) | | 07/04/2022 | | | |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT
## SUPPLEMENT TO TEST REPORT 22/02996/2

**Amendments:** Request for project/sample information change

**Envirolab Job Number:** 22/02996
**Issue Number:** 3 **Date:** 31 October, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird/Daryl Charlton
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 28/03/22
**Date Instructions Received:** 29/03/22
**Date Analysis Completed:** 12/04/22

**Approved by:**



Richard Wong
Client Manager

UKAS TESTING
1247

Envirolab Job Number: 22/02996

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| pH (w)$_{A}^{\#}$ | 6.69 | | | | | | | pH | 0.01 | A-T-031w |
| Hardness Total$_{A}^{\#}$ | 752 | | | | | | | mg/l Ca CO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_{A}^{\#}$ | 28.3 | | | | | | | mg/l | 0.05 | A-T-033w |
| Chloride (w)$_{A}^{\#}$ | 33 | | | | | | | mg/l | 1 | A-T-026w |
| Cyanide (total) (w)$_{A}^{\#}$ | 0.011 | | | | | | | mg/l | 0.005 | A-T-042wTCN |
| Phenols - Total by HPLC (w)$_{A}$ | <0.01 | | | | | | | mg/l | 0.01 | A-T-050w |
| DOC - Dissolved Organic Carbon (w)$_{A}^{\#}$ | 47.2 | | | | | | | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_{A}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_{A}^{\#}$ | <0.2 | | | | | | | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_{A}^{\#}$ | 241 | | | | | | | mg/l | 1 | A-T-049w |
| Copper (dissolved)$_{A}^{\#}$ | 2 | | | | | | | µg/l | 4 | A-T-025w |
| Chromium (dissolved)$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Lead (dissolved)$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_{A}^{\#}$ | 895 | | | | | | | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_{A}^{\#}$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_{A}^{\#}$ | 3 | | | | | | | µg/l | 2 | A-T-025w |
| Selenium (dissolved)$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_{A}^{\#}$ | 25 | | | | | | | µg/l | 2 | A-T-025w |

**Envirolab Job Number: 22/02996**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **Acid Herbicides Suite 3+ (w)** | | | | | | | | | | |
| 2,3,6-TBA (w)$_A$ | <0.10 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-D (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DB (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-T (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex) (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 4-CPA (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Benazolin (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bentazone (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bromacil (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bromoxynil (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Clopyralid (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Dicamba (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Diclofop (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop-isopropyl (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Fluroxypyr (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Ioxynil (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPA (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPB (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPP; (Mecoprop) (w)$_A$ | 0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| PCP; (Pentachlorophenol) (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Picloram (w)$_A$ | <0.10 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Triclopyr (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **Carb+Urea(w)HerbsSuite1** | | | | | | | | | | |
| Carbetamide (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chlorbufam (w)$_A$ | <1.0 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chloroxuron (w) $_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Chlorpropham (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chlortoluron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Diflubenzuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Dimefuron (w) $_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Diuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Ethiofencarb (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Isoproturon (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Linuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Methabenzthiazuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Metoxuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Monolinuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Monuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Pencycuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Phenmedipham (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Pirimicarb (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Propham (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine+Simazine) (w)** | | | | | | | | | | |
| Dichlobenil (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Tecnazene (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Trifluralin (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| alpha-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Hexachlorobenzene (HCB) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Simazine (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| Atrazine (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| beta-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Quintozene (PCNB) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Triallate (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| delta-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Chlorothalonil (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Aldrin (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Triadimefon (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Telodrin (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Isodrin (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Pendimethalin (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor epoxide (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| trans-Chlordane (Gamma) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDE (2,4) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan I (Alpha) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| cis-Chlordane (Alpha) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDE (4,4) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Dieldrin (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDD (2,4) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endrin (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan II (Beta) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDD (4,4) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDT (2,4) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endrin Aldehyde (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan Sulphate (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDT (4,4) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| o,p-Methoxychlor (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endrin Ketone (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| p,p-Methoxychlor (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Permethrin I (cis) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Permethrin II (trans) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| Dichlorvos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Mevinphos (w)$_A$ | <0.5 | | | | | | | µg/l | 0.5 | A-T-056w |
| Demeton-S (w)$_A$ | <0.5 | | | | | | | µg/l | 0.5 | A-T-056w |
| Phorate (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Dimethoate (w)$_A$ | <0.5 | | | | | | | µg/l | 0.5 | A-T-056w |
| Demeton-O (w)$_A$ | <0.5 | | | | | | | µg/l | 0.5 | A-T-056w |
| Propetamphos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Diazinon (Dimpylate) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Disulfoton (w)$_A$ | <0.5 | | | | | | | µg/l | 0.5 | A-T-056w |
| Chlorpyrifos-methyl (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Methyl Parathion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Pirimiphos-methyl (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Fenitrothion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Malathion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Chlorpyrifos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Fenthion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Parathion (Ethyl Parathion) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Trichloronate (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Chlorfenvinphos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Fensulphothion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Prothiofos (Tokuthion) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Ethion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Triazophos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Carbophenothion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Phosalone (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-methyl (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-ethyl (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Coumaphos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| gamma-Hexachlorocyclohexane (HCH / Lindane) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |

**Envirolab Job Number: 22/02996**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| ONP (Triazine Herbicides x11) (w) | | | | | | | | | | |
| Ametryne (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Atraton (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Atrazine (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Cyanazine (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Prometon (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Prometryn (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Propazine (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Simazine (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Simetryn (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Terbuthylazine (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Terbutryn (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene $(w)_A^{\#}$ | 0.08 | | | | | | | µg/l | 0.01 | A-T-019w |
| Acenaphthylene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Anthracene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Chrysene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Fluoranthene $(w)_A^{\#}$ | 0.02 | | | | | | | µg/l | 0.01 | A-T-019w |
| Fluorene $(w)_A^{\#}$ | 0.03 | | | | | | | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Naphthalene $(w)_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Phenanthrene $(w)_A^{\#}$ | 0.03 | | | | | | | µg/l | 0.01 | A-T-019w |
| Pyrene $(w)_A^{\#}$ | 0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS $(w)_A^{\#}$ | 0.17 | | | | | | | µg/l | 0.01 | A-T-019w |
| | | | | | | | | | | |
| **Pyrethroids (x6) (w)** | | | | | | | | | | |
| Cyfluthrin $(w)_A$ | <0.50 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Cyhalothrin-lambda $(w)_A$ | <0.50 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Cypermethrin $(w)_A$ | <0.50 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Deltamethrin $(w)_A$ | <0.50 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Fenvalerate $(w)_A$ | <0.50 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Permethrin $(w)_A$ | <0.50 | | | | | | | µg/l | 0.1 | Subcon RPS MH |

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| SVOC (excluding PAH-16) (w) | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | <10 | | | | | | | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | <10 | | | | | | | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachlorobenzene SVOC$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Pentachlorophenol SVOC$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Phenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |

Envirolab Job Number: 22/02996

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| Nitrobenzene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Isophorone$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Perylene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **VOC (w)** | | | | | | | | | | |
| Dichlorodifluoromethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chloromethane$_A$ | <10 | | | | | | | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromomethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dichloromethane$_A$ | <5 | | | | | | | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromochloromethane$_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-006w |
| Chloroform$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_A^{\#}$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Benzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dibromomethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_A^{\#}$ | <10 | | | | | | | µg/l | 10 | A-T-006w |
| Trichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Toluene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_A^{\#}$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/02996**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| Tetrachloroethene$_{A}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,1,2-Tetrachloroethane$_{A}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chlorobenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Ethylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| m & p Xylene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromoform$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Styrene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_{A}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| o-Xylene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromobenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| n-propylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_{A}^{\#}$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| n-butylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_{A}^{\#}$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_{A}^{\#}$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_{A}^{\#}$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/02996**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/02996/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.Orange Lagoon.EW01 | | | | | | | | | |
| Client Sample ID | Orange Lagoon | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **TPH UKCWG (w) with Clean Up** | | | | | | | | | | |
| Ali >C5-C6 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Ali >C6-C8 $(w)_A^{\#}$ | 2 | | | | | | | µg/l | 1 | A-T-022w |
| Ali >C8-C10 $(w)_A^{\#}$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C10-C12 $(w)_A^{\#}$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C12-C16 $(w)_A^{\#}$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C16-C21 $(w)_A^{\#}$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C21-C35 $(w)_A^{\#}$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C35-C44 $(w)_A$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Total Aliphatics $(w)_A$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C5-C7 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Aro >C7-C8 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Aro >C8-C10 $(w)_A$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C10-C12 $(w)_A^{\#}$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C12-C16 $(w)_A^{\#}$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C16-C21 $(w)_A^{\#}$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C21-C35 $(w)_A$ | <20 | | | | | | | µg/l | 10 | A-T-055w |
| Aro >C35-C44 $(w)_A$ | <10 | | | | | | | µg/l | 5 | A-T-055w |
| Total Aromatics $(w)_A$ | <20 | | | | | | | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) $(w)_A$ | <20 | | | | | | | µg/l | 10 | A-T-055w |
| BTEX - Benzene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - Toluene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - o Xylene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| MTBE $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

**Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

**Key:**

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/02996

**Date Received:** 29/03/2022 (am)

**Cool Box Temperatures (°C):** 10.7

| **Lab Sample ID** | 22/02996/1 |
|---|---|
| **Client Sample No** | 326R.Orange Lagoon.EW01 |
| **Client Sample ID/Depth** | Orange Lagoon |
| **Date Sampled** | 25/03/22 |
| **Deviation Code** | |
| D8 (Pesticides) | ✓ |

*Key*
*D8 (Pesticides)* *Glass container not provided for Pesticides*

*Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.*

# Envirolab Analysis Dates

| | |
|---|---|
| **Lab Sample ID** | 22/02996/1 |
| **Client Sample No** | 326R.Orange Lagoon.EW01 |
| **Client Sample ID/Depth** | Orange Lagoon |
| **Date Sampled** | 25/03/22 |
| A-T-006w | 01/04/2022 |
| A-T-019w | 07/04/2022 |
| A-T-022w | 05/04/2022 |
| A-T-025w | 06/04/2022 |
| A-T-026w | 30/03/2022 |
| A-T-031w | 31/03/2022 |
| A-T-032w | 08/04/2022 |
| A-T-033w | 30/03/2022 |
| A-T-042wTCN | 01/04/2022 |
| A-T-049w | 05/04/2022 |
| A-T-050w | 01/04/2022 |
| A-T-052w | 11/04/2022 |
| A-T-055w | 07/04/2022 |
| A-T-056w | 12/04/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/03050
**Issue Number:** 1 **Date:** 14 April, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 29/03/22
**Date Instructions Received:** 30/03/22
**Date Analysis Completed:** 14/04/22

**Approved by:**



Sophie France
Client Service Manager

**Envirolab Job Number: 22/03050**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH306.ES02 | 326R.BH306.ES03 | 326R.BH307.ES03 | 326R.BH308.ES02 | 326R.BH308.ES03 | | | | | |
| Client Sample ID | BH306 | BH306 | BH307 | BH308 | BH308 | | | | | |
| Depth to Top | 0.50 | 1.00 | 1.00 | 0.50 | 1.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 15-Mar-22 | 15-Mar-22 | 15-Mar-22 | 14-Mar-22 | 14-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | | | |
| Sample Matrix Code | 4A | 4A | 4A | 7 | 4A | | | | | |
| % Stones >10mm$_A$ | <0.1 | 17.8 | <0.1 | <0.1 | <0.1 | | | % w/w | 0.1 | A-T-044 |
| pH$_D$[M#] | 7.57 | - | 8.23 | - | 10.32 | | | pH | 0.01 | A-T-031s |
| Chloride (water sol 2:1)$_D$[M#] | - | - | - | - | 90 | | | mg/kg | 10 | A-T-026s |
| Cyanide (total)$_A$[M#] | <1 | - | <1 | - | <1 | | | mg/kg | 1 | A-T-042sTCN |
| Phenols - Total by HPLC$_A$ | <0.2 | - | <0.2 | - | <0.2 | | | mg/kg | 0.2 | A-T-050s |
| Sulphide$_A$ | - | - | - | - | <5 | | | mg/kg | 5 | A-T-043-s |
| Sulphur (elemental)$_D$[M#] | - | - | - | - | <5 | | | mg/kg | 5 | A-T-029s |
| Loss on ignition (550degC)$_D$[M#] | - | - | - | - | 15.3 | | | % w/w | 0.6 | A-T-030s |
| Total Organic Carbon$_D$[M#] | 8.48 | 3.59 | 7.85 | 1.60 | 14.6 | | | % w/w | 0.03 | A-T-032s |
| Aluminium$_D$ | 15900 | - | 8160 | - | 14500 | | | mg/kg | 1 | A-T-024s |
| Antimony$_D$ | 14 | - | 56 | - | 131 | | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$[M#] | 27 | - | 44 | - | 47 | | | mg/kg | 1 | A-T-024s |
| Barium$_D$ | - | - | - | - | 169 | | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | 1.4 | - | 1.5 | - | 2.4 | | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | <1.0 | - | <1.0 | - | <1.0 | | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$[M#] | 3.1 | - | 2.3 | - | 3.0 | | | mg/kg | 0.5 | A-T-024s |
| Calcium$_D$ | 59700 | - | 14900 | - | 39900 | | | mg/kg | 50 | A-T-024s |
| Cobalt$_D$[M#] | 10 | - | 13 | - | 18 | | | mg/kg | 1 | A-T-024s |
| Copper$_D$[M#] | 1170 | - | 420 | - | 231 | | | mg/kg | 1 | A-T-024s |
| Chromium$_D$[M#] | 28 | - | 23 | - | 25 | | | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | <1 | - | <1 | - | <1 | | | mg/kg | 1 | A-T-040s |
| Iron$_D$ | 40700 | - | 35400 | - | 57500 | | | mg/kg | 50 | A-T-024s |
| Lead$_D$[M#] | 1800 | - | 283 | - | 1150 | | | mg/kg | 1 | A-T-024s |
| Magnesium$_D$ | 2910 | - | 2610 | - | 2900 | | | mg/kg | 50 | A-T-024s |
| Manganese$_D$[M#] | 486 | - | 545 | - | 428 | | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | 2.10 | - | <0.17 | - | 0.37 | | | mg/kg | 0.17 | A-T-024s |
| Molybdenum$_D$[M#] | - | - | - | - | 7 | | | mg/kg | 1 | A-T-024s |
| Nickel$_D$[M#] | 49 | - | 40 | - | 49 | | | mg/kg | 1 | A-T-024s |
| Potassium$_D$ | 1710 | - | 1270 | - | 1840 | | | mg/kg | 50 | A-T-024s |
| Selenium$_D$[M#] | <1 | - | <1 | - | 2 | | | mg/kg | 1 | A-T-024s |
| Silver$_D$ | <10 | - | <10 | - | <10 | | | mg/kg | 10 | A-T-024s |
| Tin$_D$ | 66 | - | 30 | - | 222 | | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/03050**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH306.ES02 | 326R.BH306.ES03 | 326R.BH307.ES03 | 326R.BH308.ES02 | 326R.BH308.ES03 | | | | | |
| Client Sample ID | BH306 | BH306 | BH307 | BH308 | BH308 | | | | | |
| Depth to Top | 0.50 | 1.00 | 1.00 | 0.50 | 1.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 15-Mar-22 | 15-Mar-22 | 15-Mar-22 | 14-Mar-22 | 14-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | | | |
| Sample Matrix Code | 4A | 4A | 4A | 7 | 4A | | | | | |
| Titanium$_{D}$ | 230 | - | 100 | - | 470 | | | mg/kg | 5 | A-T-024s |
| Vanadium$_{D}^{M\#}$ | 30 | - | 29 | - | 37 | | | mg/kg | 1 | A-T-024s |
| Zinc$_{D}^{M\#}$ | 659 | - | 147 | - | 99 | | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/03050**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH306.ES02 | 326R.BH306.ES03 | 326R.BH307.ES03 | 326R.BH308.ES02 | 326R.BH308.ES03 | | | | | |
| Client Sample ID | BH306 | BH306 | BH307 | BH308 | BH308 | | | | | |
| Depth to Top | 0.50 | 1.00 | 1.00 | 0.50 | 1.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 15-Mar-22 | 15-Mar-22 | 15-Mar-22 | 14-Mar-22 | 14-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | | | |
| Sample Matrix Code | 4A | 4A | 4A | 7 | 4A | | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | NAD | - | NAD | - | NAD | | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | - | - | | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | - | - | | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | N/A | - | N/A | - | N/A | | | | | A-T-045 |

**Envirolab Job Number: 22/03050**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH306.ES02 | 326R.BH306.ES03 | 326R.BH307.ES03 | 326R.BH308.ES02 | 326R.BH308.ES03 | | | | | |
| Client Sample ID | BH306 | BH306 | BH307 | BH308 | BH308 | | | | | |
| Depth to Top | 0.50 | 1.00 | 1.00 | 0.50 | 1.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 15-Mar-22 | 15-Mar-22 | 15-Mar-22 | 14-Mar-22 | 14-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | | | |
| Sample Matrix Code | 4A | 4A | 4A | 7 | 4A | | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | <0.01 | - | 0.02 | - | <0.01 | | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | 0.01 | - | 0.04 | - | 0.03 | | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | 0.04 | - | 0.05 | - | 0.06 | | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | 0.14 | - | 0.27 | - | 0.18 | | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | 0.18 | - | 0.37 | - | 0.22 | | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | 0.23 | - | 0.52 | - | 0.28 | | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | 0.12 | - | 0.28 | - | 0.14 | | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | 0.08 | - | 0.18 | - | 0.10 | | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | 0.15 | - | 0.28 | - | 0.20 | | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | <0.04 | - | 0.05 | - | <0.04 | | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | 0.31 | - | 0.47 | - | 0.32 | | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | 0.14 | - | 0.30 | - | 0.15 | | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | <0.03 | - | <0.03 | - | 0.05 | | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | 0.14 | - | 0.17 | - | 0.17 | | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | 0.28 | - | 0.46 | - | 0.32 | | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | 1.82 | - | 3.46 | - | 2.22 | | | mg/kg | 0.01 | A-T-019s |

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH306.ES02 | 326R.BH306.ES03 | 326R.BH307.ES03 | 326R.BH308.ES02 | 326R.BH308.ES03 | | | | | |
| Client Sample ID | BH306 | BH306 | BH307 | BH308 | BH308 | | | | | |
| Depth to Top | 0.50 | 1.00 | 1.00 | 0.50 | 1.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 15-Mar-22 | 15-Mar-22 | 15-Mar-22 | 14-Mar-22 | 14-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | | | |
| Sample Matrix Code | 4A | 4A | 4A | 7 | 4A | | | | | |
| **Speciated PCB-WHO12** | | | | | | | | | | |
| PCB BZ 81$_A$ | <0.005 | - | <0.005 | - | <0.005 | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 105$_A$ | <0.005 | - | <0.005 | - | <0.005 | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 114$_A$ | <0.005 | - | 0.023 | - | <0.005 | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 118$_A$$^{M\#}$ | <0.007 | - | <0.007 | - | <0.007 | | | mg/kg | 0.007 | A-T-004s |
| PCB BZ 123$_A$ | <0.005 | - | <0.005 | - | <0.005 | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 126$_A$ | <0.005 | - | <0.005 | - | <0.005 | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 156$_A$ | <0.005 | - | <0.005 | - | <0.005 | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 157$_A$ | <0.005 | - | 0.039 | - | 0.007 | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 167$_A$ | <0.005 | - | <0.005 | - | <0.005 | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 169$_A$ | <0.005 | - | <0.005 | - | <0.005 | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 189$_A$ | <0.005 | - | <0.005 | - | <0.005 | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 77$_A$ | <0.005 | - | 0.031 | - | <0.005 | | | mg/kg | 0.005 | A-T-004s |
| Total Speciated PCB-WHO12$_A$ | <0.007 | - | 0.093 | - | 0.007 | | | mg/kg | 0.005 | A-T-004s |

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH306.ES02 | 326R.BH306.ES03 | 326R.BH307.ES03 | 326R.BH308.ES02 | 326R.BH308.ES03 | | | | | |
| Client Sample ID | BH306 | BH306 | BH307 | BH308 | BH308 | | | | | |
| Depth to Top | 0.50 | 1.00 | 1.00 | 0.50 | 1.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 15-Mar-22 | 15-Mar-22 | 15-Mar-22 | 14-Mar-22 | 14-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | | | |
| Sample Matrix Code | 4A | 4A | 4A | 7 | 4A | | | | | |
| SVOC | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Hexachlorobenzene$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | 3240 | - | <100 | - | 210 | | | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | 1950 | - | <100 | - | 159 | | | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | 7850 | - | <500 | - | <500 | | | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | 117 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | 4320 | - | <100 | - | 332 | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Pentachlorophenol (SVOC)$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | <500 | - | <500 | - | <500 | | | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | 345 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |

Envirolab Job Number: 22/03050

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH306.ES02 | 326R.BH306.ES03 | 326R.BH307.ES03 | 326R.BH308.ES02 | 326R.BH308.ES03 | | | | | |
| Client Sample ID | BH306 | BH306 | BH307 | BH308 | BH308 | | | | | |
| Depth to Top | 0.50 | 1.00 | 1.00 | 0.50 | 1.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 15-Mar-22 | 15-Mar-22 | 15-Mar-22 | 14-Mar-22 | 14-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | | | |
| Sample Matrix Code | 4A | 4A | 4A | 7 | 4A | | | | | |
| Isophorone$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Hexachloroethane$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | <100 | - | <100 | - | <100 | | | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | 2650 | - | <100 | - | 1960 | | | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH306.ES02 | 326R.BH306.ES03 | 326R.BH307.ES03 | 326R.BH308.ES02 | 326R.BH308.ES03 | | | | | |
| Client Sample ID | BH306 | BH306 | BH307 | BH308 | BH308 | | | | | |
| Depth to Top | 0.50 | 1.00 | 1.00 | 0.50 | 1.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 15-Mar-22 | 15-Mar-22 | 15-Mar-22 | 14-Mar-22 | 14-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | | | |
| Sample Matrix Code | 4A | 4A | 4A | 7 | 4A | | | | | |
| VOC | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Chloromethane$_{A}$ | <10 | - | <10 | - | <10 | | | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Bromomethane$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Chloroethane$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Dichloromethane$_{A}$ | <5 | - | <5 | - | <5 | | | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_{A}^{\#}$ | <5 | - | <5 | - | <5 | | | µg/kg | 5 | A-T-006s |
| Chloroform$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_{A}^{\#}$ | <2 | - | <2 | - | <2 | | | µg/kg | 2 | A-T-006s |
| Benzene$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Trichloroethene$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Dibromomethane$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_{A}^{\#}$ | <10 | - | <10 | - | <10 | | | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Toluene$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_{A}^{\#}$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_{A}^{\#}$ | <1 | - | 4 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_{A}^{\#}$ | <3 | - | <3 | - | <3 | | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/03050**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH306.ES02 | 326R.BH306.ES03 | 326R.BH307.ES03 | 326R.BH308.ES02 | 326R.BH308.ES03 | | | | | |
| Client Sample ID | BH306 | BH306 | BH307 | BH308 | BH308 | | | | | |
| Depth to Top | 0.50 | 1.00 | 1.00 | 0.50 | 1.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 15-Mar-22 | 15-Mar-22 | 15-Mar-22 | 14-Mar-22 | 14-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | | | |
| Sample Matrix Code | 4A | 4A | 4A | 7 | 4A | | | | | |
| 1,2-Dibromoethane$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Chlorobenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_A$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| m & p Xylene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| o-Xylene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Styrene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Bromoform$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_A$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| Bromobenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_A^\#$ | <2 | - | <2 | - | <2 | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_A$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_A$ | <2 | - | <2 | - | <2 | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_A$ | <3 | - | <3 | - | <3 | | | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_A^\#$ | <1 | - | <1 | - | <1 | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_A$ | <3 | - | <3 | - | <3 | | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/03050**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH306. ES02 | 326R.BH306. ES03 | 326R.BH307. ES03 | 326R.BH308. ES02 | 326R.BH308. ES03 | | | | | |
| Client Sample ID | BH306 | BH306 | BH307 | BH308 | BH308 | | | | | |
| Depth to Top | 0.50 | 1.00 | 1.00 | 0.50 | 1.00 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 15-Mar-22 | 15-Mar-22 | 15-Mar-22 | 14-Mar-22 | 14-Mar-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Solid | Soil - ES | | | | | |
| Sample Matrix Code | 4A | 4A | 4A | 7 | 4A | | | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | <10 | - | <1 | - | 7 | | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | <10 | - | <1 | - | 6 | | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | 49 | - | <1 | - | 13 | | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | 120 | - | <1 | - | 16 | | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | 2980 | - | 8 | - | 45 | | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | 1160 | - | <1 | - | 32 | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | 4310 | - | 8 | - | 119 | | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | <10 | - | <2 | - | 7 | | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | 15 | - | <1 | - | 7 | | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | 74 | - | 1 | - | 22 | | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | 214 | - | 2 | - | 51 | | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | 292 | - | 6 | - | 284 | | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | 271 | - | <1 | - | 27 | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | 866 | - | 10 | - | 397 | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | 5180 | - | 18 | - | 516 | | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | <0.01 | - | <0.01 | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/03050

**Date Received:** 30/03/2022 (am)

**Cool Box Temperatures (°C):** 11.4 - 12.3

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/9 |
|---|---|---|---|---|
| Client Sample No | 326R.BH306 .ES02 | 326R.BH306 .ES03 | 326R.BH307 .ES03 | 326R.BH308 .ES03 |
| Client Sample ID/Depth | BH306 0.50m | BH306 1.00m | BH307 1.00m | BH308 1.00m |
| Date Sampled | 15/03/22 | 15/03/22 | 15/03/22 | 14/03/22 |
| Deviation Code | | | | |
| F | ✓ | ✓ | ✓ | ✓ |

*Key*

*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/9 |
|---|---|---|---|---|
| Client Sample No | 326R.BH306 .ES02 | 326R.BH306 .ES03 | 326R.BH307 .ES03 | 326R.BH308 .ES03 |
| Client Sample ID/Depth | BH306 0.50m | BH306 1.00m | BH307 1.00m | BH308 1.00m |
| Date Sampled | 15/03/22 | 15/03/22 | 15/03/22 | 14/03/22 |
| Cyanide (total) | ✓ | | ✓ | ✓ |
| VPHCWG | ✓ | | ✓ | ✓ |
| PAH-16MS | ✓ | | ✓ | ✓ |
| VOC | ✓ | | ✓ | ✓ |
| SVOC | ✓ | | ✓ | ✓ |
| PAH (total 17) | | ✓ | | |
| BTEX (total) | | ✓ | | |
| Total Organic Carbon | | | | ✓ |
| Sulphide | | | | ✓ |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/03050/2 | 22/03050/3 | 22/03050/6 | 22/03050/8 | 22/03050/9 |
|---|---|---|---|---|---|
| Client Sample No | 326R.BH306 .ES02 | 326R.BH306 .ES03 | 326R.BH307 .ES03 | 326R.BH308 .ES02 | 326R.BH308 .ES03 |
| Client Sample ID/Depth | BH306 0.50m | BH306 1.00m | BH307 1.00m | BH308 0.50m | BH308 1.00m |
| Date Sampled | 15/03/22 | 15/03/22 | 15/03/22 | 14/03/22 | 14/03/22 |
| A-T-004s | 11/04/2022 | 11/04/2022 | 11/04/2022 | 11/04/2022 | 11/04/2022 |
| A-T-006s | 08/04/2022 | | 08/04/2022 | | 08/04/2022 |
| A-T-007s | | 08/04/2022 | | 08/04/2022 | |
| A-T-019s | 11/04/2022 | 11/04/2022 | 11/04/2022 | 11/04/2022 | 11/04/2022 |
| A-T-022s | 11/04/2022 | 11/04/2022 | 11/04/2022 | 11/04/2022 | 11/04/2022 |
| A-T-024s | 12/04/2022 | | 12/04/2022 | | 12/04/2022 |
| A-T-025w | | 14/04/2022 | | 14/04/2022 | |
| A-T-026s | | | | | 12/04/2022 |
| A-T-026w | | 14/04/2022 | | 14/04/2022 | |
| A-T-027s | 11/04/2022 | | 11/04/2022 | | 11/04/2022 |
| A-T-029s | | | | | 11/04/2022 |
| A-T-030s | | | | | 13/04/2022 |
| A-T-031s | 11/04/2022 | | 11/04/2022 | | 11/04/2022 |
| A-T-031w | | 14/04/2022 | | 14/04/2022 | |
| A-T-032s | 12/04/2022 | 12/04/2022 | 12/04/2022 | 12/04/2022 | 13/04/2022 |
| A-T-032w | | 14/04/2022 | | 14/04/2022 | |
| A-T-037w | | 14/04/2022 | | 14/04/2022 | |
| A-T-040s | 12/04/2022 | | 12/04/2022 | | 12/04/2022 |
| A-T-042sTCN | 08/04/2022 | | 08/04/2022 | | 08/04/2022 |
| A-T-043-s | | | | | 13/04/2022 |
| A-T-044 | 11/04/2022 | 11/04/2022 | 11/04/2022 | 11/04/2022 | 11/04/2022 |
| A-T-045 | 05/04/2022 | | 05/04/2022 | | 05/04/2022 |
| A-T-050s | 08/04/2022 | | 08/04/2022 | | 08/04/2022 |
| A-T-050w | | 14/04/2022 | | 14/04/2022 | |
| A-T-052s | 12/04/2022 | | 11/04/2022 | | 11/04/2022 |
| A-T-055s | 11/04/2022 | | 11/04/2022 | | 11/04/2022 |
| Calc-no stones | | 14/04/2022 | | 14/04/2022 | |
| Probe (w) | | 14/04/2022 | | 14/04/2022 | |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | | | |
|---|---|---|---|
| Envirolab Job Number: | 22/03050 | | |
| Issue Number: | 1 | Date: | 14-Apr-22 |
| Client: | BAM Ritchies Warrington<br>Unit 5<br>Taurus Park<br>Europa Boulevard<br>Warrington<br>UK, WA5 7ZT | | |
| Project Manager: | Andy Bird | | |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works | | |
| Project Ref: | 326R | | |
| Order No: | RIT 262 915 759 | | |
| Date Samples Received: | 29-Mar-22 | | |
| Date Instructions Received: | 30-Mar-22 | | |
| Date Analysis Completed: | 14-Apr-22 | | |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Holly Neary-King
Client Services Supervisor

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/03050/3 | | | | |
| Client Sample Number | | | | 326R.BH306.ES03 | | | | |
| Client Sample ID | | | | BH306 | | | | |
| Depth to Top | | | | 1 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 15/03/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **3.59** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **2.39** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **1720** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.015 | **0.150** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.010 | **0.100** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.007 | **0.070** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.026 | **0.260** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.041 | **0.410** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | <0.001 | **<0.01** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.027 | **0.270** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | 0.002 | **0.020** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.002 | **0.020** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 3 | **28** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.6 | **6.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 126 | **1260** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 158 | **1580** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | 0.12 | **1.20** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | 24.30 | **243** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 9.8 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 316 | | | | |
| Mass Sample (kg) | | | | 0.201 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 87.2 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/03050/8 | | | | |
| Client Sample Number | | | | 326R.BH308.ES02 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH308 | | | | |
| Depth to Top | | | | 0.5 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 14/03/2022 | | | | |
| Sample Type | | | | Solid | | | | |
| Sample Matrix Code | | | | 7 | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **1.6** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **1.21** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **697** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.008 | **0.080** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.080 | **0.800** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.003 | **0.030** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.022 | **0.220** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.001 | **0.010** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.199 | **1.990** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.089 | **0.890** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.077 | **0.770** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 3 | **33** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.5 | **5.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 11 | **113** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 58 | **580** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 9.3 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 116 | | | | |
| Mass Sample (kg) | | | | 0.188 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 92.9 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/03685
**Issue Number:** 1 **Date:** 26 April, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Mailing list 1/Mailing list 2
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 12/04/22
**Date Instructions Received:** 18/04/22
**Date Analysis Completed:** 26/04/22

**Approved by:**



Sophie France
Client Service Manager

**Envirolab Job Number: 22/03685**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03685/1 | 22/03685/2 | 22/03685/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034026 | WA1034027 | WA1034028 | | | | | | | |
| Client Sample ID | BAL01 | BAL02 | BAL03 | | | | | | | |
| Depth to Top | 0.10 | 0.10 | 0.10 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 06-Apr-22 | 06-Apr-22 | 06-Apr-22 | | | | | | | |
| Sample Type | Solid | Solid | Solid | | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | | | | | | | |
| % Moisture at <40C$_A$ | 3.5 | 10.1 | 3.3 | | | | | % w/w | 0.1 | A-T-044 |
| pH$_D$$^{M\#}$ | 8.51 | 8.26 | 8.77 | | | | | pH | 0.01 | A-T-031s |
| Cyanide (total)$_A$$^{M\#}$ | <1 | <1 | <1 | | | | | mg/kg | 1 | A-T-042sTCN |
| Phenols - Total by HPLC$_A$ | <0.2 | <0.2 | <0.2 | | | | | mg/kg | 0.2 | A-T-050s |
| Arsenic$_D$$^{M\#}$ | <1 | 16 | 5 | | | | | mg/kg | 1 | A-T-024s |
| Boron (water soluble)$_D$ | <1.0 | <1.0 | <1.0 | | | | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$$^{M\#}$ | 1.5 | 3.5 | 0.9 | | | | | mg/kg | 0.5 | A-T-024s |
| Copper$_D$$^{M\#}$ | 121 | 121 | 43 | | | | | mg/kg | 1 | A-T-024s |
| Chromium$_D$$^{M\#}$ | 31 | 60 | 30 | | | | | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | <1 | <1 | <1 | | | | | mg/kg | 1 | A-T-040s |
| Lead$_D$$^{M\#}$ | 50 | 116 | 24 | | | | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | 0.53 | 0.25 | 1.85 | | | | | mg/kg | 0.17 | A-T-024s |
| Nickel$_D$$^{M\#}$ | 33 | 61 | 26 | | | | | mg/kg | 1 | A-T-024s |
| Selenium$_D$$^{M\#}$ | <1 | <1 | <1 | | | | | mg/kg | 1 | A-T-024s |
| Zinc$_D$$^{M\#}$ | 135 | 309 | 66 | | | | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/03685**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03685/1 | 22/03685/2 | 22/03685/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034026 | WA1034027 | WA1034028 | | | | | | | |
| Client Sample ID | BAL01 | BAL02 | BAL03 | | | | | | | |
| Depth to Top | 0.10 | 0.10 | 0.10 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 06-Apr-22 | 06-Apr-22 | 06-Apr-22 | | | | | | | |
| Sample Type | Solid | Solid | Solid | | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | | | | | | | |
| **Bulk Fibre ID in Solid Fines ^ (inc. matrix)** | | | | | | | | | | |
| Bulk Fibre Identification in Solid Fines$_{D}$# | NAD | NAD | NAD | | | | | | | A-T-045 |
| Asbestos Matrix (visual) SOLID Fines$_{D}$ | - | - | - | | | | | | | A-T-045 |
| Asbestos Matrix (microscope) SOLID Fines$_{D}$ | - | - | - | | | | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | N/A | N/A | N/A | | | | | | | A-T-045 |

| Lab Sample ID | 22/03685/1 | 22/03685/2 | 22/03685/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034026 | WA1034027 | WA1034028 | | | | | | | |
| Client Sample ID | BAL01 | BAL02 | BAL03 | | | | | | | |
| Depth to Top | 0.10 | 0.10 | 0.10 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 06-Apr-22 | 06-Apr-22 | 06-Apr-22 | | | | | | | |
| Sample Type | Solid | Solid | Solid | | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | | | | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | 0.05 | 0.04 | 0.02 | | | | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | 0.04 | 0.11 | 0.03 | | | | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | 0.21 | 0.49 | 0.13 | | | | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | 0.22 | 0.41 | 0.20 | | | | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | 0.22 | 0.57 | 0.24 | | | | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | 0.27 | 0.73 | 0.29 | | | | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | 0.12 | 0.41 | 0.14 | | | | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | 0.10 | 0.28 | 0.10 | | | | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | 0.24 | 0.44 | 0.21 | | | | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | <0.04 | 0.09 | <0.04 | | | | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | 0.70 | 0.93 | 0.46 | | | | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | 0.03 | 0.03 | 0.02 | | | | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | 0.15 | 0.48 | 0.17 | | | | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | 0.07 | 0.08 | 0.10 | | | | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | 0.41 | 0.39 | 0.27 | | | | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | 0.59 | 0.88 | 0.44 | | | | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | 3.42 | 6.36 | 2.82 | | | | | mg/kg | 0.01 | A-T-019s |

**Envirolab Job Number: 22/03685**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03685/1 | 22/03685/2 | 22/03685/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034026 | WA1034027 | WA1034028 | | | | | | | |
| Client Sample ID | BAL01 | BAL02 | BAL03 | | | | | | | |
| Depth to Top | 0.10 | 0.10 | 0.10 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 06-Apr-22 | 06-Apr-22 | 06-Apr-22 | | | | | | | |
| Sample Type | Solid | Solid | Solid | | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | | | | | | | |
| **PAH-16MS plus Coronene** | | | | | | | | | | |
| Coronene$_A$ | 0.05 | 0.12 | 0.04 | | | | | mg/kg | 0.01 | A-T-019s |
| Total PAH-16MS plus Coronene$_A$ | 0.05 | 0.12 | 0.04 | | | | | mg/kg | 0.01 | A-T-019s |

| Lab Sample ID | 22/03685/1 | 22/03685/2 | 22/03685/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034026 | WA1034027 | WA1034028 | | | | | | | |
| Client Sample ID | BAL01 | BAL02 | BAL03 | | | | | | | |
| Depth to Top | 0.10 | 0.10 | 0.10 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 06-Apr-22 | 06-Apr-22 | 06-Apr-22 | | | | | | | |
| Sample Type | Solid | Solid | Solid | | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | | | | | | | |
| **VOC** | | | | | | | | | | |
| Dichlorodifluoromethane$_A$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Chloromethane$_A$ | <50 | <50 | <50 | | | | | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Bromomethane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Chloroethane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Dichloromethane$_A$ | <25 | <25 | <25 | | | | | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_A^\#$ | <25 | <25 | <25 | | | | | µg/kg | 5 | A-T-006s |
| Chloroform$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_A^\#$ | <10 | <10 | <10 | | | | | µg/kg | 2 | A-T-006s |
| Benzene$_A^\#$ | <5 | <5 | 7 | | | | | µg/kg | 1 | A-T-006s |
| Trichloroethene$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Dibromomethane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_A^\#$ | <50 | <50 | <50 | | | | | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Toluene$_A^\#$ | <5 | 14 | 8 | | | | | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_A^\#$ | <15 | <15 | <15 | | | | | µg/kg | 3 | A-T-006s |
| 1,2-Dibromoethane$_A^\#$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |

**Envirolab Job Number: 22/03685**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03685/1 | 22/03685/2 | 22/03685/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034026 | WA1034027 | WA1034028 | | | | | | | |
| Client Sample ID | BAL01 | BAL02 | BAL03 | | | | | | | |
| Depth to Top | 0.10 | 0.10 | 0.10 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 06-Apr-22 | 06-Apr-22 | 06-Apr-22 | | | | | | | |
| Sample Type | Solid | Solid | Solid | | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | | | | | | | |
| Chlorobenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_{A}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| m & p Xylene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| o-Xylene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Styrene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Bromoform$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_{A}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| Bromobenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_{A}^{\#}$ | <10 | <10 | <10 | | | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_{A}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_{A}$ | <10 | <10 | <10 | | | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_{A}$ | <15 | <15 | <15 | | | | | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_{A}^{\#}$ | <5 | <5 | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_{A}$ | <15 | <15 | <15 | | | | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/03685**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03685/1 | 22/03685/2 | 22/03685/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034026 | WA1034027 | WA1034028 | | | | | | | |
| Client Sample ID | BAL01 | BAL02 | BAL03 | | | | | | | |
| Depth to Top | 0.10 | 0.10 | 0.10 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 06-Apr-22 | 06-Apr-22 | 06-Apr-22 | | | | | | | |
| Sample Type | Solid | Solid | Solid | | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | | | | | | | |
| **TPH CWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | 2 | 1 | 3 | | | | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | 1 | 1 | 2 | | | | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | 2 | 3 | 4 | | | | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | 5 | 12 | 6 | | | | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | 140 | 298 | 32 | | | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | 150 | 316 | 48 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | 3 | 2 | 2 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | 3 | 2 | 3 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | 9 | 8 | 14 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | 21 | 27 | 30 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | 39 | 62 | 44 | | | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | 76 | 101 | 94 | | | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C35)$_A$ | 226 | 417 | 142 | | | | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | <0.01 | <0.01 | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |

**Envirolab Job Number: 22/03685**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03685/1 | 22/03685/2 | 22/03685/3 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034026 | WA1034027 | WA1034028 | | | | | | | |
| Client Sample ID | BAL01 | BAL02 | BAL03 | | | | | | | |
| Depth to Top | 0.10 | 0.10 | 0.10 | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 06-Apr-22 | 06-Apr-22 | 06-Apr-22 | | | | | | | |
| Sample Type | Solid | Solid | Solid | | | | | | | |
| Sample Matrix Code | 7 | 7 | 7 | | | | | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C35-C44$_A$ | 37 | 85 | 9 | | | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | 188 | 400 | 57 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | 22 | 58 | 3 | | | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | 97 | 159 | 97 | | | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | 285 | 560 | 154 | | | | | mg/kg | 1 | A-T-055s |
| EPH CWG GCxGC ID (for FID characterisations)$_A$ | Profile indicative of PAHs, lube oil, humic substances and other heavier hydrocarbons | Profile indicative of PAHs, lube oil, humic substances and other heavier hydrocarbons | Profile indicative of PAHs, humic substances and other heavier hydrocarbons | | | | | | | A-T-055s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/03685

**Date Received:** 18/04/2022 (am)

**Cool Box Temperatures (°C):** 10.8

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/03685/1 | 22/03685/2 | 22/03685/3 |
|---|---|---|---|
| Client Sample No | WA1034026 | WA1034027 | WA1034028 |
| Client Sample ID/Depth | BAL01<br>0.10m | BAL02<br>0.10m | BAL03<br>0.10m |
| Date Sampled | 06/04/22 | 06/04/22 | 06/04/22 |
| A-T-006s | 26/04/2022 | 26/04/2022 | 26/04/2022 |
| A-T-019s | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-022s | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-024s | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-027s | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-031s | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-040s | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-042sTCN | 22/04/2022 | 22/04/2022 | 22/04/2022 |
| A-T-044 | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-045 | 20/04/2022 | 20/04/2022 | 20/04/2022 |
| A-T-050s | 22/04/2022 | 22/04/2022 | 22/04/2022 |
| A-T-055s | 25/04/2022 | 25/04/2022 | 25/04/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT
## SUPPLEMENT TO TEST REPORT 22/03772/1

**Amendments:** Request for project/sample information change

**Envirolab Job Number:** 22/03772
**Issue Number:** 2 **Date:** 31 October, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 14/04/22
**Date Instructions Received:** 20/04/22
**Date Analysis Completed:** 05/05/22

**Approved by:**



Richard Wong
Client Manager

UKAS TESTING
1247

**Envirolab Job Number: 22/03772**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| pH (w)$_{A}^{\#}$ | 7.58 | 7.66 | 7.79 | 7.15 | 6.75 | | | pH | 0.01 | A-T-031w |
| COD (settled)$_{A}^{\#}$ | 16 | 17 | 27 | 21 | 40 | | | mg/l | 5 | A-T-034w |
| BOD (settled, 5 day)$_{A}$ | 2 | <1 | 1 | 15 | 14 | | | mg/l | 1 | A-T-048 |
| Hardness Total$_{A}^{\#}$ | 185 | 156 | 147 | 447 | 683 | | | mg/l Ca CO3 | 2 | A-T-049w |
| Total Suspended Solids (w)$_{A}^{\#}$ | <10 | <10 | <10 | 14 | 71 | | | mg/l | 10 | A-T-036w |
| Ammoniacal nitrogen as N (w)$_{A}^{\#}$ | 0.28 | 0.11 | 0.09 | 4.73 | 28.3 | | | mg/l | 0.05 | A-T-033w |
| Chloride (w)$_{A}^{\#}$ | 84 | 85 | 84 | 36 | 34 | | | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | 0.005 | <0.005 | | | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | 0.008 | 0.008 | | | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_{A}^{\#}$ | <0.005 | <0.005 | <0.005 | <0.005 | 0.008 | | | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_{A}$ | 0.3 | 0.3 | 0.2 | 0.1 | 0.1 | | | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_{A}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | mg/l | 0.01 | A-T-050w |
| DOC - Dissolved Organic Carbon (w)$_{A}^{\#}$ | 3.6 | 3.3 | 3.3 | 5.5 | 5.6 | | | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_{A}$ | 2 | 2 | 2 | 1 | <5 | | | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_{A}^{\#}$ | 3 | 2 | 3 | 2 | 9 | | | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <5 | | | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_{A}^{\#}$ | <0.2 | <0.2 | <0.2 | <0.2 | <1.0 | | | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_{A}^{\#}$ | 61 | 49 | 47 | 135 | 222 | | | mg/l | 1 | A-T-049w |
| Copper (dissolved)$_{A}^{\#}$ | 9 | 4 | 7 | 8 | 26 | | | µg/l | 4 | A-T-025w |
| Chromium (dissolved)$_{A}^{\#}$ | 21 | 22 | 21 | 1 | <5 | | | µg/l | 1 | A-T-025w |
| Chromium (hexavalent) (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | mg/l | 0.01 | A-T-040w |
| Iron (dissolved)$_{A}^{\#}$ | 681 | 355 | 549 | 3160 | 76800 | | | µg/l | 10 | A-T-025w |
| Lead (dissolved)$_{A}^{\#}$ | 6 | <1 | 3 | 52 | 21 | | | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_{A}^{\#}$ | 74 | 51 | 56 | 746 | 693 | | | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_{A}^{\#}$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.5 | | | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_{A}^{\#}$ | 3 | 2 | 3 | 7 | <5 | | | µg/l | 2 | A-T-025w |
| Selenium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <5 | | | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_{A}^{\#}$ | <1 | <1 | <1 | 2 | 6 | | | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_{A}^{\#}$ | 44 | 28 | 34 | 50 | 59 | | | µg/l | 2 | A-T-025w |

**Envirolab Job Number: 22/03772**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| **Acid Herbicides Suite 3+ (w)** | | | | | | | | | | |
| 2,3,6-TBA (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-D (w)$_A$ | 0.06 | 0.05 | 0.05 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DB (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-T (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex) (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| 4-CPA (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Benazolin (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Bentazone (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Bromacil (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Bromoxynil (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Clopyralid (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Dicamba (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Diclofop (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop-isopropyl (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Fluroxypyr (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Ioxynil (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| MCPA (w)$_A$ | 0.04 | 0.04 | 0.04 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| MCPB (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| MCPP; (Mecoprop) (w)$_A$ | 0.12 | 0.11 | 0.10 | 0.02 | 0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| PCP; (Pentachlorophenol) (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Picloram (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Triclopyr (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/03772**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| **Carb+Urea(w)HerbsSuite1** | | | | | | | | | | |
| Carbetamide (w)$_A$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |
| Chlorbufam (w)$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 0.1 | Subcon RPS MH |
| Chloroxuron (w) $_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Chlorpropham (w)$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 0.1 | Subcon RPS MH |
| Chlortoluron (w)$_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Diflubenzuron (w)$_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Dimefuron (w) $_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Diuron (w)$_A$ | <0.05 | 0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Ethiofencarb (w)$_A$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |
| Isoproturon (w)$_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Linuron (w)$_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Methabenzthiazuron (w)$_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Metoxuron (w)$_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Monolinuron (w)$_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Monuron (w)$_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Pencycuron (w)$_A$ | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | | | µg/l | 0.05 | Subcon RPS MH |
| Phenmedipham (w)$_A$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |
| Pirimicarb (w)$_A$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |
| Propham (w)$_A$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine+Simazine) (w)** | | | | | | | | | | |
| Dichlobenil (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Tecnazene (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Trifluralin (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| alpha-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Hexachlorobenzene (HCB) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Simazine (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Atrazine (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| beta-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Quintozene (PCNB) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Triallate (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| delta-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Chlorothalonil (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Heptachlor (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Aldrin (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Triadimefon (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Telodrin (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Isodrin (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Pendimethalin (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Heptachlor epoxide (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| trans-Chlordane (Gamma) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| o,p-DDE (2,4) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Endosulphan I (Alpha) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| cis-Chlordane (Alpha) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| p,p-DDE (4,4) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Dieldrin (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| o,p-DDD (2,4) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Endrin (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Endosulphan II (Beta) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| p,p-DDD (4,4) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| o,p-DDT (2,4) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Endrin Aldehyde (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Endosulphan Sulphate (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| p,p-DDT (4,4) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| o,p-Methoxychlor (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Endrin Ketone (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| p,p-Methoxychlor (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Permethrin I (cis) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Permethrin II (trans) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Dichlorvos (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| Mevinphos (w)$_A$ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | µg/l | 0.5 | A-T-056w |
| Demeton-S (w)$_A$ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | µg/l | 0.5 | A-T-056w |
| Phorate (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Dimethoate (w)$_A$ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | µg/l | 0.5 | A-T-056w |
| Demeton-O (w)$_A$ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | µg/l | 0.5 | A-T-056w |
| Propetamphos (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Diazinon (Dimpylate) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Disulfoton (w)$_A$ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | | | µg/l | 0.5 | A-T-056w |
| Chlorpyrifos-methyl (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Methyl Parathion (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Pirimiphos-methyl (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Fenitrothion (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Malathion (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Chlorpyrifos (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Fenthion (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Parathion (Ethyl Parathion) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Trichloronate (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Chlorfenvinphos (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Fensulphothion (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Prothiofos (Tokuthion) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Ethion (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Triazophos (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Carbophenothion (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Phosalone (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Azinphos-methyl (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Azinphos-ethyl (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| Coumaphos (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |
| gamma-Hexachlorocyclohexane (HCH / Lindane) (w)$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | | | µg/l | 0.1 | A-T-056w |

**Envirolab Job Number: 22/03772**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| **ONP (Triazine Herbicides x11) (w)** | | | | | | | | | | |
| Ametryne (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Atraton (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Atrazine (w)$_A$ | <0.02 | <0.02 | <0.02 | 0.05 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Cyanazine (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Prometon (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Prometryn (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Propazine (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Simazine (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Simetryn (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Terbuthylazine (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |
| Terbutryn (w)$_A$ | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | | | µg/l | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/03772**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_{A}^{\#}$ | 0.01 | 0.01 | 0.02 | <0.01 | 0.13 | | | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | 0.07 | 0.01 | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_{A}^{\#}$ | 0.01 | <0.01 | 0.03 | <0.01 | 0.03 | | | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | 0.05 | | | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_{A}^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | | | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_{A}^{\#}$ | 0.01 | 0.02 | 0.07 | <0.01 | 0.01 | | | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_{A}^{\#}$ | <0.01 | <0.01 | 0.02 | <0.01 | 0.05 | | | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_{A}^{\#}$ | 0.01 | 0.01 | 0.03 | <0.01 | 0.02 | | | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_{A}^{\#}$ | 0.04 | 0.04 | 0.17 | 0.07 | 0.30 | | | µg/l | 0.01 | A-T-019w |
| | | | | | | | | | | |
| **Pyrethroids (x6) (w)** | | | | | | | | | | |
| Cyfluthrin (w)$_{A}$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |
| Cyhalothrin-lambda (w)$_{A}$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |
| Cypermethrin (w)$_{A}$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |
| Deltamethrin (w)$_{A}$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |
| Fenvalerate (w)$_{A}$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |
| Permethrin (w)$_{A}$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | µg/l | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/03772**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| **Speciated PCB-WHO12 (w)** | | | | | | | | | | |
| PCB BZ 81 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 105 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 114 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 118 (w)$_A$$^{\#}$ | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | | | µg/l | 0.002 | A-T-004w |
| PCB BZ 123 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 126 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 156 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 157 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 167 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 169 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 189 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 77 (w)$_A$ | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | | | µg/l | 0.001 | A-T-004w |
| Total Speciated PCB-WHO12 (w)$_A$ | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | | | µg/l | 0.001 | A-T-004w |

**Envirolab Job Number: 22/03772**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| **SVOC (excluding PAH-16) (w)** | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | <10 | <10 | <10 | <10 | <10 | | | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | <4 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | <10 | <10 | <10 | <10 | <10 | | | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Hexachlorobenzene SVOC$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Pentachlorophenol SVOC$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Phenol$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |

**Envirolab Job Number: 22/03772**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| Nitrobenzene$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Isophorone$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |
| Perylene$_A$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-052w |

**Envirolab Job Number: 22/03772**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| **VOC (w)** | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Chloromethane$_{A}$ | <10 | <10 | <10 | <10 | <10 | | | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Bromomethane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Chloroethane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Dichloromethane$_{A}$ | <5 | <5 | <5 | <5 | <5 | | | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Bromochloromethane$_{A}^{\#}$ | <5 | <5 | <5 | <5 | <5 | | | µg/l | 5 | A-T-006w |
| Chloroform$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_{A}^{\#}$ | <2 | <2 | <2 | <2 | <2 | | | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Benzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Dibromomethane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_{A}^{\#}$ | <10 | <10 | <10 | <10 | <10 | | | µg/l | 10 | A-T-006w |
| Trichloroethene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Toluene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_{A}^{\#}$ | <3 | <3 | <3 | <3 | <3 | | | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| Tetrachloroethene$_{A}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,1,1,2-Tetrachloroethane$_{A}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Chlorobenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Ethylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| m & p Xylene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Bromoform$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Styrene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_{A}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| o-Xylene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| Bromobenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| n-propylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_{A}^{\#}$ | <2 | <2 | <2 | <2 | <2 | | | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| n-butylbenzene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_{A}^{\#}$ | <2 | <2 | <2 | <2 | <2 | | | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_{A}^{\#}$ | <3 | <3 | <3 | <3 | <3 | | | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_{A}^{\#}$ | <3 | <3 | <3 | <3 | <3 | | | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_{A}^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/03772**

**Client Project Name: Victoria North HIF**

**Client Project Ref: 326R**

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 | | | | | |
| Client Sample ID | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | 13-Apr-22 | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | | | | | |
| **TPH UKCWG (w) with Clean Up** | | | | | | | | | | |
| Ali >C5-C6 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-022w |
| Ali >C6-C8 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-022w |
| Ali >C8-C10 $(w)_A^{\#}$ | <5 | <5 | <5 | <5 | <5 | | | µg/l | 5 | A-T-055w |
| Ali >C10-C12 $(w)_A^{\#}$ | <5 | <5 | <5 | <5 | <5 | | | µg/l | 5 | A-T-055w |
| Ali >C12-C16 $(w)_A^{\#}$ | <5 | <5 | <5 | <5 | <5 | | | µg/l | 5 | A-T-055w |
| Ali >C16-C21 $(w)_A^{\#}$ | <5 | <5 | <5 | <5 | <5 | | | µg/l | 5 | A-T-055w |
| Ali >C21-C35 $(w)_A^{\#}$ | <5 | <5 | <5 | <5 | <5 | | | µg/l | 5 | A-T-055w |
| Ali >C35-C44 $(w)_A$ | <5 | <5 | <5 | <5 | <5 | | | µg/l | 5 | A-T-055w |
| Total Aliphatics $(w)_A$ | <5 | <5 | <5 | <5 | <5 | | | µg/l | 5 | A-T-055w |
| Aro >C5-C7 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-022w |
| Aro >C7-C8 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-022w |
| Aro >C8-C10 $(w)_A$ | <5 | <5 | <5 | <5 | 6 | | | µg/l | 5 | A-T-055w |
| Aro >C10-C12 $(w)_A^{\#}$ | <5 | <5 | <5 | <5 | 7 | | | µg/l | 5 | A-T-055w |
| Aro >C12-C16 $(w)_A^{\#}$ | <5 | <5 | <5 | <5 | 8 | | | µg/l | 5 | A-T-055w |
| Aro >C16-C21 $(w)_A^{\#}$ | 8 | 8 | 10 | 15 | 13 | | | µg/l | 5 | A-T-055w |
| Aro >C21-C35 $(w)_A$ | <10 | <10 | <10 | <10 | <10 | | | µg/l | 10 | A-T-055w |
| Aro >C35-C44 $(w)_A$ | <5 | <5 | <5 | <5 | <5 | | | µg/l | 5 | A-T-055w |
| Total Aromatics $(w)_A$ | <10 | <10 | 10 | 15 | 34 | | | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) $(w)_A$ | <10 | <10 | 10 | 15 | 34 | | | µg/l | 10 | A-T-055w |
| BTEX - Benzene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-022w |
| BTEX - Toluene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-022w |
| BTEX - o Xylene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-022w |
| MTBE $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | | | µg/l | 1 | A-T-022w |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

**Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

**Key:**

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF

**Clients Project No:** 326R

**Project No:** 22/03772

**Date Received:** 20/04/2022 (am)

**Cool Box Temperatures (°C):** 10.7 - 11.2

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 |
|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 |
| Client Sample ID/Depth | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon |
| Date Sampled | 13/04/22 | 13/04/22 | 13/04/22 | 13/04/22 | 13/04/22 |
| Deviation Code | | | | | |
| F | ✓ | ✓ | ✓ | ✓ | ✓ |

*Key*
*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 |
|---|---|---|---|---|---|
| Client Sample No | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 |
| Client Sample ID/Depth | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon |
| Date Sampled | 13/04/22 | 13/04/22 | 13/04/22 | 13/04/22 | 13/04/22 |
| Acid Herbicides Suite 3+ (w) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Pyrethroids (x6) (w) | ✓ | ✓ | ✓ | ✓ | ✓ |
| BOD (settled, 5 day) | ✓ | ✓ | ✓ | ✓ | ✓ |

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/03772/1 | 22/03772/2 | 22/03772/3 | 22/03772/4 | 22/03772/5 |
|---|---|---|---|---|---|
| **Client Sample No** | 326R.SWS01.EW04 | 326R.SWS02.EW04 | 326R.SWS03.EW04 | 326R.LP01.EW01 | 326R.Orange Lagoon.EW02 |
| **Client Sample ID/Depth** | SWS01 | SWS02 | SWS03 | LEAKING PIPE01 | Orange Lagoon |
| **Date Sampled** | 13/04/22 | 13/04/22 | 13/04/22 | 13/04/22 | 13/04/22 |
| A-T-004w | 25/04/2022 | 25/04/2022 | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-006w | 25/04/2022 | 25/04/2022 | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-019w | 25/04/2022 | 25/04/2022 | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-022w | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 |
| A-T-025w | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 |
| A-T-026w | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 |
| A-T-031w | 21/04/2022 | 21/04/2022 | 21/04/2022 | 21/04/2022 | 21/04/2022 |
| A-T-032w | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 |
| A-T-033w | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 |
| A-T-034w | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 |
| A-T-036w | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 |
| A-T-040w | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 |
| A-T-041w | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 |
| A-T-042wCCN | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 |
| A-T-042wFCN | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 |
| A-T-042wTCN | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 |
| A-T-048 | 25/04/2022 | 25/04/2022 | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-049w | 25/04/2022 | 25/04/2022 | 25/04/2022 | 25/04/2022 | 25/04/2022 |
| A-T-050w | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 | 22/04/2022 |
| A-T-052w | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 |
| A-T-055w | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 | 26/04/2022 |
| A-T-056w | 27/04/2022 | 27/04/2022 | 27/04/2022 | 27/04/2022 | 27/04/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/04083
**Issue Number:** 1 **Date:** 05 May, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Mailing list 1/Mailing list 2
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 25/04/22
**Date Instructions Received:** 27/04/22
**Date Analysis Completed:** 05/05/22

**Approved by:**



Sophie France
Client Service Manager

**Envirolab Job Number: 22/04083**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04083/1 | 22/04083/2 | 22/04083/3 | 22/04083/4 | 22/04083/5 | 22/04083/6 | 22/04083/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034016 | WA1034018 | WA1034019 | WA1034021 | WA1034023 | WA1034024 | WA1034025 | | | |
| Client Sample ID | Soil Sample 02 | Soil Sample 04 | Soil Sample 05 | Soil Sample 07 | Soil Sample 09 | Soil Sample 10 | Soil Sample 11 | | | |
| Depth to Top | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Depth To Bottom | 0.20 | 0.20 | 0.20 | 0.10 | 0.10 | 0.10 | 0.10 | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil | Solid | Soil | Soil | Soil | Soil | Soil | | | |
| Sample Matrix Code | 4AB | 7 | 2AE | 4AE | 4AE | 4A | 6ADE | | | |
| % Stones >10mm$_A$ | 17.3 | <0.1 | <0.1 | <0.1 | 12.1 | 37.6 | <0.1 | % w/w | 0.1 | A-T-044 |
| pH$_D$[M#] | 8.79 | 8.37 | 7.00 | 8.05 | 8.16 | 7.12 | 8.05 | pH | 0.01 | A-T-031s |
| Cyanide (total)$_A$[M#] | <1 | <1 | 1 | <1 | <1 | <1 | <1 | mg/kg | 1 | A-T-042sTCN |
| Phenols - Total by HPLC$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | mg/kg | 0.2 | A-T-050s |
| Total Organic Carbon$_D$[M#] | 1.74 | 3.43 | 26.2 | NDP | 5.83 | 12.3 | 2.49 | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | 14 | <5 | 41 | 35 | <5 | 19 | 5 | mg/kg | 5 | A-T-024s |
| Arsenic$_D$[M#] | 3 | 8 | 36 | 6 | 4 | 45 | 6 | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | 0.7 | 0.7 | 1.1 | 0.5 | 0.6 | 0.8 | 1.1 | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | <1.0 | <1.0 | 3.5 | 1.3 | <1.0 | <1.0 | <1.0 | mg/kg | 1 | A-T-027s |
| Cadmium$_D$[M#] | 1.0 | 1.2 | 5.5 | 1.1 | 1.8 | 3.8 | 1.4 | mg/kg | 0.5 | A-T-024s |
| Copper$_D$[M#] | 25 | 79 | 626 | 41 | 145 | 744 | 39 | mg/kg | 1 | A-T-024s |
| Chromium$_D$[M#] | 31 | 29 | 40 | 21 | 27 | 24 | 24 | mg/kg | 1 | A-T-024s |
| Lead$_D$[M#] | 44 | 237 | 683 | 172 | 75 | 356 | 154 | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | 1.05 | 1.01 | 0.27 | 0.88 | 1.47 | 2.09 | 1.14 | mg/kg | 0.17 | A-T-024s |
| Nickel$_D$[M#] | 27 | 21 | 38 | 14 | 22 | 34 | 14 | mg/kg | 1 | A-T-024s |
| Selenium$_D$[M#] | <1 | <1 | 10 | <1 | <1 | 1 | <1 | mg/kg | 1 | A-T-024s |
| Vanadium$_D$[M#] | 27 | 27 | 49 | 23 | 40 | 40 | 21 | mg/kg | 1 | A-T-024s |
| Zinc$_D$[M#] | 79 | 206 | 988 | 169 | 933 | 228 | 139 | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/04083**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04083/1 | 22/04083/2 | 22/04083/3 | 22/04083/4 | 22/04083/5 | 22/04083/6 | 22/04083/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034016 | WA1034018 | WA1034019 | WA1034021 | WA1034023 | WA1034024 | WA1034025 | | | |
| Client Sample ID | Soil Sample 02 | Soil Sample 04 | Soil Sample 05 | Soil Sample 07 | Soil Sample 09 | Soil Sample 10 | Soil Sample 11 | | | |
| Depth to Top | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| Depth To Bottom | 0.20 | 0.20 | 0.20 | 0.10 | 0.10 | 0.10 | 0.10 | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil | Solid | Soil | Soil | Soil | Soil | Soil | | | |
| Sample Matrix Code | 4AB | 7 | 2AE | 4AE | 4AE | 4A | 6ADE | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | NAD | NAD | NAD | Chrysotile | NAD | NAD | NAD | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | - | - | - | - | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | Loose fibres | - | - | - | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | A-T-045 |
| | | | | | | | | | | |
| **Asbestos in Soil Quantification % (Hand Picking & Weighing)** | | | | | | | | | | |
| Asbestos in soil % composition (hand picking and weighing)$_{D}$ | - | - | - | <0.001 | - | - | - | % w/w | 0.001 | A-T-054 |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.
Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/04083

**Date Received:** 27/04/2022 (am)

**Cool Box Temperatures (°C):** 17.6

| **Lab Sample ID** | 22/04083/1 | 22/04083/2 | 22/04083/3 | 22/04083/4 | 22/04083/5 | 22/04083/6 | 22/04083/7 |
|---|---|---|---|---|---|---|---|
| **Client Sample No** | WA1034016 | WA1034018 | WA1034019 | WA1034021 | WA1034023 | WA1034024 | WA1034025 |
| **Client Sample ID/Depth** | Soil Sample 02 0.00-0.20m | Soil Sample 04 0.00-0.20m | Soil Sample 05 0.00-0.20m | Soil Sample 07 0.00-0.10m | Soil Sample 09 0.00-0.10m | Soil Sample 10 0.00-0.10m | Soil Sample 11 0.00-0.10m |
| **Date Sampled** | | | | | | | |
| **Deviation Code** | | | | | | | |
| E (no date) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

*Key*
*E (no date)* *No sampling date provided (all results affected if not provided)*

*If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.*

# Envirolab Analysis Dates

| Lab Sample ID | 22/04083/1 | 22/04083/2 | 22/04083/3 | 22/04083/4 | 22/04083/5 | 22/04083/6 | 22/04083/7 |
|---|---|---|---|---|---|---|---|
| Client Sample No | WA1034016 | WA1034018 | WA1034019 | WA1034021 | WA1034023 | WA1034024 | WA1034025 |
| Client Sample ID/Depth | Soil Sample 02 0.00-0.20m | Soil Sample 04 0.00-0.20m | Soil Sample 05 0.00-0.20m | Soil Sample 07 0.00-0.10m | Soil Sample 09 0.00-0.10m | Soil Sample 10 0.00-0.10m | Soil Sample 11 0.00-0.10m |
| Date Sampled | | | | | | | |
| A-T-004s | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 |
| A-T-007s | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 |
| A-T-019s | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 |
| A-T-022s | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 |
| A-T-024s | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 |
| A-T-025w | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 |
| A-T-026w | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 |
| A-T-027s | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 |
| A-T-031s | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 |
| A-T-031w | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 |
| A-T-032s | 04/05/2022 | 04/05/2022 | 04/05/2022 | 05/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 |
| A-T-032w | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 |
| A-T-037w | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 |
| A-T-042sTCN | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 |
| A-T-044 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 |
| A-T-045 | 29/04/2022 | 29/04/2022 | 29/04/2022 | 29/04/2022 | 29/04/2022 | 29/04/2022 | 29/04/2022 |
| A-T-050s | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 |
| A-T-050w | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 |
| A-T-054 | | | | 03/05/2022 | | | |
| Calc-no stones | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 |
| Probe (w) | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | |
|---|---|
| Envirolab Job Number: | 22/04083 |
| Issue Number: | 1 |
| Date: | 5-May-22 |

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK, WA5 7ZT

| | |
|---|---|
| Project Manager: | Mailing list 1/Mailing list 2 |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project Ref: | 326R |
| Order No: | RIT 262 915 759 |
| Date Samples Received: | 25-Apr-22 |
| Date Instructions Received: | 27-Apr-22 |
| Date Analysis Completed: | 5-May-22 |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Sophie France
Client Service Manager

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04083/1 | | | | |
| Client Sample Number | | | | WA1034016 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | Soil Sample 02 | | | | |
| Depth to Top | | | | 0 | | | | |
| Depth to Bottom | | | | 0.20 | | | | |
| Date Sampled | | | | | | | | |
| Sample Type | | | | Soil | | | | |
| Sample Matrix Code | | | | 4AB | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | **8.79** | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **1.74** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **3.63** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **25** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** mg/l | **10:1** mg/kg | **Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.055 | **0.550** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.001 | **0.010** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.006 | **0.060** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | <0.001 | **<0.01** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.003 | **0.030** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.004 | **0.040** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 11 | **114** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | <0.10 | **<1** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 321 | **3215** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 348 | **3480** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.1 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 695 | | | | |
| Mass Sample (kg) | | | | 0.192 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 91.3 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04083/2 | | | | |
| Client Sample Number | | | | WA1034018 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | Soil Sample 04 | | | | |
| Depth to Top | | | | 0 | | | | |
| Depth to Bottom | | | | 0.20 | | | | |
| Date Sampled | | | | | | | | |
| Sample Type | | | | Solid | | | | |
| Sample Matrix Code | | | | 7 | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | **8.37** | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **3.43** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **<0.16** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **52** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.014** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1 mg/l** | **10:1 mg/kg** | **Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.018 | **0.180** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.072 | **0.720** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.022 | **0.220** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.002 | **0.020** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.050 | **0.500** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.002 | **0.020** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.028 | **0.280** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 11 | **110** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | <0.10 | **<1** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | <1.00 | **<10** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 156 | **1560** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | 45.90 | **459** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.4 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 312 | | | | |
| Mass Sample (kg) | | | | 0.258 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 68 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04083/3 | | | | |
| Client Sample Number | | | | WA1034019 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | Soil Sample 05 | | | | |
| Depth to Top | | | | 0 | | | | |
| Depth to Bottom | | | | 0.20 | | | | |
| Date Sampled | | | | | | | | |
| Sample Type | | | | Soil | | | | |
| Sample Matrix Code | | | | 2AE | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | **7.00** | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **26.2** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **220** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **158** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.014** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1 mg/l** | **10:1 mg/kg** | **Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.064 | **0.640** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.093 | **0.930** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.005 | **0.050** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.042 | **0.420** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.007 | **0.070** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.268 | **2.680** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 17 | **172** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.3 | **3.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 21 | **214** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 90 | **900** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | 47.10 | **471** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.0 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 180 | | | | |
| Mass Sample (kg) | | | | 0.272 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 64.3 | | | | |

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| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04083/4 | | | | |
| Client Sample Number | | | | WA1034021 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | Soil Sample 07 | | | | |
| Depth to Top | | | | 0 | | | | |
| Depth to Bottom | | | | 0.10 | | | | |
| Date Sampled | | | | | | | | |
| Sample Type | | | | Soil | | | | |
| Sample Matrix Code | | | | 4AE | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | **8.05** | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **NDP** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **9.3** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **35** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1 mg/l** | **10:1 mg/kg** | **Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.076 | **0.760** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.005 | **0.050** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.004 | **0.040** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.004 | **0.040** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.001 | **0.010** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.008 | **0.080** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.004 | **0.040** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 12 | **115** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | <0.10 | **<1** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 1530 | **15300** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 1173 | **11730** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.1 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 2346 | | | | |
| Mass Sample (kg) | | | | 0.2 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 87.5 | | | | |

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| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04083/5 | | | | |
| Client Sample Number | | | | WA1034023 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | Soil Sample 09 | | | | |
| Depth to Top | | | | 0 | | | | |
| Depth to Bottom | | | | 0.10 | | | | |
| Date Sampled | | | | | | | | |
| Sample Type | | | | Soil | | | | |
| Sample Matrix Code | | | | 4AE | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | **8.16** | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **5.83** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **187** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **786** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **0.012** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1 mg/l** | **10:1 mg/kg** | **Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.039 | **0.390** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.015 | **0.150** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | <0.001 | **<0.01** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.006 | **0.060** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.003 | **0.030** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.131 | **1.310** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 2 | **24** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | <0.10 | **<1** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 10 | **95** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 60 | **600** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.8 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 120 | | | | |
| Mass Sample (kg) | | | | 0.191 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 91.5 | | | | |

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| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04083/6 | | | | |
| Client Sample Number | | | | WA1034024 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | Soil Sample 10 | | | | |
| Depth to Top | | | | 0 | | | | |
| Depth to Bottom | | | | 0.10 | | | | |
| Date Sampled | | | | | | | | |
| Sample Type | | | | Soil | | | | |
| Sample Matrix Code | | | | 4A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | **7.12** | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **12.3** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **2.03** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **152** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1 mg/l** | **10:1 mg/kg** | **Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.081 | **0.810** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.031 | **0.310** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.004 | **0.040** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.004 | **0.040** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.003 | **0.030** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.018 | **0.180** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | <1.00 | **<10** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.3 | **3.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 269 | **2695** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 320 | **3200** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | 27.30 | **273** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.4 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 639 | | | | |
| Mass Sample (kg) | | | | 0.21 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 83.3 | | | | |

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| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04083/7 | | | | |
| Client Sample Number | | | | WA1034025 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | Soil Sample 11 | | | | |
| Depth to Top | | | | 0 | | | | |
| Depth to Bottom | | | | 0.10 | | | | |
| Date Sampled | | | | | | | | |
| Sample Type | | | | Soil | | | | |
| Sample Matrix Code | | | | 6ADE | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | **8.05** | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **2.49** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg)$_A$ | A-T-019 | N | N | **4.19** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **269** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1 mg/l** | **10:1 mg/kg** | **Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.072 | **0.720** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.003 | **0.030** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.002 | **0.020** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.004 | **0.040** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.001 | **0.010** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.011 | **0.110** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.007 | **0.070** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 12 | **119** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | <0.10 | **<1** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 1520 | **15200** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 1171 | **11710** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.5 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 2341 | | | | |
| Mass Sample (kg) | | | | 0.21 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 83.3 | | | | |

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/04113
**Issue Number:** 1 **Date:** 13 May, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** 326R / 325N-03
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 13/04/22
**Date Instructions Received:** 28/04/22
**Date Analysis Completed:** 13/05/22

**Approved by:**



Sophie France
Client Service Manager

**Envirolab Job Number: 22/04113**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH326.ES01 | 326R.BH326.ES03 | 326R.BH327.ES02 | 326R.BH327.ES07 | 326R.BH328.ES01 | 326R.BH328.ES02 | | | | |
| Client Sample ID | BH326 | BH326 | BH327 | BH327 | BH328 | BH328 | | | | |
| Depth to Top | 1.40 | 3.40 | 2.40 | 7.40 | 1.40 | 2.40 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | | | | |
| Sample Type | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4A | 7 | 4AB | 6A | 4A | 4A | | | | |
| % Stones >10mm$_A$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | % w/w | 0.1 | A-T-044 |
| pH$_D$$^{M\#}$ | 8.28 | - | - | 6.75 | - | 7.01 | | pH | 0.01 | A-T-031s |
| Cyanide (total)$_A$$^{M\#}$ | <1 | - | - | 4 | - | <1 | | mg/kg | 1 | A-T-042sTCN |
| Phenols - Total by HPLC$_A$ | <0.2 | - | - | <0.2 | - | <0.2 | | mg/kg | 0.2 | A-T-050s |
| Total Organic Carbon$_D$$^{M\#}$ | 14.8 | 18.2 | 38 | 9.67 | 15.3 | 40.6 | | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | 6 | - | - | 9 | - | 5 | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$$^{M\#}$ | 16 | - | - | 42 | - | 59 | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | 3.6 | - | - | 2.4 | - | 1.5 | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | <1.0 | - | - | <1.0 | - | <1.0 | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$$^{M\#}$ | 3.3 | - | - | 5.0 | - | 3.9 | | mg/kg | 0.5 | A-T-024s |
| Copper$_D$$^{M\#}$ | 179 | - | - | 460 | - | 158 | | mg/kg | 1 | A-T-024s |
| Chromium$_D$$^{M\#}$ | 24 | - | - | 25 | - | 20 | | mg/kg | 1 | A-T-024s |
| Lead$_D$$^{M\#}$ | 109 | - | - | 1020 | - | 173 | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | 0.42 | - | - | 1.36 | - | <0.17 | | mg/kg | 0.17 | A-T-024s |
| Nickel$_D$$^{M\#}$ | 48 | - | - | 46 | - | 29 | | mg/kg | 1 | A-T-024s |
| Selenium$_D$$^{M\#}$ | <1 | - | - | 2 | - | 2 | | mg/kg | 1 | A-T-024s |
| Vanadium$_D$$^{M\#}$ | 46 | - | - | 56 | - | 52 | | mg/kg | 1 | A-T-024s |
| Zinc$_D$$^{M\#}$ | 117 | - | - | 908 | - | 264 | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/04113**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH326.ES01 | 326R.BH326.ES03 | 326R.BH327.ES02 | 326R.BH327.ES07 | 326R.BH328.ES01 | 326R.BH328.ES02 | | | | |
| Client Sample ID | BH326 | BH326 | BH327 | BH327 | BH328 | BH328 | | | | |
| Depth to Top | 1.40 | 3.40 | 2.40 | 7.40 | 1.40 | 2.40 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | | | | |
| Sample Type | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4A | 7 | 4AB | 6A | 4A | 4A | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | NAD | - | - | NAD | - | NAD | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | - | - | - | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | - | - | - | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | N/A | - | - | N/A | - | N/A | | | | A-T-045 |

**Envirolab Job Number: 22/04113**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH326.ES01 | 326R.BH326.ES03 | 326R.BH327.ES02 | 326R.BH327.ES07 | 326R.BH328.ES01 | 326R.BH328.ES02 | | | | |
| Client Sample ID | BH326 | BH326 | BH327 | BH327 | BH328 | BH328 | | | | |
| Depth to Top | 1.40 | 3.40 | 2.40 | 7.40 | 1.40 | 2.40 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | | | | |
| Sample Type | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4A | 7 | 4AB | 6A | 4A | 4A | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | 0.01 | - | - | <0.01 | - | 0.10 | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | <0.01 | - | - | <0.01 | - | 0.04 | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | 0.05 | - | - | 0.05 | - | 0.16 | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | 0.08 | - | - | 0.11 | - | 0.29 | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | 0.09 | - | - | 0.12 | - | 0.20 | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | 0.13 | - | - | 0.12 | - | 0.29 | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | <0.05 | - | - | 0.08 | - | 0.11 | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | <0.07 | - | - | <0.07 | - | 0.09 | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | 0.13 | - | - | 0.13 | - | 0.36 | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | <0.04 | - | - | <0.04 | - | <0.04 | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | 0.22 | - | - | 0.31 | - | 0.79 | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | 0.02 | - | - | 0.01 | - | 0.09 | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | 0.06 | - | - | 0.08 | - | 0.11 | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | 0.28 | - | - | 0.08 | - | 1.97 | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | 0.31 | - | - | 0.31 | - | 1.52 | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | 0.22 | - | - | 0.35 | - | 0.80 | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | 1.60 | - | - | 1.75 | - | 6.92 | | mg/kg | 0.01 | A-T-019s |

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH326.ES01 | 326R.BH326.ES03 | 326R.BH327.ES02 | 326R.BH327.ES07 | 326R.BH328.ES01 | 326R.BH328.ES02 | | | | |
| Client Sample ID | BH326 | BH326 | BH327 | BH327 | BH328 | BH328 | | | | |
| Depth to Top | 1.40 | 3.40 | 2.40 | 7.40 | 1.40 | 2.40 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | | | | |
| Sample Type | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4A | 7 | 4AB | 6A | 4A | 4A | | | | |
| SVOC | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Hexachlorobenzene$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | - | - | - | <500 | - | - | | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Pentachlorophenol (SVOC)$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | - | - | - | <500 | - | - | | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | - | - | - | <800 | - | - | | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |

**Envirolab Job Number: 22/04113**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH326.ES01 | 326R.BH326.ES03 | 326R.BH327.ES02 | 326R.BH327.ES07 | 326R.BH328.ES01 | 326R.BH328.ES02 | | | | |
| Client Sample ID | BH326 | BH326 | BH327 | BH327 | BH328 | BH328 | | | | |
| Depth to Top | 1.40 | 3.40 | 2.40 | 7.40 | 1.40 | 2.40 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | | | | |
| Sample Type | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4A | 7 | 4AB | 6A | 4A | 4A | | | | |
| Isophorone$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Hexachloroethane$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | - | - | - | <100 | - | - | | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH326.ES01 | 326R.BH326.ES03 | 326R.BH327.ES02 | 326R.BH327.ES07 | 326R.BH328.ES01 | 326R.BH328.ES02 | | | | |
| Client Sample ID | BH326 | BH326 | BH327 | BH327 | BH328 | BH328 | | | | |
| Depth to Top | 1.40 | 3.40 | 2.40 | 7.40 | 1.40 | 2.40 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | | | | |
| Sample Type | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4A | 7 | 4AB | 6A | 4A | 4A | | | | |
| **VOC** | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Chloromethane$_{A}$ | - | - | - | <50 | - | - | | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Bromomethane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Chloroethane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Dichloromethane$_{A}$ | - | - | - | <25 | - | - | | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_{A}^{\#}$ | - | - | - | <25 | - | - | | µg/kg | 5 | A-T-006s |
| Chloroform$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_{A}^{\#}$ | - | - | - | <10 | - | - | | µg/kg | 2 | A-T-006s |
| Benzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Trichloroethene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Dibromomethane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_{A}^{\#}$ | - | - | - | <50 | - | - | | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Toluene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_{A}^{\#}$ | - | - | - | <15 | - | - | | µg/kg | 3 | A-T-006s |

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH326.ES01 | 326R.BH326.ES03 | 326R.BH327.ES02 | 326R.BH327.ES07 | 326R.BH328.ES01 | 326R.BH328.ES02 | | | | |
| Client Sample ID | BH326 | BH326 | BH327 | BH327 | BH328 | BH328 | | | | |
| Depth to Top | 1.40 | 3.40 | 2.40 | 7.40 | 1.40 | 2.40 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | | | | |
| Sample Type | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4A | 7 | 4AB | 6A | 4A | 4A | | | | |
| 1,2-Dibromoethane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Chlorobenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_{A}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| m & p Xylene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| o-Xylene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Styrene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Bromoform$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_{A}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| Bromobenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_{A}^{\#}$ | - | - | - | <10 | - | - | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_{A}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_{A}$ | - | - | - | <10 | - | - | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_{A}$ | - | - | - | <15 | - | - | | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_{A}^{\#}$ | - | - | - | <5 | - | - | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_{A}$ | - | - | - | <15 | - | - | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/04113**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH326.ES01 | 326R.BH326.ES03 | 326R.BH327.ES02 | 326R.BH327.ES07 | 326R.BH328.ES01 | 326R.BH328.ES02 | | | | |
| Client Sample ID | BH326 | BH326 | BH327 | BH327 | BH328 | BH328 | | | | |
| Depth to Top | 1.40 | 3.40 | 2.40 | 7.40 | 1.40 | 2.40 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | 11-Apr-22 | | | | |
| Sample Type | Soil - ES | Solid | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4A | 7 | 4AB | 6A | 4A | 4A | | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | 3 | - | - | 1 | - | 40 | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | 2 | - | - | <1 | - | 21 | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | 2 | - | - | <1 | - | 30 | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | 3 | - | - | <1 | - | 30 | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | 17 | - | - | 4 | - | 31 | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | 2 | - | - | <1 | - | 2 | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | 31 | - | - | 5 | - | 155 | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | 2 | - | - | <1 | - | 14 | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | 2 | - | - | <1 | - | 16 | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | 6 | - | - | 1 | - | 61 | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | 7 | - | - | 4 | - | 75 | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | 12 | - | - | 12 | - | 85 | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | <1 | - | - | <1 | - | 1 | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | 29 | - | - | 17 | - | 252 | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | 60 | - | - | 23 | - | 406 | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | <0.01 | - | - | <0.01 | - | <0.05 | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/04113

**Date Received:** 28/04/2022 (am)

**Cool Box Temperatures (°C):** 11.0, 11.3

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 |
|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH326 .ES01 | 326R.BH326 .ES03 | 326R.BH327 .ES02 | 326R.BH327 .ES07 | 326R.BH328 .ES01 | 326R.BH328 .ES02 |
| Client Sample ID/Depth | BH326 1.40m | BH326 3.40m | BH327 2.40m | BH327 7.40m | BH328 1.40m | BH328 2.40m |
| Date Sampled | 11/04/22 | 11/04/22 | 11/04/22 | 11/04/22 | 11/04/22 | 11/04/22 |
| Deviation Code | | | | | | |
| F | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

*Key*
*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 |
|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH326 .ES01 | 326R.BH326 .ES03 | 326R.BH327 .ES02 | 326R.BH327 .ES07 | 326R.BH328 .ES01 | 326R.BH328 .ES02 |
| Client Sample ID/Depth | BH326 1.40m | BH326 3.40m | BH327 2.40m | BH327 7.40m | BH328 1.40m | BH328 2.40m |
| Date Sampled | 11/04/22 | 11/04/22 | 11/04/22 | 11/04/22 | 11/04/22 | 11/04/22 |
| Cyanide (total) | ✓ | | | ✓ | | ✓ |
| Total Organic Carbon | ✓ | | ✓ | ✓ | ✓ | ✓ |
| VPHCWG | ✓ | | | ✓ | | ✓ |
| PAH-16MS | ✓ | | | ✓ | | ✓ |
| PAH (total 17) | | ✓ | ✓ | | ✓ | |
| BTEX (total) | | ✓ | ✓ | | ✓ | |
| VOC | | | | ✓ | | |
| SVOC | | | | ✓ | | |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3,

ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/04113/1 | 22/04113/3 | 22/04113/7 | 22/04113/12 | 22/04113/13 | 22/04113/14 |
|---|---|---|---|---|---|---|
| **Client Sample No** | 326R.BH326 .ES01 | 326R.BH326 .ES03 | 326R.BH327 .ES02 | 326R.BH327 .ES07 | 326R.BH328 .ES01 | 326R.BH328 .ES02 |
| **Client Sample ID/Depth** | BH326 1.40m | BH326 3.40m | BH327 2.40m | BH327 7.40m | BH328 1.40m | BH328 2.40m |
| **Date Sampled** | 11/04/22 | 11/04/22 | 11/04/22 | 11/04/22 | 11/04/22 | 11/04/22 |
| A-T-004s | | 11/05/2022 | 11/05/2022 | | 11/05/2022 | |
| A-T-006s | | | | 11/05/2022 | | |
| A-T-007s | | 10/05/2022 | 10/05/2022 | | 10/05/2022 | |
| A-T-019s | 11/05/2022 | 11/05/2022 | 11/05/2022 | 11/05/2022 | 11/05/2022 | 11/05/2022 |
| A-T-022s | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 13/05/2022 |
| A-T-024s | 10/05/2022 | | | 10/05/2022 | | 10/05/2022 |
| A-T-025w | | 12/05/2022 | 12/05/2022 | | 12/05/2022 | |
| A-T-026w | | 12/05/2022 | 12/05/2022 | | 12/05/2022 | |
| A-T-027s | 10/05/2022 | | | 10/05/2022 | | 10/05/2022 |
| A-T-031s | 10/05/2022 | | | 10/05/2022 | | 10/05/2022 |
| A-T-031w | | 12/05/2022 | 12/05/2022 | | 12/05/2022 | |
| A-T-032s | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 |
| A-T-032w | | 12/05/2022 | 12/05/2022 | | 12/05/2022 | |
| A-T-037w | | 12/05/2022 | 12/05/2022 | | 12/05/2022 | |
| A-T-042sTCN | 11/05/2022 | | | 11/05/2022 | | 11/05/2022 |
| A-T-044 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 |
| A-T-045 | 05/05/2022 | | | 05/05/2022 | | 05/05/2022 |
| A-T-050s | 10/05/2022 | | | 10/05/2022 | | 10/05/2022 |
| A-T-050w | | 12/05/2022 | 12/05/2022 | | 12/05/2022 | |
| A-T-052s | | | | 11/05/2022 | | |
| A-T-055s | 10/05/2022 | | | 10/05/2022 | | 13/05/2022 |
| Calc-no stones | | 12/05/2022 | 12/05/2022 | | 12/05/2022 | |
| Probe (w) | | 12/05/2022 | 12/05/2022 | | 12/05/2022 | |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | | | |
|---|---|---|---|
| Envirolab Job Number: | 22/04113 | | |
| Issue Number: | 1 | Date: | 13-May-22 |
| Client: | BAM Ritchies Warrington<br>Unit 5<br>Taurus Park<br>Europa Boulevard<br>Warrington<br>UK, WA5 7ZT | | |
| Project Manager: | 326R / 325N-03 | | |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works | | |
| Project Ref: | 326R | | |
| Order No: | RIT 262 915 759 | | |
| Date Samples Received: | 13-Apr-22 | | |
| Date Instructions Received: | 28-Apr-22 | | |
| Date Analysis Completed: | 13-May-22 | | |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

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Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Danielle Brierley
Deputy Client Services Supervisor

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04113/3 | | | | |
| Client Sample Number | | | | 326R.BH326.ES03 | | | | |
| Client Sample ID | | | | BH326 | | | | |
| Depth to Top | | | | 3.4 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 11/04/2022 | | | | |
| Sample Type | | | | Solid | | | | |
| Sample Matrix Code | | | | 7 | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **18.2** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **1.12** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **<10** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.010 | **0.100** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.007 | **0.070** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.005 | **0.050** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.002 | **0.020** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.166 | **1.660** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.002 | **0.020** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.004 | **0.040** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 1 | **11** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.4 | **4.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 31 | **308** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 48 | **480** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 6.9 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 96 | | | | |
| Mass Sample (kg) | | | | 0.22 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 79.4 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04113/7 | | | | |
| Client Sample Number | | | | 326R.BH327.ES02 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH327 | | | | |
| Depth to Top | | | | 2.4 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 11/04/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4AB | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **38** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **1.81** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **<40** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.065 | **0.650** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.031 | **0.310** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.045 | **0.450** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.016 | **0.160** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | <0.001 | **<0.01** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.621 | **6.210** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | <1.00 | **<10** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.2 | **2.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 54 | **543** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 75 | **750** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 4.3 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 151 | | | | |
| Mass Sample (kg) | | | | 0.223 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 78.4 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04113/13 | | | | |
| Client Sample Number | | | | 326R.BH328.ES01 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH328 | | | | |
| Depth to Top | | | | 1.4 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 11/04/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **15.3** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **12.3** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **222** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.004 | **0.040** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.118 | **1.180** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.003 | **0.030** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.152 | **1.520** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.004 | **0.040** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.487 | **4.870** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.002 | **0.020** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.347 | **3.470** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 10 | **102** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.7 | **7.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 11 | **107** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 25 | **250** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 5.8 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 51 | | | | |
| Mass Sample (kg) | | | | 0.221 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 79.2 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/04117
**Issue Number:** 1 **Date:** 13 May, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Mailing list 1/Mailing list 2
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 12/04/22
**Date Instructions Received:** 28/04/22
**Date Analysis Completed:** 12/05/22

**Approved by:**



Sophie France
Client Service Manager

**Envirolab Job Number: 22/04117**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH301C | BH301D | BH301D | | | | | | | |
| Depth to Top | 1.70 | 2.00 | 2.90 | | | | | | | |
| Depth To Bottom | | | 3.00 | | | | | | | |
| Date Sampled | 10-Apr-22 | 10-Apr-22 | 10-Apr-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 6AB | 5A | 5A | | | | | | | |
| % Stones >10mm$_A$ | <0.1 | <0.1 | <0.1 | | | | | % w/w | 0.1 | A-T-044 |
| pH$_D$$^{M\#}$ | 8.41 | - | 8.31 | | | | | pH | 0.01 | A-T-031s |
| Cyanide (total)$_A$$^{M\#}$ | <1 | - | <1 | | | | | mg/kg | 1 | A-T-042sTCN |
| Thiocyanate$_A$ | <5 | - | <5 | | | | | mg/kg | 5 | A-T-041s |
| Phenols - Total by HPLC$_A$ | <0.2 | - | <0.2 | | | | | mg/kg | 0.2 | A-T-050s |
| Total Organic Carbon$_D$$^{M\#}$ | 1.57 | 2.23 | 1.51 | | | | | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | <5 | - | <5 | | | | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$$^{M\#}$ | 9 | - | 7 | | | | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | 1.1 | - | 0.6 | | | | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | <1.0 | - | <1.0 | | | | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$$^{M\#}$ | 1.3 | - | 0.8 | | | | | mg/kg | 0.5 | A-T-024s |
| Cobalt$_D$$^{M\#}$ | 9 | - | 5 | | | | | mg/kg | 1 | A-T-024s |
| Copper$_D$$^{M\#}$ | 49 | - | 25 | | | | | mg/kg | 1 | A-T-024s |
| Chromium$_D$$^{M\#}$ | 20 | - | 11 | | | | | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | - | - | <1 | | | | | mg/kg | 1 | A-T-040s |
| Lead$_D$$^{M\#}$ | 99 | - | 110 | | | | | mg/kg | 1 | A-T-024s |
| Manganese$_D$$^{M\#}$ | 471 | - | 245 | | | | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | 0.37 | - | 0.18 | | | | | mg/kg | 0.17 | A-T-024s |
| Nickel$_D$$^{M\#}$ | 24 | - | 13 | | | | | mg/kg | 1 | A-T-024s |
| Selenium$_D$$^{M\#}$ | <1 | - | <1 | | | | | mg/kg | 1 | A-T-024s |
| Vanadium$_D$$^{M\#}$ | 26 | - | 16 | | | | | mg/kg | 1 | A-T-024s |
| Zinc$_D$$^{M\#}$ | 68 | - | 35 | | | | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/04117**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH301C | BH301D | BH301D | | | | | | | |
| Depth to Top | 1.70 | 2.00 | 2.90 | | | | | | | |
| Depth To Bottom | | | 3.00 | | | | | | | |
| Date Sampled | 10-Apr-22 | 10-Apr-22 | 10-Apr-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 6AB | 5A | 5A | | | | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | NAD | - | NAD | | | | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | | | | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | | | | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | N/A | - | N/A | | | | | | | A-T-045 |

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH301C | BH301D | BH301D | | | | | | | |
| Depth to Top | 1.70 | 2.00 | 2.90 | | | | | | | |
| Depth To Bottom | | | 3.00 | | | | | | | |
| Date Sampled | 10-Apr-22 | 10-Apr-22 | 10-Apr-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 6AB | 5A | 5A | | | | | | | |
| PAH-16MS | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | 0.02 | - | 0.10 | | | | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | <0.01 | - | 1.67 | | | | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | 0.06 | - | 0.54 | | | | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | 0.09 | - | 0.41 | | | | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | 0.06 | - | 4.66 | | | | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | 0.07 | - | 2.38 | | | | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | <0.05 | - | 3.76 | | | | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | <0.07 | - | 0.66 | | | | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | 0.11 | - | 0.72 | | | | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | <0.04 | - | 0.47 | | | | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | 0.27 | - | 0.50 | | | | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | 0.04 | - | 0.13 | | | | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | <0.03 | - | 2.62 | | | | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | <0.03 | - | 2.86 | | | | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | 0.40 | - | 1.00 | | | | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | 0.28 | - | 1.15 | | | | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | 1.40 | - | 23.6 | | | | | mg/kg | 0.01 | A-T-019s |

Envirolab Job Number: 22/04117

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH301C | BH301D | BH301D | | | | | | | |
| Depth to Top | 1.70 | 2.00 | 2.90 | | | | | | | |
| Depth To Bottom | | | 3.00 | | | | | | | |
| Date Sampled | 10-Apr-22 | 10-Apr-22 | 10-Apr-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 6AB | 5A | 5A | | | | | | | |
| **Speciated PCB-WHO12** | | | | | | | | | | |
| PCB BZ 81$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 105$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 114$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 118$_{A}^{M\#}$ | - | - | <0.007 | | | | | mg/kg | 0.007 | A-T-004s |
| PCB BZ 123$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 126$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 156$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 157$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 167$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 169$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 189$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 77$_{A}^{M\#}$ | - | - | <0.005 | | | | | mg/kg | 0.005 | A-T-004s |
| Total Speciated PCB-WHO12$_{A}^{M\#}$ | - | - | <0.007 | | | | | mg/kg | 0.005 | A-T-004s |

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH301C | BH301D | BH301D | | | | | | | |
| Depth to Top | 1.70 | 2.00 | 2.90 | | | | | | | |
| Depth To Bottom | | | 3.00 | | | | | | | |
| Date Sampled | 10-Apr-22 | 10-Apr-22 | 10-Apr-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 6AB | 5A | 5A | | | | | | | |
| SVOC | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Hexachlorobenzene$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | - | - | <500 | | | | | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | - | - | 1130 | | | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Pentachlorophenol (SVOC)$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | - | - | <500 | | | | | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Isophorone$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |

Envirolab Job Number: 22/04117

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH301C | BH301D | BH301D | | | | | | | |
| Depth to Top | 1.70 | 2.00 | 2.90 | | | | | | | |
| Depth To Bottom | | | 3.00 | | | | | | | |
| Date Sampled | 10-Apr-22 | 10-Apr-22 | 10-Apr-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 6AB | 5A | 5A | | | | | | | |
| Hexachloroethane$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | - | - | <100 | | | | | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | - | - | 209 | | | | | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH301C | BH301D | BH301D | | | | | | | |
| Depth to Top | 1.70 | 2.00 | 2.90 | | | | | | | |
| Depth To Bottom | | | 3.00 | | | | | | | |
| Date Sampled | 10-Apr-22 | 10-Apr-22 | 10-Apr-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 6AB | 5A | 5A | | | | | | | |
| VOC | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Chloromethane$_{A}$ | - | - | <50 | | | | | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Bromomethane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Chloroethane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Dichloromethane$_{A}$ | - | - | <25 | | | | | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_{A}^{\#}$ | - | - | <25 | | | | | µg/kg | 5 | A-T-006s |
| Chloroform$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_{A}^{\#}$ | - | - | <10 | | | | | µg/kg | 2 | A-T-006s |
| Benzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Trichloroethene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Dibromomethane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_{A}^{\#}$ | - | - | <50 | | | | | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Toluene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_{A}^{\#}$ | - | - | <15 | | | | | µg/kg | 3 | A-T-006s |
| 1,2-Dibromoethane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH301C | BH301D | BH301D | | | | | | | |
| Depth to Top | 1.70 | 2.00 | 2.90 | | | | | | | |
| Depth To Bottom | | | 3.00 | | | | | | | |
| Date Sampled | 10-Apr-22 | 10-Apr-22 | 10-Apr-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 6AB | 5A | 5A | | | | | | | |
| Chlorobenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_{A}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| m & p Xylene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| o-Xylene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Styrene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Bromoform$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_{A}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| Bromobenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_{A}^{\#}$ | - | - | <10 | | | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_{A}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_{A}$ | - | - | <10 | | | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_{A}$ | - | - | <15 | | | | | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_{A}^{\#}$ | - | - | <5 | | | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_{A}$ | - | - | <15 | | | | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/04117**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH301C | BH301D | BH301D | | | | | | | |
| Depth to Top | 1.70 | 2.00 | 2.90 | | | | | | | |
| Depth To Bottom | | | 3.00 | | | | | | | |
| Date Sampled | 10-Apr-22 | 10-Apr-22 | 10-Apr-22 | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | | | | | | | |
| Sample Matrix Code | 6AB | 5A | 5A | | | | | | | |
| TPH UKCWG with Clean Up *C1 | | | | | | | | | | |
| Ali >C5-C6$_{A}^{\#}$ | <0.01 | - | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_{A}^{\#}$ | <0.01 | - | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_{A}$ | <1 | - | 1 | | | | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_{A}^{M\#}$ | <1 | - | 1 | | | | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_{A}^{M\#}$ | <1 | - | 6 | | | | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_{A}^{M\#}$ | <1 | - | 6 | | | | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_{A}^{M\#}$ | 2 | - | 5 | | | | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_{A}$ | <1 | - | 10 | | | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_{A}$ | 2 | - | 29 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_{A}^{\#}$ | <0.01 | - | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_{A}^{\#}$ | <0.01 | - | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_{A}$ | <1 | - | 4 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_{A}$ | <1 | - | 7 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_{A}$ | <1 | - | 25 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_{A}^{M\#}$ | 4 | - | 20 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_{A}$ | 12 | - | 104 | | | | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_{A}$ | <1 | - | 13 | | | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_{A}$ | 15 | - | 174 | | | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_{A}$ | 18 | - | 203 | | | | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_{A}^{\#}$ | <0.01 | - | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_{A}^{\#}$ | <0.01 | - | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_{A}^{\#}$ | <0.01 | - | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_{A}^{\#}$ | <0.01 | - | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_{A}^{\#}$ | <0.01 | - | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |
| MTBE$_{A}^{\#}$ | <0.01 | - | <0.01 | | | | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project No:** 22/04117

**Date Received:** 28/04/2022 (am)

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Cool Box Temperatures (°C):** 11.3

**Clients Project No:** 326R

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 |
|---|---|---|---|
| Client Sample No | | | |
| Client Sample ID/Depth | BH301C 1.70m | BH301D 2.00m | BH301D 2.90-3.00m |
| Date Sampled | 10/04/22 | 10/04/22 | 10/04/22 |
| Deviation Code | | | |
| F | ✓ | ✓ | ✓ |

*Key*

*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 |
|---|---|---|---|
| Client Sample No | | | |
| Client Sample ID/Depth | BH301C 1.70m | BH301D 2.00m | BH301D 2.90-3.00m |
| Date Sampled | 10/04/22 | 10/04/22 | 10/04/22 |
| Cyanide (total) | ✓ | | ✓ |
| Total Organic Carbon | ✓ | ✓ | ✓ |
| VPHCWG | ✓ | | ✓ |
| EPH UKCWG | ✓ | | ✓ |
| PAH-16MS | ✓ | | ✓ |
| Mineral Oil (>C10-C40) | | ✓ | |
| PAH (total 17) | | ✓ | |
| BTEX (total) | | ✓ | |
| VOC | | | ✓ |
| SVOC | | | ✓ |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/04117/2 | 22/04117/5 | 22/04117/6 |
|---|---|---|---|
| Client Sample No | | | |
| Client Sample ID/Depth | BH301C 1.70m | BH301D 2.00m | BH301D 2.90-3.00m |
| Date Sampled | 10/04/22 | 10/04/22 | 10/04/22 |
| A-T-004s | | 11/05/2022 | 11/05/2022 |
| A-T-006s | | | 11/05/2022 |
| A-T-007s | | 10/05/2022 | |
| A-T-019s | 11/05/2022 | 11/05/2022 | 11/05/2022 |
| A-T-022s | 10/05/2022 | 10/05/2022 | 10/05/2022 |
| A-T-024s | 12/05/2022 | | 12/05/2022 |
| A-T-025w | | 12/05/2022 | |
| A-T-026w | | 12/05/2022 | |
| A-T-027s | 12/05/2022 | | 12/05/2022 |
| A-T-031s | 12/05/2022 | | 12/05/2022 |
| A-T-031w | | 12/05/2022 | |
| A-T-032s | 11/05/2022 | 11/05/2022 | 11/05/2022 |
| A-T-032w | | 12/05/2022 | |
| A-T-037w | | 12/05/2022 | |
| A-T-040s | | | 12/05/2022 |
| A-T-041s | 11/05/2022 | | 11/05/2022 |
| A-T-042sTCN | 11/05/2022 | | 11/05/2022 |
| A-T-044 | 10/05/2022 | 10/05/2022 | 10/05/2022 |
| A-T-045 | 05/05/2022 | | 05/05/2022 |
| A-T-050s | 10/05/2022 | | 10/05/2022 |
| A-T-050w | | 12/05/2022 | |
| A-T-052s | | | 11/05/2022 |
| A-T-055s | 10/05/2022 | | 10/05/2022 |
| Calc-no stones | | 12/05/2022 | |
| Probe (w) | | 12/05/2022 | |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | | | |
|---|---|---|---|
| Envirolab Job Number: | 22/04117 | | |
| Issue Number: | 1 | Date: | 13-May-22 |

Client: BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK, WA5 7ZT

| | |
|---|---|
| Project Manager: | 326R / 325N-03 |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project Ref: | 326R |
| Order No: | RIT 262 915 759 |
| Date Samples Received: | 12-Apr-22 |
| Date Instructions Received: | 28-Apr-22 |
| Date Analysis Completed: | 12-May-22 |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

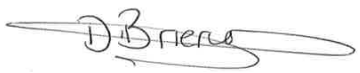
IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Danielle Brierley
Deputy Client Services Supervisor

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04117/5 | | | | |
| Client Sample Number | | | | | | | | |
| Client Sample ID | | | | BH301D | | | | |
| Depth to Top | | | | 2 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 10/04/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 5A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **2.23** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **412** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **350** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.024 | **0.240** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.001 | **0.010** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.007 | **0.070** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | <0.001 | **<0.01** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | <0.001 | **<0.01** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.002 | **0.020** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | <1.00 | **<10** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.7 | **7.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 8 | **79** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 60 | **600** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.3 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 120 | | | | |
| Mass Sample (kg) | | | | 0.21 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 83.3 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/04120
**Issue Number:** 1 **Date:** 23 May, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** 326R / 325N-03
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 11/04/22
**Date Instructions Received:** 28/04/22
**Date Analysis Completed:** 23/05/22

**Approved by:**



Sophie France
Client Service Manager

**Envirolab Job Number: 22/04120**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322.ES02 | 326R.BH322.ES03 | 326R.BH323.ES01 | 326R.BH323.ES02 | 326R.BH324.ES03 | 326R.BH324.ES07 | | | | |
| Client Sample ID | BH322 | BH322 | BH323 | BH323 | BH324 | BH324 | | | | |
| Depth to Top | 0.50 | 1.00 | 0.30 | 0.50 | 1.00 | 5.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 21-Mar-22 | 21-Mar-22 | 22-Mar-22 | 20-Mar-22 | 09-Apr-22 | 09-Apr-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 4AB | 4AE | 4ABE | 6A | 6A | | | | |
| % Stones >10mm$_A$ | <0.1 | <0.1 | <0.1 | <0.1 | 24.7 | <0.1 | | % w/w | 0.1 | A-T-044 |
| pH$_D$[M#] | - | - | - | 8.10 | 7.45 | - | | pH | 0.01 | A-T-031s |
| Cyanide (free)$_A$[M#] | - | - | - | <1 | - | - | | mg/kg | 1 | A-T-042sFCN |
| Cyanide (complex)$_A$ | - | - | - | 2 | - | - | | mg/kg | 1 | A-T-042sCCN |
| Cyanide (total)$_A$[M#] | - | - | - | 2 | <1 | - | | mg/kg | 1 | A-T-042sTCN |
| Thiocyanate$_A$ | - | - | - | <5 | - | - | | mg/kg | 5 | A-T-041s |
| Phenols - Total by HPLC$_A$ | - | - | - | <0.2 | <0.2 | - | | mg/kg | 0.2 | A-T-050s |
| Total Organic Carbon$_D$[M#] | - | 13.7 | 4.75 | NDP | 14.2 | 12.4 | | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | - | - | - | <5 | 11 | - | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$[M#] | - | - | - | 12 | 37 | - | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | - | - | - | 0.7 | 1.4 | - | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | - | - | - | <1.0 | <1.0 | - | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$[M#] | - | - | - | 3.0 | 2.5 | - | | mg/kg | 0.5 | A-T-024s |
| Copper$_D$[M#] | - | - | - | 148 | 142 | - | | mg/kg | 1 | A-T-024s |
| Chromium$_D$[M#] | - | - | - | 29 | 20 | - | | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | - | - | - | <1 | <1 | - | | mg/kg | 1 | A-T-040s |
| Lead$_D$[M#] | - | - | - | 162 | 320 | - | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | - | - | - | 0.51 | 0.99 | - | | mg/kg | 0.17 | A-T-024s |
| Nickel$_D$[M#] | - | - | - | 26 | 29 | - | | mg/kg | 1 | A-T-024s |
| Selenium$_D$[M#] | - | - | - | <1 | 2 | - | | mg/kg | 1 | A-T-024s |
| Vanadium$_D$[M#] | - | - | - | 16 | 34 | - | | mg/kg | 1 | A-T-024s |
| Zinc$_D$[M#] | - | - | - | 338 | 226 | - | | mg/kg | 5 | A-T-024s |

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322.ES02 | 326R.BH322.ES03 | 326R.BH323.ES01 | 326R.BH323.ES02 | 326R.BH324.ES03 | 326R.BH324.ES07 | | | | |
| Client Sample ID | BH322 | BH322 | BH323 | BH323 | BH324 | BH324 | | | | |
| Depth to Top | 0.50 | 1.00 | 0.30 | 0.50 | 1.00 | 5.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 21-Mar-22 | 21-Mar-22 | 22-Mar-22 | 20-Mar-22 | 09-Apr-22 | 09-Apr-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 4AB | 4AE | 4ABE | 6A | 6A | | | | |
| **Acid Herbicides (Suite 3+)** | | | | | | | | | | |
| 2,3,6-TBA$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-D$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DB$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-T$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex)$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 4-CPA$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Benazolin$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Bentazone$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Bromacil$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Bromoxynil$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Clopyralid$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Dicamba$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Diclofop$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop-isopropyl$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Fluroxypyr$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Ioxynil$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| MCPA$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| MCPB$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| MCPP; (Mecoprop)$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| PCP; (Pentachlorophenol)$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Picloram$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Triclopyr$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/04120**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322. ES02 | 326R.BH322. ES03 | 326R.BH323. ES01 | 326R.BH323. ES02 | 326R.BH324. ES03 | 326R.BH324. ES07 | | | | |
| Client Sample ID | BH322 | BH322 | BH323 | BH323 | BH324 | BH324 | | | | |
| Depth to Top | 0.50 | 1.00 | 0.30 | 0.50 | 1.00 | 5.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 21-Mar-22 | 21-Mar-22 | 22-Mar-22 | 20-Mar-22 | 09-Apr-22 | 09-Apr-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 4AB | 4AE | 4ABE | 6A | 6A | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | - | - | - | Chrysotile | NAD | - | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | - | - | - | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | Loose Insulation | - | - | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | - | - | - | N/A | N/A | - | | | | A-T-045 |
| | | | | | | | | | | |
| **Asbestos in Soil Quantification % (Hand Picking & Weighing)** | | | | | | | | | | |
| Asbestos in soil % composition (hand picking and weighing)$_{D}$ | - | - | - | 0.004 | - | - | | % w/w | 0.001 | A-T-054 |

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322.ES02 | 326R.BH322.ES03 | 326R.BH323.ES01 | 326R.BH323.ES02 | 326R.BH324.ES03 | 326R.BH324.ES07 | | | | |
| Client Sample ID | BH322 | BH322 | BH323 | BH323 | BH324 | BH324 | | | | |
| Depth to Top | 0.50 | 1.00 | 0.30 | 0.50 | 1.00 | 5.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 21-Mar-22 | 21-Mar-22 | 22-Mar-22 | 20-Mar-22 | 09-Apr-22 | 09-Apr-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 4AB | 4AE | 4ABE | 6A | 6A | | | | |
| **Carb+Urea Herbs Suite1** | | | | | | | | | | |
| Carbetamide$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorbufam$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Chloroxuron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorpropham$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Chlortoluron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Diflubenzuron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Dimefuron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Diuron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Ethiofencarb$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Isoproturon$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Linuron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Methabenzthiazuron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Metoxuron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Monolinuron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Monuron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Pencycuron$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Phenmedipham$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Pirimicarb$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Propham$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine and Simazine)** | | | | | | | | | | |
| Dichlobenil$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Tecnazene$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Trifluralin$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| alpha-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Hexachlorobenzene (HCB)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Simazine$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Atrazine$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322.ES02 | 326R.BH322.ES03 | 326R.BH323.ES01 | 326R.BH323.ES02 | 326R.BH324.ES03 | 326R.BH324.ES07 | | | | |
| Client Sample ID | BH322 | BH322 | BH323 | BH323 | BH324 | BH324 | | | | |
| Depth to Top | 0.50 | 1.00 | 0.30 | 0.50 | 1.00 | 5.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 21-Mar-22 | 21-Mar-22 | 22-Mar-22 | 20-Mar-22 | 09-Apr-22 | 09-Apr-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 4AB | 4AE | 4ABE | 6A | 6A | | | | |
| beta-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Quintozene (PCNB)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Chlorothalonil$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| delta-Hexachlorocyclohexane (HCH)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Triallate$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Heptachlor$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Aldrin$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Triadimefon$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Telodrin$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Isodrin$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Pendimethalin$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Heptachlor epoxide$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| trans-Chlordane (Gamma)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| o,p-DDE (2,4)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endosulphan I (Alpha)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| cis-Chlordane (Alpha)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| p,p-DDE (4,4)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Dieldrin$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| o,p-DDD (2,4)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endrin$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endosulphan II (Beta)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| p,p-DDD (4,4)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| o,p-DDT (2,4)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endrin Aldehyde$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endrin Ketone$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Endosulphan Sulphate$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| p,p-DDT (4,4)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| o,p-Methoxychlor$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| p,p-Methoxychlor$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Permethrin I (cis)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Permethrin II (trans)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Dichlorvos$_A$ | <0.03 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Mevinphos$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |

**Envirolab Job Number: 22/04120**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322.ES02 | 326R.BH322.ES03 | 326R.BH323.ES01 | 326R.BH323.ES02 | 326R.BH324.ES03 | 326R.BH324.ES07 | | | | |
| Client Sample ID | BH322 | BH322 | BH323 | BH323 | BH324 | BH324 | | | | |
| Depth to Top | 0.50 | 1.00 | 0.30 | 0.50 | 1.00 | 5.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 21-Mar-22 | 21-Mar-22 | 22-Mar-22 | 20-Mar-22 | 09-Apr-22 | 09-Apr-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 4AB | 4AE | 4ABE | 6A | 6A | | | | |
| Demeton-S$_A$ | <0.50 | - | - | - | - | - | | mg/kg | 0.5 | A-T-056 |
| Demeton-O$_A$ | <0.50 | - | - | - | - | - | | mg/kg | 0.5 | A-T-056 |
| Phorate$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Dimethoate$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Propetamphos$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Diazinon (Dimpylate)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Disulfoton$_A$ | <0.10 | - | - | - | - | - | | mg/kg | 0.1 | A-T-056 |
| Chlorpyrifos-methyl$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Parathion (Ethyl Parathion)$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Methyl Parathion$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Pirimiphos-methyl$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Fenitrothion$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Fensulphothion$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Fenthion$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Malathion$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Chlorfenvinphos$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Chlorpyrifos$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Trichloronate$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Prothiofos (Tokuthion)$_A$ | <0.02 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Ethion$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Triazophos$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Carbophenothion$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Phosalone$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Azinphos-methyl$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Azinphos-ethyl$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |
| Coumaphos$_A$ | <0.01 | - | - | - | - | - | | mg/kg | 0.01 | A-T-056 |

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322. ES02 | 326R.BH322. ES03 | 326R.BH323. ES01 | 326R.BH323. ES02 | 326R.BH324. ES03 | 326R.BH324. ES07 | | | | |
| Client Sample ID | BH322 | BH322 | BH323 | BH323 | BH324 | BH324 | | | | |
| Depth to Top | 0.50 | 1.00 | 0.30 | 0.50 | 1.00 | 5.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 21-Mar-22 | 21-Mar-22 | 22-Mar-22 | 20-Mar-22 | 09-Apr-22 | 09-Apr-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 4AB | 4AE | 4ABE | 6A | 6A | | | | |
| ONP (Triazines Herbicides x11) | | | | | | | | | | |
| Ametryne$_A$ | < 0.20 | - | - | - | - | - | | mg/kg | 0.2 | Subcon RPS MH |
| Atraton$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Atrazine$_A$ | <0.02 | - | - | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Cyanazine$_A$ | <0.02 | - | - | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Prometon$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Prometryn$_A$ | <0.02 | - | - | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Propazine$_A$ | <0.02 | - | - | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Simazine$_A$ | <0.02 | - | - | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Simetryn$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Terbuthylazine$_A$ | <0.02 | - | - | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |
| Terbutryn$_A$ | <0.02 | - | - | - | - | - | | mg/kg | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/04120**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322. ES02 | 326R.BH322. ES03 | 326R.BH323. ES01 | 326R.BH323. ES02 | 326R.BH324. ES03 | 326R.BH324. ES07 | | | | |
| Client Sample ID | BH322 | BH322 | BH323 | BH323 | BH324 | BH324 | | | | |
| Depth to Top | 0.50 | 1.00 | 0.30 | 0.50 | 1.00 | 5.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 21-Mar-22 | 21-Mar-22 | 22-Mar-22 | 20-Mar-22 | 09-Apr-22 | 09-Apr-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 4AB | 4AE | 4ABE | 6A | 6A | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | - | - | - | 19.9 | 2.02 | - | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | - | - | - | 1.48 | 0.10 | - | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | - | - | - | 31.4 | 2.07 | - | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | - | - | - | 37 | 3.52 | - | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | - | - | - | 22.8 | 2.54 | - | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | - | - | - | 24.2 | 2.60 | - | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | - | - | - | 11.6 | 0.72 | - | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | - | - | - | 10.5 | 1.12 | - | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | - | - | - | 45.4 | 2.90 | - | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | - | - | - | 3.56 | 0.28 | - | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | - | - | - | 81.8 | 8.04 | - | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | - | - | - | 21.9 | 1.37 | - | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | - | - | - | 13.1 | 0.97 | - | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | - | - | - | 27 | 10.2 | - | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | - | - | - | 127 | 11.5 | - | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | - | - | - | 79.8 | 7.22 | - | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | - | - | - | 558 | 57.2 | - | | mg/kg | 0.01 | A-T-019s |
| | | | | | | | | | | |
| **Pyrethroids (x6)** | | | | | | | | | | |
| Cyfluthrin$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Cyhalothrin$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Cypermethrin$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Deltamethrin$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Fenvalerate$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |
| Permethrin$_A$ | <0.1 | - | - | - | - | - | | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/04120**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322. ES02 | 326R.BH322. ES03 | 326R.BH323. ES01 | 326R.BH323. ES02 | 326R.BH324. ES03 | 326R.BH324. ES07 | | | | |
| Client Sample ID | BH322 | BH322 | BH323 | BH323 | BH324 | BH324 | | | | |
| Depth to Top | 0.50 | 1.00 | 0.30 | 0.50 | 1.00 | 5.00 | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 21-Mar-22 | 21-Mar-22 | 22-Mar-22 | 20-Mar-22 | 09-Apr-22 | 09-Apr-22 | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | |
| Sample Matrix Code | 4AE | 4AB | 4AE | 4ABE | 6A | 6A | | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | - | - | - | <0.01 | <0.05 | - | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | - | - | - | <0.01 | <0.05 | - | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | - | - | - | <1 | 12 | - | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | - | - | - | 1 | 7 | - | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | - | - | - | 6 | 11 | - | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | - | - | - | 7 | 8 | - | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | - | - | - | 27 | 29 | - | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | - | - | - | 30 | 7 | - | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | - | - | - | 71 | 75 | - | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | - | - | - | <0.01 | <0.05 | - | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | - | - | - | <0.01 | <0.05 | - | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | - | - | - | <1 | 8 | - | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | - | - | - | 13 | 52 | - | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | - | - | - | 91 | 94 | - | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | - | - | - | 349 | 172 | - | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | - | - | - | 857 | 267 | - | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | - | - | - | 29 | 5 | - | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | - | - | - | 1340 | 599 | - | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | - | - | - | 1420 | 674 | - | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | - | - | - | <0.01 | <0.05 | - | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | - | - | - | <0.01 | <0.05 | - | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | - | - | - | <0.01 | <0.05 | - | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | - | - | - | <0.01 | <0.05 | - | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | - | - | - | <0.01 | <0.05 | - | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | - | - | - | <0.01 | <0.05 | - | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/04120

**Date Received:** 28/04/2022 (am)

**Cool Box Temperatures (°C):** 9.8, 10.1, 9.7

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 |
|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322 .ES02 | 326R.BH322 .ES03 | 326R.BH323 .ES01 | 326R.BH323 .ES02 | 326R.BH324 .ES03 | 326R.BH324 .ES07 |
| Client Sample ID/Depth | BH322 0.50m | BH322 1.00m | BH323 0.30m | BH323 0.50m | BH324 1.00m | BH324 5.00m |
| Date Sampled | 21/03/22 | 21/03/22 | 22/03/22 | 20/03/22 | 09/04/22 | 09/04/22 |
| Deviation Code | | | | | | |
| F | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

*Key*

*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 |
|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322 .ES02 | 326R.BH322 .ES03 | 326R.BH323 .ES01 | 326R.BH323 .ES02 | 326R.BH324 .ES03 | 326R.BH324 .ES07 |
| Client Sample ID/Depth | BH322 0.50m | BH322 1.00m | BH323 0.30m | BH323 0.50m | BH324 1.00m | BH324 5.00m |
| Date Sampled | 21/03/22 | 21/03/22 | 22/03/22 | 20/03/22 | 09/04/22 | 09/04/22 |
| Acid Herbicides (Suite 3+) | ✓ | | | | | |
| Carb+Urea Herbs Suite1 | ✓ | | | | | |
| Pyrethroids (x6) | ✓ | | | | | |
| OCP+OPP Combined Pest Suite (incl. Atrazine and Simazine) | ✓ | | | | | |
| PCB Total | | ✓ | ✓ | | | |
| Total Organic Carbon | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Mineral Oil (>C10-C40) | | ✓ | ✓ | | | |
| PAH (total 17) | | ✓ | ✓ | | | ✓ |

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 |
|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322 .ES02 | 326R.BH322 .ES03 | 326R.BH323 .ES01 | 326R.BH323 .ES02 | 326R.BH324 .ES03 | 326R.BH324 .ES07 |
| Client Sample ID/Depth | BH322 0.50m | BH322 1.00m | BH323 0.30m | BH323 0.50m | BH324 1.00m | BH324 5.00m |
| Date Sampled | 21/03/22 | 21/03/22 | 22/03/22 | 20/03/22 | 09/04/22 | 09/04/22 |
| BTEX (total) | | ✓ | ✓ | | | ✓ |
| VPHCWG | | | | ✓ | ✓ | |
| EPH UKCWG | | | | ✓ | ✓ | |
| PAH-16MS | | | | ✓ | ✓ | |
| Cyanide (total) | | | | ✓ | ✓ | |
| Cyanide (free) | | | | ✓ | | |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/04120/2 | 22/04120/3 | 22/04120/6 | 22/04120/7 | 22/04120/13 | 22/04120/17 |
|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH322 .ES02 | 326R.BH322 .ES03 | 326R.BH323 .ES01 | 326R.BH323 .ES02 | 326R.BH324 .ES03 | 326R.BH324 .ES07 |
| Client Sample ID/Depth | BH322 0.50m | BH322 1.00m | BH323 0.30m | BH323 0.50m | BH324 1.00m | BH324 5.00m |
| Date Sampled | 21/03/22 | 21/03/22 | 22/03/22 | 20/03/22 | 09/04/22 | 09/04/22 |
| A-T-004s | | 11/05/2022 | 11/05/2022 | | | 11/05/2022 |
| A-T-007s | | 09/05/2022 | 09/05/2022 | | | 09/05/2022 |
| A-T-019s | | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 |
| A-T-022s | | 09/05/2022 | 09/05/2022 | 09/05/2022 | 10/05/2022 | 09/05/2022 |
| A-T-024s | | | | 12/05/2022 | 12/05/2022 | |
| A-T-025w | | 16/05/2022 | 16/05/2022 | | | 16/05/2022 |
| A-T-026w | | 16/05/2022 | 16/05/2022 | | | 16/05/2022 |
| A-T-027s | | | | 11/05/2022 | 11/05/2022 | |
| A-T-031s | | | | 11/05/2022 | 11/05/2022 | |
| A-T-031w | | 16/05/2022 | 16/05/2022 | | | 16/05/2022 |
| A-T-032s | | 11/05/2022 | 11/05/2022 | 12/05/2022 | 11/05/2022 | 11/05/2022 |
| A-T-032w | | 16/05/2022 | 16/05/2022 | | | 16/05/2022 |
| A-T-037w | | 16/05/2022 | 16/05/2022 | | | 16/05/2022 |
| A-T-040s | | | | 12/05/2022 | 12/05/2022 | |
| A-T-041s | | | | 20/05/2022 | | |
| A-T-042sCCN | | | | 23/05/2022 | | |
| A-T-042sFCN | | | | 23/05/2022 | | |
| A-T-042sTCN | | | | 09/05/2022 | 09/05/2022 | |
| A-T-044 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 |
| A-T-045 | | | | 05/05/2022 | 05/05/2022 | |
| A-T-050s | | | | 10/05/2022 | 10/05/2022 | |
| A-T-050w | | 16/05/2022 | 16/05/2022 | | | 16/05/2022 |
| A-T-054 | | | | 07/05/2022 | | |
| A-T-055s | | | | 10/05/2022 | 10/05/2022 | |
| A-T-056 | 17/05/2022 | | | | | |
| Calc-no stones | | 16/05/2022 | 16/05/2022 | | | 16/05/2022 |
| Probe (w) | | 16/05/2022 | 16/05/2022 | | | 16/05/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | |
|---|---|
| Envirolab Job Number: | 22/04120 |
| Issue Number: | 1 |
| Date: | 23-May-22 |

Client:
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK, WA5 7ZT

| | |
|---|---|
| Project Manager: | 326R / 325N-03 |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project Ref: | 326R |
| Order No: | RIT 262 915 759 |

| | |
|---|---|
| Date Samples Received: | 11-Apr-22 |
| Date Instructions Received: | 28-Apr-22 |
| Date Analysis Completed: | 23-May-22 |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Richard Wong
Client Manager

***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04120/3 | | | | |
| Client Sample Number | | | | 326R.BH322.ES03 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH322 | | | | |
| Depth to Top | | | | 1 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 21/03/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4AB | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **13.7** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **48** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **68** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.005 | **0.050** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.057 | **0.570** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.011 | **0.110** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.005 | **0.050** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | <0.001 | **<0.01** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.023 | **0.230** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.003 | **0.030** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.007 | **0.070** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | <1.00 | **<10** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.7 | **7.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 6 | **64** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 48 | **480** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 8.1 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 96 | | | | |
| Mass Sample (kg) | | | | 0.175 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 99.8 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04120/6 | | | | |
| Client Sample Number | | | | 326R.BH323.ES01 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH323 | | | | |
| Depth to Top | | | | 0.3 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 22/03/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4AE | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **4.75** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **53.3** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **43** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1 mg/l** | **10:1 mg/kg** | **Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.011 | **0.110** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.066 | **0.660** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.141 | **1.410** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.002 | **0.020** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.084 | **0.840** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.002 | **0.020** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.041 | **0.410** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 2 | **23** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.2 | **2.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 3 | **26** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 67 | **670** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | 21.00 | **210** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.5 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 134 | | | | |
| Mass Sample (kg) | | | | 0.212 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 82.6 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04120/17 | | | | |
| Client Sample Number | | | | 326R.BH324.ES07 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH324 | | | | |
| Depth to Top | | | | 5 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 09/04/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 6A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **12.4** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **4.21** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **20** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1 mg/l** | **10:1 mg/kg** | **Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.031 | **0.310** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.001 | **0.010** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.002 | **0.020** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | <0.001 | **<0.01** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.015 | **0.150** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | <1.00 | **<10** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.1 | **1.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 257 | **2574** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 272 | **2720** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.2 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 544 | | | | |
| Mass Sample (kg) | | | | 0.212 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 82.6 | | | | |

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/04131
**Issue Number:** 1 **Date:** 13 May, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** 326R / 325N-03
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 06/04/22
**Date Instructions Received:** 28/04/22
**Date Analysis Completed:** 13/05/22

**Approved by:**



Sophie France
Client Service Manager

**Envirolab Job Number: 22/04131**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| % Stones >10mm$_A$ | 11.2 | <0.1 | <0.1 | <0.1 | <0.1 | | | % w/w | 0.1 | A-T-044 |
| pH$_D$$^{M\#}$ | - | 8.25 | - | - | 7.82 | | | pH | 0.01 | A-T-031s |
| Chloride (water sol 2:1)$_D$$^{M\#}$ | - | - | - | - | <10 | | | mg/kg | 10 | A-T-026s |
| Cyanide (total)$_A$$^{M\#}$ | - | <1 | - | - | 1 | | | mg/kg | 1 | A-T-042sTCN |
| Phenols - Total by HPLC$_A$ | - | <0.2 | - | - | <0.2 | | | mg/kg | 0.2 | A-T-050s |
| Sulphide$_A$ | - | - | - | - | <5 | | | mg/kg | 5 | A-T-043-s |
| Sulphur (elemental)$_D$$^{M\#}$ | - | - | - | - | <5 | | | mg/kg | 5 | A-T-029s |
| Loss on ignition (550degC)$_D$$^{M\#}$ | - | - | - | - | 1.0 | | | % w/w | 0.6 | A-T-030s |
| Total Organic Carbon$_D$$^{M\#}$ | 6.33 | 6.60 | 7.01 | - | 0.36 | | | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | - | <5 | - | - | <5 | | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$$^{M\#}$ | - | 25 | - | - | 2 | | | mg/kg | 1 | A-T-024s |
| Barium$_D$ | - | - | - | - | 34 | | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | - | 1.0 | - | - | <0.5 | | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | - | <1.0 | - | - | <1.0 | | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$$^{M\#}$ | - | 1.2 | - | - | <0.5 | | | mg/kg | 0.5 | A-T-024s |
| Copper$_D$$^{M\#}$ | - | 71 | - | - | 6 | | | mg/kg | 1 | A-T-024s |
| Chromium$_D$$^{M\#}$ | - | 23 | - | - | 6 | | | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | - | - | - | - | <1 | | | mg/kg | 1 | A-T-040s |
| Lead$_D$$^{M\#}$ | - | 169 | - | - | 9 | | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | - | 0.57 | - | - | <0.17 | | | mg/kg | 0.17 | A-T-024s |
| Molybdenum$_D$$^{M\#}$ | - | - | - | - | <1 | | | mg/kg | 1 | A-T-024s |
| Nickel$_D$$^{M\#}$ | - | 18 | - | - | 7 | | | mg/kg | 1 | A-T-024s |
| Selenium$_D$$^{M\#}$ | - | <1 | - | - | <1 | | | mg/kg | 1 | A-T-024s |
| Vanadium$_D$$^{M\#}$ | - | 18 | - | - | 7 | | | mg/kg | 1 | A-T-024s |
| Zinc$_D$$^{M\#}$ | - | 59 | - | - | 17 | | | mg/kg | 5 | A-T-024s |

**Envirolab Job Number: 22/04131**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| **Acid Herbicides (Suite 3+)** | | | | | | | | | | |
| 2,3,6-TBA$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-D$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DB$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-T$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex)$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 4-CPA$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Benazolin$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Bentazone$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Bromacil$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Bromoxynil$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Clopyralid$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Dicamba$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Diclofop$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Flamprop-isopropyl$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Fluroxypyr$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Ioxynil$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPA$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPB$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| MCPP; (Mecoprop)$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| PCP; (Pentachlorophenol)$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Picloram$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Triclopyr$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/04131**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | - | NAD | - | - | NAD | | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | - | - | | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | - | - | | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | - | N/A | - | - | N/A | | | | | A-T-045 |

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| **Carb+Urea Herbs Suite1** | | | | | | | | | | |
| Carbetamide$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorbufam$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Chloroxuron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlorpropham$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Chlortoluron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Diflubenzuron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Dimefuron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Diuron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Ethiofencarb$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Isoproturon$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Linuron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Methabenzthiazuron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Metoxuron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Monolinuron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Monuron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Pencycuron$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Phenmedipham$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Pirimicarb$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Propham$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine and Simazine)** | | | | | | | | | | |
| Dichlobenil$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Tecnazene$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Trifluralin$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| alpha-Hexachlorocyclohexane (HCH)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Hexachlorobenzene (HCB)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Simazine$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Atrazine$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |

**Envirolab Job Number: 22/04131**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| beta-Hexachlorocyclohexane (HCH)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Quintozene (PCNB)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Chlorothalonil$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| delta-Hexachlorocyclohexane (HCH)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Triallate$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Heptachlor$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Aldrin$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Triadimefon$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Telodrin$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Isodrin$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Pendimethalin$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Heptachlor epoxide$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| trans-Chlordane (Gamma)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDE (2,4)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan I (Alpha)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| cis-Chlordane (Alpha)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDE (4,4)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Dieldrin$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDD (2,4)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Endrin$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan II (Beta)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDD (4,4)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| o,p-DDT (2,4)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Endrin Aldehyde$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Endrin Ketone$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Endosulphan Sulphate$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| p,p-DDT (4,4)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| o,p-Methoxychlor$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| p,p-Methoxychlor$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Permethrin I (cis)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Permethrin II (trans)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Dichlorvos$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Mevinphos$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |

**Envirolab Job Number: 22/04131**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| Demeton-S$_A$ | - | - | - | <0.50 | - | | | mg/kg | 0.5 | A-T-056 |
| Demeton-O$_A$ | - | - | - | <0.50 | - | | | mg/kg | 0.5 | A-T-056 |
| Phorate$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Dimethoate$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Propetamphos$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Diazinon (Dimpylate)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Disulfoton$_A$ | - | - | - | <0.10 | - | | | mg/kg | 0.1 | A-T-056 |
| Chlorpyrifos-methyl$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Parathion (Ethyl Parathion)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Methyl Parathion$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Pirimiphos-methyl$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Fenitrothion$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Fensulphothion$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Fenthion$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Malathion$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Chlorfenvinphos$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Chlorpyrifos$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Trichloronate$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Prothiofos (Tokuthion)$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Ethion$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Triazophos$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Carbophenothion$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Phosalone$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Azinphos-methyl$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Azinphos-ethyl$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |
| Coumaphos$_A$ | - | - | - | <0.01 | - | | | mg/kg | 0.01 | A-T-056 |

**Envirolab Job Number: 22/04131**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| **ONP (Triazines Herbicides x11)** | | | | | | | | | | |
| Ametryne$_A$ | - | - | - | <0.2 | - | | | mg/kg | 0.2 | Subcon RPS MH |
| Atraton$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Atrazine$_A$ | - | - | - | <0.02 | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Cyanazine$_A$ | - | - | - | <0.02 | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Prometon$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Prometryn$_A$ | - | - | - | <0.02 | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Propazine$_A$ | - | - | - | <0.02 | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Simazine$_A$ | - | - | - | <0.02 | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Simetryn$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Terbuthylazine$_A$ | - | - | - | <0.02 | - | | | mg/kg | 0.02 | Subcon RPS MH |
| Terbutryn$_A$ | - | - | - | <0.02 | - | | | mg/kg | 0.02 | Subcon RPS MH |

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | - | 0.02 | - | - | 0.01 | | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | - | <0.02 | - | - | <0.02 | | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | - | 0.05 | - | - | <0.04 | | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | - | 0.05 | - | - | <0.04 | | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | - | <0.05 | - | - | <0.05 | | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | - | <0.05 | - | - | <0.05 | | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | - | <0.07 | - | - | <0.07 | | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | - | <0.06 | - | - | <0.06 | | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | - | <0.04 | - | - | <0.04 | | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | - | 0.14 | - | - | <0.08 | | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | - | 0.01 | - | - | 0.01 | | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | - | <0.03 | - | - | <0.03 | | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | - | <0.03 | - | - | <0.03 | | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | - | 0.14 | - | - | 0.13 | | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | - | 0.15 | - | - | <0.07 | | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | - | 0.56 | - | - | 0.15 | | | mg/kg | 0.01 | A-T-019s |
| | | | | | | | | | | |
| **Pyrethroids (x6)** | | | | | | | | | | |
| Cyfluthrin$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Cyhalothrin$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Cypermethrin$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Deltamethrin$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Fenvalerate$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |
| Permethrin$_A$ | - | - | - | <0.1 | - | | | mg/kg | 0.1 | Subcon RPS MH |

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| **SVOC** | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Hexachlorobenzene$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | - | - | - | <500 | - | | | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Pentachlorophenol (SVOC)$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | - | - | - | <500 | - | | | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| Isophorone$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Hexachloroethane$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | - | - | - | <100 | - | | | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| VOC | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Chloromethane$_{A}$ | - | - | - | <10 | - | | | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Bromomethane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Chloroethane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Dichloromethane$_{A}$ | - | - | - | <5 | - | | | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_{A}^{\#}$ | - | - | - | <5 | - | | | µg/kg | 5 | A-T-006s |
| Chloroform$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_{A}^{\#}$ | - | - | - | <2 | - | | | µg/kg | 2 | A-T-006s |
| Benzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Trichloroethene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Dibromomethane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_{A}^{\#}$ | - | - | - | <10 | - | | | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Toluene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_{A}^{\#}$ | - | - | - | <3 | - | | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/04131**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| 1,2-Dibromoethane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Chlorobenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_{A}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| m & p Xylene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| o-Xylene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Styrene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Bromoform$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_{A}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| Bromobenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_{A}^{\#}$ | - | - | - | <2 | - | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_{A}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_{A}$ | - | - | - | <2 | - | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_{A}$ | - | - | - | <3 | - | | | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_{A}^{\#}$ | - | - | - | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_{A}$ | - | - | - | <3 | - | | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/04131**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 | | | | | |
| Client Sample ID | BH309 | BH309 | BH310 | BH310 | BH310 | | | | | |
| Depth to Top | 0.50 | 1.00 | 2.50 | 3.40 | 5.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 25-Mar-22 | 25-Mar-22 | 04-Apr-22 | 04-Apr-22 | 04-Apr-22 | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 4AB | 4AE | 4AB | 5A | 4A | | | | | |
| **TPH UKCWG with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | - | <1 | - | - | 143 | | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | - | <1 | - | - | 89 | | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | - | 1 | - | - | <1 | | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | - | 1 | - | - | 6 | | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | - | 4 | - | - | 36 | | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | - | 2 | - | - | 4 | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | - | 8 | - | - | 278 | | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | - | 1 | - | - | 13 | | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | - | <1 | - | - | 15 | | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | - | 5 | - | - | <1 | | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | - | 15 | - | - | <1 | | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A$ | - | 38 | - | - | <1 | | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | - | 2 | - | - | <1 | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | - | 62 | - | - | 28 | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | - | 70 | - | - | 306 | | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | - | <0.01 | - | - | <0.01 | | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/04131

**Date Received:** 28/04/2022 (am)

**Cool Box Temperatures (°C):** 8.3, 8.5

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 |
|---|---|---|---|---|---|
| Client Sample No | 326R.BH309 .ES02 | 326R.BH309 .ES03 | BH310-X-2.5 0-ES6-22040 4 | BH310-X-3.4 0-ES9-22040 4 | BH310-X-5.2 0-ES15-2204 04 |
| Client Sample ID/Depth | BH309 0.50m | BH309 1.00m | BH310 2.50m | BH310 3.40m | BH310 5.20m |
| Date Sampled | 25/03/22 | 25/03/22 | 04/04/22 | 04/04/22 | 04/04/22 |
| Deviation Code | | | | | |
| F | ✓ | ✓ | ✓ | ✓ | ✓ |

*Key*

*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 |
|---|---|---|---|---|---|
| Client Sample No | 326R.BH309 .ES02 | 326R.BH309 .ES03 | BH310-X-2.5 0-ES6-22040 4 | BH310-X-3.4 0-ES9-22040 4 | BH310-X-5.2 0-ES15-2204 04 |
| Client Sample ID/Depth | BH309 0.50m | BH309 1.00m | BH310 2.50m | BH310 3.40m | BH310 5.20m |
| Date Sampled | 25/03/22 | 25/03/22 | 04/04/22 | 04/04/22 | 04/04/22 |
| PCB Total | ✓ | | | | |
| Total Organic Carbon | ✓ | ✓ | ✓ | | ✓ |
| Mineral Oil (>C10-C40) | ✓ | | ✓ | | |
| PAH (total 17) | ✓ | | ✓ | | |
| BTEX (total) | ✓ | | ✓ | | |
| VPHCWG | | ✓ | | | ✓ |
| EPH UKCWG | | ✓ | | | ✓ |
| PAH-16MS | | ✓ | | | ✓ |

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 |
|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 |
| Client Sample ID/Depth | BH309 0.50m | BH309 1.00m | BH310 2.50m | BH310 3.40m | BH310 5.20m |
| Date Sampled | 25/03/22 | 25/03/22 | 04/04/22 | 04/04/22 | 04/04/22 |
| Cyanide (total) | | ✓ | | | ✓ |
| VOC | | | | ✓ | |
| SVOC | | | | ✓ | |
| Acid Herbicides (Suite 3+) | | | | ✓ | |
| Carb+Urea Herbs Suite1 | | | | ✓ | |
| Pyrethroids (x6) | | | | ✓ | |
| Sulphide | | | | | ✓ |
| Chloride (water sol 2:1) | | | | | ✓ |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/04131/1 | 22/04131/2 | 22/04131/11 | 22/04131/13 | 22/04131/15 |
|---|---|---|---|---|---|
| Client Sample No | 326R.BH309.ES02 | 326R.BH309.ES03 | BH310-X-2.50-ES6-220404 | BH310-X-3.40-ES9-220404 | BH310-X-5.20-ES15-220404 |
| Client Sample ID/Depth | BH309 0.50m | BH309 1.00m | BH310 2.50m | BH310 3.40m | BH310 5.20m |
| Date Sampled | 25/03/22 | 25/03/22 | 04/04/22 | 04/04/22 | 04/04/22 |
| A-T-004s | 09/05/2022 | | 09/05/2022 | | |
| A-T-006s | | | | 05/05/2022 | |
| A-T-007s | 06/05/2022 | | 06/05/2022 | | |
| A-T-019s | 06/05/2022 | 06/05/2022 | 06/05/2022 | | 06/05/2022 |
| A-T-022s | 06/05/2022 | 06/05/2022 | 06/05/2022 | | 06/05/2022 |
| A-T-024s | | 12/05/2022 | | | 12/05/2022 |
| A-T-025w | 13/05/2022 | | 13/05/2022 | | |
| A-T-026s | | | | | 12/05/2022 |
| A-T-026w | 13/05/2022 | | 13/05/2022 | | |
| A-T-027s | | 12/05/2022 | | | 12/05/2022 |
| A-T-029s | | | | | 12/05/2022 |
| A-T-030s | | | | | 12/05/2022 |
| A-T-031s | | 12/05/2022 | | | 12/05/2022 |
| A-T-031w | 13/05/2022 | | 13/05/2022 | | |
| A-T-032s | 11/05/2022 | 11/05/2022 | 11/05/2022 | | 11/05/2022 |
| A-T-032w | 13/05/2022 | | 13/05/2022 | | |
| A-T-037w | 13/05/2022 | | 13/05/2022 | | |
| A-T-040s | | | | | 12/05/2022 |
| A-T-042sTCN | | 09/05/2022 | | | 09/05/2022 |
| A-T-043-s | | | | | 10/05/2022 |
| A-T-044 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 | 10/05/2022 |
| A-T-045 | | 05/05/2022 | | | 05/05/2022 |
| A-T-050s | | 09/05/2022 | | | 09/05/2022 |
| A-T-050w | 13/05/2022 | | 13/05/2022 | | |
| A-T-052s | | | | 09/05/2022 | |
| A-T-055s | | 06/05/2022 | | | 06/05/2022 |
| A-T-056 | | | | 11/05/2022 | |
| Calc-no stones | 13/05/2022 | | 13/05/2022 | | |
| Probe (w) | 13/05/2022 | | 13/05/2022 | | |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | | | |
|---|---|---|---|
| Envirolab Job Number: | 22/04131 | | |
| Issue Number: | 1 | Date: | 13-May-22 |
| Client: | BAM Ritchies Warrington<br>Unit 5<br>Taurus Park<br>Europa Boulevard<br>Warrington<br>UK, WA5 7ZT | | |
| Project Manager: | 326R / 325N-03 | | |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works | | |
| Project Ref: | 326R | | |
| Order No: | RIT 262 915 759 | | |
| Date Samples Received: | 6-Apr-22 | | |
| Date Instructions Received: | 28-Apr-22 | | |
| Date Analysis Completed: | 13-May-22 | | |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

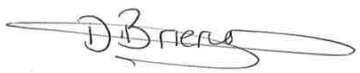
IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Danielle Brierley
Deputy Client Services Supervisor

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04131/1 | | | | |
| Client Sample Number | | | | 326R.BH309.ES02 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH309 | | | | |
| Depth to Top | | | | 0.5 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 25/03/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4AB | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **6.33** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **63.4** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **<50** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.006 | **0.060** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.021 | **0.210** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.001 | **0.010** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.023 | **0.230** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.006 | **0.060** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | <0.001 | **<0.01** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | 0.009 | **0.090** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | <0.001 | **<0.01** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | 0.001 | **0.010** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.005 | **0.050** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | <1.00 | **<10** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 1.1 | **11.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 8 | **81** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 59 | **590** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.0 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 118 | | | | |
| Mass Sample (kg) | | | | 0.208 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 84.2 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/04131/11 | | | | |
| Client Sample Number | | | | BH310-X-2.50-ES6-22 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH310 | | | | |
| Depth to Top | | | | 2.5 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | 04/04/2022 | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 4AB | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **7.01** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **12** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **<50** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **<0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | 0.012 | **0.120** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.011 | **0.110** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | 0.007 | **0.070** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | 0.057 | **0.570** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.022 | **0.220** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | 0.006 | **0.060** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.003 | **0.030** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | 0.004 | **0.040** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.002 | **0.020** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 1 | **12** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 1.2 | **12.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 11 | **113** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 317 | **3170** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | <2.0 | **<200** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 11.0 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 633 | | | | |
| Mass Sample (kg) | | | | 0.235 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 74.5 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/04227
**Issue Number:** 1 **Date:** 19 May, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** 326R / 325N-03
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 29/04/22
**Date Instructions Received:** 03/05/22
**Date Analysis Completed:** 19/05/22

**Approved by:**



Sophie France
Client Service Manager

UKAS TESTING
1247

**Envirolab Job Number: 22/04227**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| pH (w)$_A^\#$ | 7.62 | | | | | | | pH | 0.01 | A-T-031w |
| COD (settled)$_A^\#$ | 364 | | | | | | | mg/l | 5 | A-T-034w |
| BOD (settled, 5 day)$_A$ | 241 | | | | | | | mg/l | 1 | A-T-048 |
| Hardness Total$_A^\#$ | 42 | | | | | | | mg/l Ca CO3 | 2 | A-T-049w |
| Total Suspended Solids (w)$_A^\#$ | 45 | | | | | | | mg/l | 10 | A-T-036w |
| Ammoniacal nitrogen as N (w)$_A^\#$ | 22.1 | | | | | | | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_A^\#$ | 67 | | | | | | | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_A^\#$ | <0.005 | | | | | | | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_A^\#$ | <0.005 | | | | | | | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_A^\#$ | <0.005 | | | | | | | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_A$ | 0.7 | | | | | | | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_A$ | 0.07 | | | | | | | mg/l | 0.01 | A-T-050w |
| DOC (w)$_A^\#$ | 86.2 | | | | | | | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_A$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_A^\#$ | <0.2 | | | | | | | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_A^\#$ | 13 | | | | | | | mg/l | 1 | A-T-049w |
| Copper (dissolved)$_A^\#$ | 12 | | | | | | | µg/l | 1 | A-T-025w |
| Chromium (dissolved)$_A^\#$ | 1 | | | | | | | µg/l | 1 | A-T-025w |
| Chromium (hexavalent) (w)$_A^\#$ | <0.01 | | | | | | | mg/l | 0.01 | A-T-040w |
| Iron (dissolved)$_A^\#$ | 114 | | | | | | | µg/l | 10 | A-T-025w |
| Lead (dissolved)$_A^\#$ | 2 | | | | | | | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_A^\#$ | 15 | | | | | | | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_A^\#$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_A^\#$ | 1 | | | | | | | µg/l | 1 | A-T-025w |
| Selenium (dissolved)$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_A^\#$ | 49 | | | | | | | µg/l | 1 | A-T-025w |

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **Acid Herbicides Suite 3+ (w)** | | | | | | | | | | |
| 2,3,6-TBA (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-D (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DB (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-T (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex) (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 4-CPA (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Benazolin (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bentazone (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bromacil (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Bromoxynil (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Clopyralid (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Dicamba (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Diclofop (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop-isopropyl (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Fluroxypyr (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Ioxynil (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPA (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPB (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPP; (Mecoprop) (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| PCP; (Pentachlorophenol) (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Picloram (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Triclopyr (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **Carb+Urea(w)HerbsSuite1** | | | | | | | | | | |
| Carbetamide (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chlorbufam (w)$_A$ | <10.0 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chloroxuron (w) $_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Chlorpropham (w)$_A$ | <10.0 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Chlortoluron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Diflubenzuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Dimefuron (w) $_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Diuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Ethiofencarb (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Isoproturon (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Linuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Methabenzthiazuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Metoxuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Monolinuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Monuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Pencycuron (w)$_A$ | <0.05 | | | | | | | µg/l | 0.05 | Subcon RPS MH |
| Phenmedipham (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Pirimicarb (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Propham (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine+Simazine) (w)** | | | | | | | | | | |
| Dichlobenil (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Tecnazene (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Trifluralin (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| alpha-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Hexachlorobenzene (HCB) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Simazine (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Atrazine (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| beta-Hexachlorocyclohexane (HCH) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Quintozene (PCNB) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Triallate (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| delta-Hexachlorocyclohexane (HCH) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Chlorothalonil (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Aldrin (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Triadimefon (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Telodrin (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Isodrin (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Pendimethalin (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor epoxide (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| trans-Chlordane (Gamma) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDE (2,4) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan I (Alpha) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| cis-Chlordane (Alpha) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDE (4,4) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Dieldrin (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDD (2,4) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endrin (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan II (Beta) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDD (4,4) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDT (2,4) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endrin Aldehyde (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan Sulphate (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDT (4,4) (w)A | <1.0 | | | | | | | µg/l | 0.1 | A-T-056w |
| o,p-Methoxychlor (w)A | <1.0 | | | | | | | µg/l | 0.1 | A-T-056w |
| Endrin Ketone (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| p,p-Methoxychlor (w)A | <1.0 | | | | | | | µg/l | 0.1 | A-T-056w |
| Permethrin I (cis) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Permethrin II (trans) (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Dichlorvos (w)A | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |

**Envirolab Job Number: 22/04227**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| Mevinphos (w)$_A$ | <0.5 | | | | | | | µg/l | 0.5 | A-T-056w |
| Demeton-S (w)$_A$ | <0.5 | | | | | | | µg/l | 0.5 | A-T-056w |
| Phorate (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Dimethoate (w)$_A$ | <0.5 | | | | | | | µg/l | 0.5 | A-T-056w |
| Demeton-O (w)$_A$ | <0.5 | | | | | | | µg/l | 0.5 | A-T-056w |
| Propetamphos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Diazinon (Dimpylate) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Disulfoton (w)$_A$ | <0.5 | | | | | | | µg/l | 0.5 | A-T-056w |
| Chlorpyrifos-methyl (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Methyl Parathion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Pirimiphos-methyl (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Fenitrothion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Malathion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Chlorpyrifos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Fenthion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Parathion (Ethyl Parathion) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Trichloronate (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Chlorfenvinphos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Fensulphothion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Prothiofos (Tokuthion) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Ethion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Triazophos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Carbophenothion (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Phosalone (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-methyl (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-ethyl (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| Coumaphos (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |
| gamma-Hexachlorocyclohexane (HCH / Lindane) (w)$_A$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-056w |

**Envirolab Job Number:** 22/04227

**Client Project Name:** Victoria North HIF Infrastructure & Enabling Works

**Client Project Ref:** 326R

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| ONP (Triazine Herbicides x11) (w) | | | | | | | | | | |
| Ametryne (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Atraton (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Atrazine (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Cyanazine (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Prometon (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Prometryn (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Propazine (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Simazine (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Simetryn (w)$_A$ | <0.02 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Terbuthylazine (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |
| Terbutryn (w)$_A$ | <0.20 | | | | | | | µg/l | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/04227**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_{A}^{\#}$ | 1.37 | | | | | | | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_{A}^{\#}$ | 0.04 | | | | | | | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_{A}^{\#}$ | 0.19 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_{A}^{\#}$ | 0.09 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_{A}^{\#}$ | 0.05 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_{A}^{\#}$ | 0.07 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_{A}^{\#}$ | 0.02 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_{A}^{\#}$ | 0.02 | | | | | | | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_{A}^{\#}$ | 0.08 | | | | | | | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_{A}^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_{A}^{\#}$ | 0.33 | | | | | | | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_{A}^{\#}$ | 0.29 | | | | | | | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_{A}^{\#}$ | 0.02 | | | | | | | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_{A}^{\#}$ | 0.20 | | | | | | | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_{A}^{\#}$ | 0.38 | | | | | | | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_{A}^{\#}$ | 0.27 | | | | | | | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_{A}^{\#}$ | 3.42 | | | | | | | µg/l | 0.01 | A-T-019w |
| | | | | | | | | | | |
| **Pyrethroids (x6) (w)** | | | | | | | | | | |
| Cyfluthrin (w)$_{A}$ | <0.10 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Cyhalothrin-lambda (w)$_{A}$ | <0.10 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Cypermethrin (w)$_{A}$ | <0.10 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Deltamethrin (w)$_{A}$ | <0.10 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Fenvalerate (w)$_{A}$ | <0.10 | | | | | | | µg/l | 0.1 | Subcon RPS MH |
| Permethrin (w)$_{A}$ | <0.10 | | | | | | | µg/l | 0.1 | Subcon RPS MH |

**Envirolab Job Number: 22/04227**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **Speciated PCB-WHO12 (w)** | | | | | | | | | | |
| PCB BZ 81 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 105 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 114 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 118 (w)$_A^{\#}$ | <0.004 | | | | | | | µg/l | 0.002 | A-T-004w |
| PCB BZ 123 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 126 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 156 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 157 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 167 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 169 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 189 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 77 (w)$_A$ | <0.002 | | | | | | | µg/l | 0.001 | A-T-004w |
| Total Speciated PCB-WHO12 (w)$_A$ | <0.004 | | | | | | | µg/l | 0.001 | A-T-004w |

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| SVOC (excluding PAH-16) (w) | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol (w)$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | 161 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | <10 | | | | | | | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | <12 | | | | | | | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | <10 | | | | | | | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | <7 | | | | | | | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachlorobenzene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Pentachlorophenol (SVOC)$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Phenol$_A$ | 100 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |

Envirolab Job Number: 22/04227

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| Nitrobenzene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Isophorone$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Perylene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |

**Envirolab Job Number: 22/04227**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **VOC (w)** | | | | | | | | | | |
| Dichlorodifluoromethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chloromethane$_A$ | <10 | | | | | | | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromomethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dichloromethane$_A$ | 21 | | | | | | | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromochloromethane$_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-006w |
| Chloroform$_A^{\#}$ | 7 | | | | | | | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_A^{\#}$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Benzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dibromomethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_A^{\#}$ | <10 | | | | | | | µg/l | 10 | A-T-006w |
| Trichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Toluene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_A^{\#}$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| Tetrachloroethene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,1,2-Tetrachloroethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chlorobenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Ethylbenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| m & p Xylene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromoform$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Styrene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| o-Xylene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromobenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| n-propylbenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_A^{\#}$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| n-butylbenzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_A^{\#}$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_A^{\#}$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_A^{\#}$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/04227**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/04227/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.ANGMH.EW01 | | | | | | | | | |
| Client Sample ID | ANGEL ST M/H | | | | | | | | | |
| Depth to Top | | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 28-Apr-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **TPH UKCWG (w) with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6 (w)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Ali >C6-C8 (w)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Ali >C8-C10 (w)$_A^{\#}$ | 28 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C10-C12 (w)$_A^{\#}$ | 673 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C12-C16 (w)$_A^{\#}$ | 3490 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C16-C21 (w)$_A^{\#}$ | 1660 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C21-C35 (w)$_A^{\#}$ | 3150 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C35-C44 (w)$_A$ | 458 | | | | | | | µg/l | 5 | A-T-055w |
| Total Aliphatics (w)$_A$ | 9460 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C5-C7 (w)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Aro >C7-C8 (w)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Aro >C8-C10 (w)$_A$ | 32 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C10-C12 (w)$_A^{\#}$ | 486 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C12-C16 (w)$_A^{\#}$ | 3080 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C16-C21 (w)$_A^{\#}$ | 2990 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C21-C35 (w)$_A$ | 638 | | | | | | | µg/l | 10 | A-T-055w |
| Aro >C35-C44 (w)$_A$ | 500 | | | | | | | µg/l | 5 | A-T-055w |
| Total Aromatics (w)$_A$ | 7730 | | | | | | | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) (w)$_A$ | 17200 | | | | | | | µg/l | 10 | A-T-055w |
| BTEX - Benzene (w)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - Toluene (w)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene (w)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene (w)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - o Xylene (w)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| MTBE (w)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project No:** 22/04227

**Date Received:** 03/05/2022 (am)

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Cool Box Temperatures (°C):** 10.3 & 14.7

**Clients Project No:** 326R

| **Lab Sample ID** | 22/04227/1 |
|---|---|
| **Client Sample No** | 326R.ANGMH.EW01 |
| **Client Sample ID/Depth** | ANGEL ST M/H |
| **Date Sampled** | 28/04/22 |
| **Deviation Code** | |
| F | ✓ |
| D8 (Pesticides) | ✓ |

*Key*

| | |
|---|---|
| *F* | *Maximum holding time exceeded between sampling date and analysis for analytes listed below* |
| *D8 (Pesticides)* | *Glass container not provided for Pesticides* |

## HOLDING TIME EXCEEDANCES

| **Lab Sample ID** | 22/04227/1 |
|---|---|
| **Client Sample No** | 326R.ANGMH.EW01 |
| **Client Sample ID/Depth** | ANGEL ST M/H |
| **Date Sampled** | 28/04/22 |
| BOD (settled, 5 day) | ✓ |
| Acid Herbicides Suite 3+ (w) | ✓ |
| Pyrethroids (x6) (w) | ✓ |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/04227/1 |
|---|---|
| Client Sample No | 326R.ANGMH.EW01 |
| Client Sample ID/Depth | ANGEL ST M/H |
| Date Sampled | 28/04/22 |
| A-T-004w | 09/05/2022 |
| A-T-006w | 06/05/2022 |
| A-T-019w | 10/05/2022 |
| A-T-022w | 05/05/2022 |
| A-T-025w | 09/05/2022 |
| A-T-026w | 06/05/2022 |
| A-T-031w | 05/05/2022 |
| A-T-032w | 09/05/2022 |
| A-T-033w | 09/05/2022 |
| A-T-034w | 09/05/2022 |
| A-T-036w | 09/05/2022 |
| A-T-040w | 06/05/2022 |
| A-T-041w | 11/05/2022 |
| A-T-042wCCN | 07/05/2022 |
| A-T-042wFCN | 07/05/2022 |
| A-T-042wTCN | 07/05/2022 |
| A-T-048 | 09/05/2022 |
| A-T-049w | 06/05/2022 |
| A-T-050w | 06/05/2022 |
| A-T-052w | 09/05/2022 |
| A-T-055w | 09/05/2022 |
| A-T-056w | 16/05/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

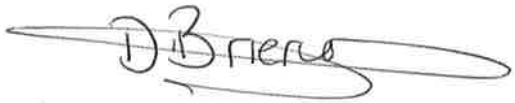
# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/05383
**Issue Number:** 1 **Date:** 20 June, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** 326R / 325N-03
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 27/05/22
**Date Instructions Received:** 31/05/22
**Date Analysis Completed:** 20/06/22

**Approved by:**



Danielle Brierley
Deputy Client Services Supervisor

UKAS TESTING
1247

**Envirolab Job Number: 22/05383**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH201 7.50 | GWBH-BH202 7.90 | GWBH-BH103 3.45 | GWBH-BH102 3.10 | GWBH-BH205 8.30 | GWBH-BH203 12.30 | GWBH-BH315 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| pH (w)$_A^{\#}$ | 7.53 | 8.04 | 7.14 | 7.09 | 7.28 | 7.84 | 7.36 | pH | 0.01 | A-T-031w |
| pH BRE (w)$_A^{\#}$ | - | 8.04 | - | - | - | - | - | pH | 0.01 | A-T-031w |
| Hardness Total$_A^{\#}$ | 1457 | 2516 | 2644 | 1509 | 2071 | 345 | 2266 | mg/l CaCO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_A^{\#}$ | 0.18 | 0.36 | 3.08 | 1.90 | 0.41 | 3.81 | 5.04 | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_A^{\#}$ | 17 | 52 | 23 | 77 | 71 | 35 | 51 | mg/l | 1 | A-T-026w |
| Sulphate BRE (w)$_A^{\#}$ | - | 316 | - | - | - | - | - | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_A^{\#}$ | - | - | - | - | - | <0.005 | <0.005 | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_A^{\#}$ | <0.005 | <0.005 | 0.056 | 0.005 | 0.098 | <0.005 | 0.879 | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_A^{\#}$ | - | - | - | - | - | <0.005 | 0.879 | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_A$ | - | - | - | - | - | 1.5 | 0.8 | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_A$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | mg/l | 0.01 | A-T-050w |
| DOC (w)$_A^{\#}$ | <2.0 | 5.2 | 10.3 | 15.5 | 2.5 | 4.3 | 9.5 | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_A$ | <1 | <1 | <2 | 1 | <1 | <1 | <5 | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_A^{\#}$ | 2 | 66 | <2 | 16 | 21 | 11 | 10 | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_A^{\#}$ | <1 | <1 | <2 | <1 | <1 | <1 | <5 | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_A^{\#}$ | 4.4 | 0.3 | <0.4 | <0.2 | 9.7 | 0.2 | <1.0 | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_A^{\#}$ | 473 | 717 | 992 | 536 | 629 | 91 | 779 | mg/l | 1 | A-T-049w |
| Cobalt (dissolved)$_A^{\#}$ | - | - | - | - | - | 14 | 17 | µg/l | 1 | A-T-025w |
| Copper (dissolved)$_A^{\#}$ | <1 | <1 | <2 | 10 | 59 | 43 | <5 | µg/l | 1 | A-T-025w |
| Chromium (dissolved)$_A^{\#}$ | <1 | <1 | <2 | 3 | 7 | 4 | <5 | µg/l | 1 | A-T-025w |
| Lead (dissolved)$_A^{\#}$ | <1 | <1 | <2 | 149 | 72 | 88 | <5 | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_A^{\#}$ | 5550 | 16100 | 13200 | 3610 | 15200 | 722 | 13400 | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_A^{\#}$ | <0.1 | <0.1 | <0.2 | <0.1 | <0.1 | <0.1 | <0.5 | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_A^{\#}$ | 72 | 88 | 25 | 17 | 121 | 20 | 25 | µg/l | 1 | A-T-025w |
| Selenium (dissolved)$_A^{\#}$ | 1 | <1 | <2 | <1 | 3 | <1 | <5 | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_A^{\#}$ | <1 | 2 | <2 | 7 | 10 | 4 | <5 | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_A^{\#}$ | 439 | 335 | 23 | 55 | 3077 | 137 | 65 | µg/l | 1 | A-T-025w |

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **Acid Herbicides Suite 3+ (w)** | | | | | | | | | | |
| 2,3,6-TBA (w)$_A$ | <0.02 | - | - | < 0.10 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| 2,4-D (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DB (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-T (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex) (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| 4-CPA (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Benazolin (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Bentazone (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Bromacil (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Bromoxynil (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Clopyralid (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Dicamba (w)$_A$ | <0.02 | - | - | < 1.00 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Diclofop (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Flamprop (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Flamprop-isopropyl (w)$_A$ | < 0.20 | - | - | < 0.20 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Fluroxypyr (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Ioxynil (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| MCPA (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| MCPB (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| MCPP; (Mecoprop) (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| PCP; (Pentachlorophenol) (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Picloram (w)$_A$ | <0.02 | - | - | < 1.00 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Triclopyr (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **Carb+Urea(w)HerbsSuite1** | | | | | | | | | | |
| Carbetamide (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Chlorbufam (w)$_A$ | < 1.0 | - | - | < 1.0 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Chloroxuron (w) $_A$ | < 1.0 | - | - | < 1.0 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Chlorpropham (w)$_A$ | < 1.00 | - | - | < 1.00 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Chlortoluron (w)$_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Diflubenzuron (w)$_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Dimefuron (w) $_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Diuron (w)$_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Ethiofencarb (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Isoproturon (w)$_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Linuron (w)$_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Methabenzthiazuron (w)$_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Metoxuron (w)$_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Monolinuron (w)$_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Monuron (w)$_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Pencycuron (w)$_A$ | <0.05 | - | - | <0.05 | - | - | - | µg/l | 0.05 | Subcon RPS MH |
| Phenmedipham (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Pirimicarb (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Propham (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine+Simazine) (w)** | | | | | | | | | | |
| Dichlobenil (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Tecnazene (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Trifluralin (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| alpha-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Hexachlorobenzene (HCB) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Simazine (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Atrazine (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| beta-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Quintozene (PCNB) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Triallate (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| delta-Hexachlorocyclohexane (HCH) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Chlorothalonil (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Heptachlor (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Aldrin (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Triadimefon (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Telodrin (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Isodrin (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Pendimethalin (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Heptachlor epoxide (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| trans-Chlordane (Gamma) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| o,p-DDE (2,4) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Endosulphan I (Alpha) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| cis-Chlordane (Alpha) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| p,p-DDE (4,4) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Dieldrin (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| o,p-DDD (2,4) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Endrin (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Endosulphan II (Beta) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| p,p-DDD (4,4) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| o,p-DDT (2,4) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Endrin Aldehyde (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Endosulphan Sulphate (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| p,p-DDT (4,4) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| o,p-Methoxychlor (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Endrin Ketone (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| p,p-Methoxychlor (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Permethrin I (cis) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Permethrin II (trans) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Dichlorvos (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Mevinphos (w)$_A$ | <0.5 | - | - | <0.5 | - | - | - | µg/l | 0.5 | A-T-056w |

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| Demeton-S (w)$_A$ | <0.5 | - | - | <0.5 | - | - | - | µg/l | 0.5 | A-T-056w |
| Phorate (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Dimethoate (w)$_A$ | <0.5 | - | - | <0.5 | - | - | - | µg/l | 0.5 | A-T-056w |
| Demeton-O (w)$_A$ | <0.5 | - | - | <0.5 | - | - | - | µg/l | 0.5 | A-T-056w |
| Propetamphos (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Diazinon (Dimpylate) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Disulfoton (w)$_A$ | <0.5 | - | - | <0.5 | - | - | - | µg/l | 0.5 | A-T-056w |
| Chlorpyrifos-methyl (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Methyl Parathion (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Pirimiphos-methyl (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Fenitrothion (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Malathion (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Chlorpyrifos (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Fenthion (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Parathion (Ethyl Parathion) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Trichloronate (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Chlorfenvinphos (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Fensulphothion (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Prothiofos (Tokuthion) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Ethion (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Triazophos (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Carbophenothion (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Phosalone (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Azinphos-methyl (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Azinphos-ethyl (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| Coumaphos (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |
| gamma-Hexachlorocyclohexane (HCH / Lindane) (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | A-T-056w |

**Envirolab Job Number: 22/05383**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **ONP (Triazine Herbicides x11) (w)** | | | | | | | | | | |
| Ametryne (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Atraton (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Atrazine (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Cyanazine (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Prometon (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Prometryn (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Propazine (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Simazine (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Simetryn (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Terbuthylazine (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |
| Terbutryn (w)$_A$ | <0.02 | - | - | <0.02 | - | - | - | µg/l | 0.02 | Subcon RPS MH |

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_A^{\#}$ | <0.01 | 0.27 | 0.01 | 1.81 | 0.06 | 0.02 | 1.74 | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_A^{\#}$ | <0.01 | 0.10 | <0.01 | 0.29 | 0.07 | 0.07 | 1.10 | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_A^{\#}$ | <0.01 | 0.51 | 0.02 | 1.41 | 0.29 | 0.06 | 0.63 | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_A^{\#}$ | <0.01 | 2.28 | <0.01 | 1.13 | 0.86 | 0.19 | 2.04 | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_A^{\#}$ | <0.01 | 2.42 | 0.01 | 0.38 | 1.01 | 0.30 | 2.90 | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_A^{\#}$ | <0.01 | 2.81 | 0.01 | 0.53 | 1.11 | 0.29 | 2.57 | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_A^{\#}$ | <0.01 | 1.99 | 0.01 | 0.26 | 0.67 | 0.28 | 3.64 | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_A^{\#}$ | <0.01 | 0.94 | <0.01 | 0.18 | 0.37 | 0.10 | 0.79 | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_A^{\#}$ | <0.01 | 2.60 | <0.01 | 1.26 | 1.01 | 0.25 | 2.43 | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_A^{\#}$ | <0.01 | 0.41 | <0.01 | 0.08 | 0.15 | 0.04 | 0.53 | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_A^{\#}$ | <0.01 | 5.05 | 0.04 | 1.26 | 1.50 | 0.31 | 4.07 | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_A^{\#}$ | <0.01 | 0.24 | 0.08 | 3.07 | 0.08 | 0.03 | 2.79 | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_A^{\#}$ | <0.01 | 2.01 | 0.01 | 0.26 | 0.70 | 0.20 | 2.58 | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_A^{\#}$ | <0.01 | 0.04 | <0.01 | 0.91 | 0.01 | <0.01 | 0.72 | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_A^{\#}$ | <0.01 | 2.35 | <0.01 | 1.23 | 0.70 | 0.15 | 1.16 | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_A^{\#}$ | <0.01 | 5.13 | 0.03 | 2.10 | 1.65 | 0.66 | 8.10 | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_A^{\#}$ | <0.01 | 29.1 | 0.22 | 16.2 | 10.2 | 2.95 | 37.8 | µg/l | 0.01 | A-T-019w |
| | | | | | | | | | | |
| **Pyrethroids (x6) (w)** | | | | | | | | | | |
| Cyfluthrin (w)$_A$ | <0.1 | - | - | <0.1 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Cyhalothrin-lambda (w)$_A$ | <0.1 | - | - | < 1.00 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Cypermethrin (w)$_A$ | <0.1 | - | - | < 1.00 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Deltamethrin (w)$_A$ | <0.1 | - | - | < 1.00 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Fenvalerate (w)$_A$ | <0.1 | - | - | < 1.00 | - | - | - | µg/l | 0.1 | Subcon RPS MH |
| Permethrin (w)$_A$ | <0.1 | - | - | < 1.00 | - | - | - | µg/l | 0.1 | Subcon RPS MH |

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| SVOC (excluding PAH-16) (w) | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | - | - | <10 | - | - | <10 | <10 | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | - | - | 4 | - | - | 3 | <1 | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | - | - | <10 | - | - | <10 | <10 | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Hexachlorobenzene SVOC$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Pentachlorophenol SVOC$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Phenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| Nitrobenzene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Isophorone$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Perylene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **VOC (w)** | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Chloromethane$_{A}$ | - | - | <10 | - | - | <10 | <10 | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Bromomethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Chloroethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Dichloromethane$_{A}$ | - | - | <5 | - | - | <5 | <5 | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Bromochloromethane$_{A}^{\#}$ | - | - | <5 | - | - | <5 | <5 | µg/l | 5 | A-T-006w |
| Chloroform$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_{A}^{\#}$ | - | - | <2 | - | - | <2 | <2 | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Benzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | 14 | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Dibromomethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_{A}^{\#}$ | - | - | <10 | - | - | <10 | <10 | µg/l | 10 | A-T-006w |
| Trichloroethene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Toluene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_{A}^{\#}$ | - | - | <3 | - | - | <3 | <3 | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| Tetrachloroethene$_{A}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1,1,2-Tetrachloroethane$_{A}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Chlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Ethylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| m & p Xylene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Bromoform$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Styrene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_{A}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| o-Xylene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Bromobenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| n-propylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_{A}^{\#}$ | - | - | <2 | - | - | <2 | <2 | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| n-butylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_{A}^{\#}$ | - | - | <2 | - | - | <2 | <2 | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_{A}^{\#}$ | - | - | <3 | - | - | <3 | <3 | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_{A}^{\#}$ | - | - | <3 | - | - | <3 | <3 | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH20 1 7.50 | GWBH-BH20 2 7.90 | GWBH-BH10 3 3.45 | GWBH-BH10 2 3.10 | GWBH-BH20 5 8.30 | GWBH-BH20 3 12.30 | GWBH-BH31 5 12.00 | | | |
| Client Sample ID | BH201 | BH202 | BH103 | BH102 | BH205 | BH203 | BH315 | | | |
| Depth to Top | 7.50 | 7.90 | 3.45 | 3.10 | 8.30 | 12.30 | 12.00 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | 26-May-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **TPH UKCWG (w) with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Ali >C6-C8 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Ali >C8-C10 $(w)_A^{\#}$ | <5 | <5 | <50 | 21400 | <5 | <5 | <50 | µg/l | 5 | A-T-055w |
| Ali >C10-C12 $(w)_A^{\#}$ | <5 | <5 | <50 | 38000 | <5 | <5 | <50 | µg/l | 5 | A-T-055w |
| Ali >C12-C16 $(w)_A^{\#}$ | <5 | <5 | <50 | 81800 | <5 | <5 | <50 | µg/l | 5 | A-T-055w |
| Ali >C16-C21 $(w)_A^{\#}$ | <5 | <5 | <50 | 54000 | <5 | 5 | <50 | µg/l | 5 | A-T-055w |
| Ali >C21-C35 $(w)_A^{\#}$ | 17 | 18 | <50 | 56900 | <5 | 139 | <50 | µg/l | 5 | A-T-055w |
| Ali >C35-C44 $(w)_A$ | <5 | <5 | <50 | 2010 | <5 | 8 | <50 | µg/l | 5 | A-T-055w |
| Total Aliphatics $(w)_A$ | 17 | 18 | <50 | 254000 | <5 | 152 | <50 | µg/l | 5 | A-T-055w |
| Aro >C5-C7 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | 8 | µg/l | 1 | A-T-022w |
| Aro >C7-C8 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Aro >C8-C10 $(w)_A$ | <5 | <5 | <50 | 9000 | <5 | 7 | <50 | µg/l | 5 | A-T-055w |
| Aro >C10-C12 $(w)_A^{\#}$ | <5 | <5 | <50 | 21300 | <5 | 10 | <50 | µg/l | 5 | A-T-055w |
| Aro >C12-C16 $(w)_A^{\#}$ | <5 | <5 | <50 | 48100 | <5 | 12 | 114 | µg/l | 5 | A-T-055w |
| Aro >C16-C21 $(w)_A^{\#}$ | <5 | <5 | <50 | 29000 | <5 | 12 | 78 | µg/l | 5 | A-T-055w |
| Aro >C21-C35 $(w)_A$ | <10 | <10 | <100 | 12400 | <10 | 12 | <100 | µg/l | 10 | A-T-055w |
| Aro >C35-C44 $(w)_A$ | <5 | <5 | <50 | <500 | <5 | <5 | <50 | µg/l | 5 | A-T-055w |
| Total Aromatics $(w)_A$ | <10 | <10 | <100 | 120000 | <10 | 53 | 200 | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) $(w)_A$ | 17 | 18 | <100 | 374000 | <10 | 205 | 200 | µg/l | 10 | A-T-055w |
| BTEX - Benzene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | 8 | µg/l | 1 | A-T-022w |
| BTEX - Toluene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene $(w)_A^{\#}$ | <1 | <1 | <1 | 1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - o Xylene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| MTBE $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |

**Envirolab Job Number: 22/05383**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| pH (w)$_{A}^{\#}$ | 7.40 | 6.78 | 7.28 | 7.04 | | | | pH | 0.01 | A-T-031w |
| pH BRE (w)$_{A}^{\#}$ | 7.40 | - | 7.28 | - | | | | pH | 0.01 | A-T-031w |
| Hardness Total$_{A}^{\#}$ | 2463 | 2504 | 657 | 2857 | | | | mg/l Ca CO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_{A}^{\#}$ | 2.27 | 49 | 0.21 | 21.8 | | | | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_{A}^{\#}$ | 37 | 53 | 15 | 38 | | | | mg/l | 1 | A-T-026w |
| Sulphate BRE (w)$_{A}^{\#}$ | 17 | - | 198 | - | | | | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_{A}^{\#}$ | - | <0.005 | - | - | | | | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_{A}^{\#}$ | 0.010 | 0.328 | <0.005 | 3.509 | | | | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_{A}^{\#}$ | - | 0.328 | - | - | | | | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_{A}$ | - | 0.2 | - | - | | | | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_{A}$ | <0.01 | <0.01 | <0.01 | <0.01 | | | | mg/l | 0.01 | A-T-050w |
| DOC (w)$_{A}^{\#}$ | 2.4 | 9.7 | 5.5 | 5.9 | | | | mg/l | 2 | A-T-032w |
| Aluminium (dissolved)$_{A}$ | - | - | - | <10 | | | | µg/l | 10 | A-T-049w |
| Antimony (dissolved)$_{A}$ | <1 | <2 | <2 | 4 | | | | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_{A}^{\#}$ | 7 | 28 | 11 | 24 | | | | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_{A}^{\#}$ | <1 | <2 | 4 | <2 | | | | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_{A}^{\#}$ | <0.2 | 1.3 | 3.5 | <0.4 | | | | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_{A}^{\#}$ | 834 | 852 | 208 | 1070 | | | | mg/l | 1 | A-T-049w |
| Cobalt (dissolved)$_{A}^{\#}$ | - | - | - | 35 | | | | µg/l | 1 | A-T-025w |
| Copper (dissolved)$_{A}^{\#}$ | 13 | 65 | 104 | 4 | | | | µg/l | 1 | A-T-025w |
| Chromium (dissolved)$_{A}^{\#}$ | 2 | 35 | 22 | 5 | | | | µg/l | 1 | A-T-025w |
| Iron (dissolved)$_{A}^{\#}$ | - | - | - | 806 | | | | µg/l | 10 | A-T-025w |
| Lead (dissolved)$_{A}^{\#}$ | 25 | 143 | 63 | 13 | | | | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_{A}^{\#}$ | 1920 | 11700 | 6910 | 6090 | | | | µg/l | 1 | A-T-025w |
| Magnesium (dissolved)$_{A}^{\#}$ | - | - | - | 49 | | | | mg/l | 1 | A-T-049w |
| Mercury (dissolved)$_{A}^{\#}$ | <0.1 | <0.2 | <0.2 | <0.2 | | | | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_{A}^{\#}$ | 5 | 77 | 53 | 76 | | | | µg/l | 1 | A-T-025w |
| Potassium (dissolved)$_{A}^{\#}$ | - | - | - | 21 | | | | mg/l | 1.2 | A-T-049w |
| Selenium (dissolved)$_{A}^{\#}$ | <1 | 3 | 18 | <2 | | | | µg/l | 1 | A-T-025w |
| Silver (dissolved)$_{A}$ | - | - | - | <1 | | | | µg/l | 1 | A-T-049w |
| Tin (dissolved)$_{A}$ | - | - | - | 17 | | | | µg/l | 1 | A-T-049w |
| Titanium (dissolved)$_{A}$ | - | - | - | <1 | | | | µg/l | 1 | A-T-049w |

**Envirolab Job Number: 22/05383**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| Vanadium (dissolved)$_{A}^{\#}$ | 2 | 20 | 30 | <2 | | | | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_{A}^{\#}$ | 38 | 265 | 446 | 390 | | | | µg/l | 1 | A-T-025w |

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| **Acid Herbicides Suite 3+ (w)** | | | | | | | | | | |
| 2,3,6-TBA (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-D (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DB (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-T (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4,5-TP; (Fenoprop); (Silvex) (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| 4-CPA (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Benazolin (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Bentazone (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Bromacil (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Bromoxynil (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Clopyralid (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Dicamba (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| 2,4-DP; (Dichlorprop)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Diclofop (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Flamprop-isopropyl (w)$_A$ | - | - | < 0.20 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Fluroxypyr (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Ioxynil (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPA (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPB (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| MCPP; (Mecoprop) (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| PCP; (Pentachlorophenol) (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Picloram (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Triclopyr (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| **Carb+Urea(w)HerbsSuite1** | | | | | | | | | | |
| Carbetamide (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Chlorbufam (w)$_A$ | - | - | < 1.0 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Chloroxuron (w) $_A$ | - | - | < 1.0 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Chlorpropham (w)$_A$ | - | - | < 1.00 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Chlortoluron (w)$_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Diflubenzuron (w)$_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Dimefuron (w) $_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Diuron (w)$_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Ethiofencarb (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Isoproturon (w)$_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Linuron (w)$_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Methabenzthiazuron (w)$_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Metoxuron (w)$_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Monolinuron (w)$_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Monuron (w)$_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Pencycuron (w)$_A$ | - | - | <0.05 | - | | | | µg/l | 0.05 | Subcon RPS MH |
| Phenmedipham (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Pirimicarb (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Propham (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| | | | | | | | | | | |
| **OCP+OPP Combined Pest Suite (incl. Atrazine+Simazine) (w)** | | | | | | | | | | |
| Dichlobenil (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Tecnazene (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Trifluralin (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| alpha-Hexachlorocyclohexane (HCH) (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Hexachlorobenzene (HCB) (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Simazine (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Atrazine (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| beta-Hexachlorocyclohexane (HCH) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Quintozene (PCNB) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Triallate (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| delta-Hexachlorocyclohexane (HCH) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Chlorothalonil (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Aldrin (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Triadimefon (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Telodrin (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Isodrin (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Pendimethalin (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Heptachlor epoxide (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| trans-Chlordane (Gamma) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDE (2,4) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan I (Alpha) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| cis-Chlordane (Alpha) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDE (4,4) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Dieldrin (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDD (2,4) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Endrin (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan II (Beta) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDD (4,4) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| o,p-DDT (2,4) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Endrin Aldehyde (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Endosulphan Sulphate (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| p,p-DDT (4,4) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| o,p-Methoxychlor (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Endrin Ketone (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| p,p-Methoxychlor (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Permethrin I (cis) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Permethrin II (trans) (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Dichlorvos (w)A | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Mevinphos (w)A | - | - | <0.5 | - | | | | µg/l | 0.5 | A-T-056w |

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| Demeton-S (w)$_A$ | - | - | <0.5 | - | | | | µg/l | 0.5 | A-T-056w |
| Phorate (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Dimethoate (w)$_A$ | - | - | <0.5 | - | | | | µg/l | 0.5 | A-T-056w |
| Demeton-O (w)$_A$ | - | - | <0.5 | - | | | | µg/l | 0.5 | A-T-056w |
| Propetamphos (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Diazinon (Dimpylate) (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Disulfoton (w)$_A$ | - | - | <0.5 | - | | | | µg/l | 0.5 | A-T-056w |
| Chlorpyrifos-methyl (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Methyl Parathion (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Pirimiphos-methyl (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Fenitrothion (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Malathion (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Chlorpyrifos (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Fenthion (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Parathion (Ethyl Parathion) (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Trichloronate (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Chlorfenvinphos (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Fensulphothion (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Prothiofos (Tokuthion) (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Ethion (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Triazophos (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Carbophenothion (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Phosalone (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-methyl (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Azinphos-ethyl (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| Coumaphos (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |
| gamma-Hexachlorocyclohexane (HCH / Lindane) (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | A-T-056w |

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| ONP (Triazine Herbicides x11) (w) | | | | | | | | | | |
| Ametryne (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Atraton (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Atrazine (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Cyanazine (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Prometon (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Prometryn (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Propazine (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Simazine (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Simetryn (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Terbuthylazine (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |
| Terbutryn (w)$_A$ | - | - | <0.02 | - | | | | µg/l | 0.02 | Subcon RPS MH |

**Envirolab Job Number: 22/05383**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_A^{\#}$ | <0.01 | 0.15 | <0.01 | 0.05 | | | | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_A^{\#}$ | <0.01 | 0.03 | <0.01 | <0.01 | | | | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_A^{\#}$ | <0.01 | 0.10 | <0.01 | 0.03 | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_A^{\#}$ | 0.02 | 0.31 | <0.01 | 0.06 | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_A^{\#}$ | 0.02 | 0.31 | <0.01 | 0.06 | | | | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_A^{\#}$ | 0.02 | 0.34 | <0.01 | 0.07 | | | | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_A^{\#}$ | 0.03 | 0.25 | <0.01 | 0.05 | | | | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_A^{\#}$ | <0.01 | 0.12 | <0.01 | 0.03 | | | | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_A^{\#}$ | 0.02 | 0.35 | <0.01 | 0.06 | | | | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_A^{\#}$ | <0.01 | 0.05 | <0.01 | <0.01 | | | | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_A^{\#}$ | 0.04 | 0.65 | <0.01 | 0.15 | | | | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_A^{\#}$ | <0.01 | 0.10 | <0.01 | 0.03 | | | | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_A^{\#}$ | 0.02 | 0.23 | <0.01 | 0.05 | | | | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_A^{\#}$ | <0.01 | 0.10 | <0.01 | 0.03 | | | | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_A^{\#}$ | 0.01 | 0.40 | <0.01 | 0.11 | | | | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_A^{\#}$ | 0.07 | 0.75 | <0.01 | 0.15 | | | | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_A^{\#}$ | 0.25 | 4.24 | <0.01 | 0.93 | | | | µg/l | 0.01 | A-T-019w |
| | | | | | | | | | | |
| **Pyrethroids (x6) (w)** | | | | | | | | | | |
| Cyfluthrin (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Cyhalothrin-lambda (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Cypermethrin (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Deltamethrin (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Fenvalerate (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |
| Permethrin (w)$_A$ | - | - | <0.1 | - | | | | µg/l | 0.1 | Subcon RPS MH |

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| **SVOC (excluding PAH-16) (w)** | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | <10 | <10 | - | <10 | | | | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | <10 | <10 | - | <10 | | | | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Hexachlorobenzene SVOC$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Pentachlorophenol SVOC$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Phenol$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |

**Envirolab Job Number: 22/05383**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH310 4.3 | GWBH-BH314 11.10 | GWBH-BH105 4.93 | GWBH-BH306 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| Nitrobenzene$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Isophorone$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |
| Perylene$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-052w |

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| VOC (w) | | | | | | | | | | |
| Dichlorodifluoromethane$_A$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Chloromethane$_A$ | <10 | <10 | - | <10 | | | | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Bromomethane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Chloroethane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Dichloromethane$_A$ | <5 | <5 | - | <5 | | | | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Bromochloromethane$_A^{\#}$ | <5 | <5 | - | <5 | | | | µg/l | 5 | A-T-006w |
| Chloroform$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_A^{\#}$ | <2 | <2 | - | <2 | | | | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Benzene$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Dibromomethane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_A^{\#}$ | <10 | <10 | - | <10 | | | | µg/l | 10 | A-T-006w |
| Trichloroethene$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Toluene$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_A^{\#}$ | <3 | <3 | - | <3 | | | | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_A^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/05383**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| Tetrachloroethene$_{A}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,1,1,2-Tetrachloroethane$_{A}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Chlorobenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Ethylbenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| m & p Xylene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Bromoform$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Styrene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_{A}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| o-Xylene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| Bromobenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| n-propylbenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_{A}^{\#}$ | <2 | <2 | - | <2 | | | | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| n-butylbenzene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_{A}^{\#}$ | <2 | <2 | - | <2 | | | | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_{A}^{\#}$ | <3 | <3 | - | <3 | | | | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_{A}^{\#}$ | <3 | <3 | - | <3 | | | | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_{A}^{\#}$ | <1 | <1 | - | <1 | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/05383**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | GWBH-BH31 0 4.3 | GWBH-BH31 4 11.10 | GWBH-BH10 5 4.93 | GWBH-BH30 6 5.03 | | | | | | |
| Client Sample ID | BH310 | BH314 | BH105 | BH306 | | | | | | |
| Depth to Top | 4.30 | 11.10 | 4.93 | 5.03 | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 26-May-22 | 27-May-22 | 27-May-22 | 27-May-22 | | | | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | | | | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | | | | | | |
| **TPH UKCWG (w) with Clean Up *C1** | | | | | | | | | | |
| Ali >C5-C6 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | | | | µg/l | 1 | A-T-022w |
| Ali >C6-C8 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | | | | µg/l | 1 | A-T-022w |
| Ali >C8-C10 $(w)_A^{\#}$ | <5 | <50 | <5 | <50 | | | | µg/l | 5 | A-T-055w |
| Ali >C10-C12 $(w)_A^{\#}$ | 12 | <50 | <5 | <50 | | | | µg/l | 5 | A-T-055w |
| Ali >C12-C16 $(w)_A^{\#}$ | 3319 | <50 | <5 | <50 | | | | µg/l | 5 | A-T-055w |
| Ali >C16-C21 $(w)_A^{\#}$ | 24 | <50 | <5 | <50 | | | | µg/l | 5 | A-T-055w |
| Ali >C21-C35 $(w)_A^{\#}$ | 71 | <50 | 26 | <50 | | | | µg/l | 5 | A-T-055w |
| Ali >C35-C44 $(w)_A$ | <5 | <50 | <5 | <50 | | | | µg/l | 5 | A-T-055w |
| Total Aliphatics $(w)_A$ | 3430 | <50 | 26 | <50 | | | | µg/l | 5 | A-T-055w |
| Aro >C5-C7 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | | | | µg/l | 1 | A-T-022w |
| Aro >C7-C8 $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | | | | µg/l | 1 | A-T-022w |
| Aro >C8-C10 $(w)_A$ | <5 | <50 | <5 | <50 | | | | µg/l | 5 | A-T-055w |
| Aro >C10-C12 $(w)_A^{\#}$ | 110 | <50 | <5 | <50 | | | | µg/l | 5 | A-T-055w |
| Aro >C12-C16 $(w)_A^{\#}$ | 1349 | <50 | <5 | <50 | | | | µg/l | 5 | A-T-055w |
| Aro >C16-C21 $(w)_A^{\#}$ | 18 | <50 | <5 | <50 | | | | µg/l | 5 | A-T-055w |
| Aro >C21-C35 $(w)_A$ | 11 | <100 | <10 | <100 | | | | µg/l | 10 | A-T-055w |
| Aro >C35-C44 $(w)_A$ | <5 | <50 | <5 | <50 | | | | µg/l | 5 | A-T-055w |
| Total Aromatics $(w)_A$ | 1490 | <100 | <10 | <100 | | | | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) $(w)_A$ | 4910 | <100 | 26 | <100 | | | | µg/l | 10 | A-T-055w |
| BTEX - Benzene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | | | | µg/l | 1 | A-T-022w |
| BTEX - Toluene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | | | | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | | | | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | | | | µg/l | 1 | A-T-022w |
| BTEX - o Xylene $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | | | | µg/l | 1 | A-T-022w |
| MTBE $(w)_A^{\#}$ | <1 | <1 | <1 | <1 | | | | µg/l | 1 | A-T-022w |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project No:** 22/05383

**Date Received:** 31/05/2022 (am)

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Cool Box Temperatures (°C):** 10.4 - 17.2

**Clients Project No:** 326R

| Lab Sample ID | 22/05383/1 | 22/05383/4 |
|---|---|---|
| Client Sample No | GWBH-BH2 01 7.50 | GWBH-BH1 02 3.10 |
| Client Sample ID/Depth | BH201 7.50m | BH102 3.10m |
| Date Sampled | 26/05/22 | 26/05/22 |
| Deviation Code | | |
| F | ✓ | ✓ |

*Key*
*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/05383/1 | 22/05383/4 |
|---|---|---|
| Client Sample No | GWBH-BH2 01 7.50 | GWBH-BH1 02 3.10 |
| Client Sample ID/Depth | BH201 7.50m | BH102 3.10m |
| Date Sampled | 26/05/22 | 26/05/22 |
| Pyrethroids (x6) (w) | ✓ | ✓ |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/05383/1 | 22/05383/2 | 22/05383/3 | 22/05383/4 | 22/05383/5 | 22/05383/6 | 22/05383/7 | 22/05383/8 | 22/05383/9 | 22/05383/10 | 22/05383/11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Client Sample No** | GWBH-BH2 01 7.50 | GWBH-BH2 02 7.90 | GWBH-BH1 03 3.45 | GWBH-BH1 02 3.10 | GWBH-BH2 05 8.30 | GWBH-BH2 03 12.30 | GWBH-BH3 15 12.00 | GWBH-BH3 10 4.3 | GWBH-BH3 14 11.10 | GWBH-BH1 05 4.93 | GWBH-BH3 06 5.03 |
| **Client Sample ID/Depth** | BH201 7.50m | BH202 7.90m | BH103 3.45m | BH102 3.10m | BH205 8.30m | BH203 12.30m | BH315 12.00m | BH310 4.30m | BH314 11.10m | BH105 4.93m | BH306 5.03m |
| **Date Sampled** | 26/05/22 | 26/05/22 | 26/05/22 | 26/05/22 | 26/05/22 | 26/05/22 | 26/05/22 | 26/05/22 | 27/05/22 | 27/05/22 | 27/05/22 |
| A-T-006w | | | 06/06/2022 | | | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | | 06/06/2022 |
| A-T-019w | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 |
| A-T-022w | 07/06/2022 | 09/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 |
| A-T-025w | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 09/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 |
| A-T-026w | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 |
| A-T-031w | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 |
| A-T-032w | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 |
| A-T-033w | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 |
| A-T-041w | | | | | | 09/06/2022 | 09/06/2022 | | 09/06/2022 | | |
| A-T-042wCCN | | | | | | 07/06/2022 | 08/06/2022 | | 07/06/2022 | | |
| A-T-042wFCN | | | | | | 07/06/2022 | 07/06/2022 | | 07/06/2022 | | |
| A-T-042wTCN | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 08/06/2022 | 07/06/2022 | 07/06/2022 | 07/06/2022 | 08/06/2022 |
| A-T-049w | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 07/06/2022 |
| A-T-050w | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 | 06/06/2022 |
| A-T-052w | | | 08/06/2022 | | | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | | 08/06/2022 |
| A-T-055w | 08/06/2022 | 09/06/2022 | 10/06/2022 | 10/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 | 08/06/2022 |
| A-T-056w | 09/06/2022 | | | 09/06/2022 | | | | | | 09/06/2022 | |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

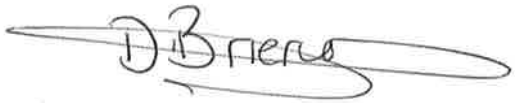
# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/06651
**Issue Number:** 1 **Date:** 22 July, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** TRUtesting
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 04/07/22
**Date Instructions Received:** 08/07/22
**Date Analysis Completed:** 22/07/22

**Approved by:**



Danielle Brierley
Deputy Client Services Supervisor

UKAS TESTING
1247

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/1 | 22/06651/2 | 22/06651/3 | 22/06651/4 | 22/06651/5 | 22/06651/6 | 22/06651/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | 01_BH102 | 01_BH103 | 01_BH105 | RE15 | GEO_BH201 | GEO_BH202 | GEO_BH203 | | | |
| Depth to Top | 3.40 | 3.59 | 5.10 | 3.55 | 7.60 | 8.70 | 12.40 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 04-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| pH (w)$_{A}^{\#}$ | 6.99 | 7.10 | 7.12 | 7.09 | 7.41 | 7.49 | 7.08 | pH | 0.01 | A-T-031w |
| Hardness Total$_{A}^{\#}$ | 1232 | 1531 | 580 | 670 | 2113 | 2069 | 358 | mg/l Ca CO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_{A}^{\#}$ | 2.20 | 1.89 | 0.22 | <0.02 | 0.15 | 0.53 | 4.04 | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_{A}^{\#}$ | 92 | 22 | 19 | 42 | 17 | 60 | 38 | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_{A}^{\#}$ | <0.005 | <0.005 | - | 0.015 | - | - | <0.005 | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_{A}^{\#}$ | <0.005 | 0.017 | <0.005 | 0.041 | <0.005 | <0.005 | <0.005 | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_{A}^{\#}$ | <0.005 | 0.017 | - | 0.026 | - | - | <0.005 | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_{A}$ | 0.3 | <0.1 | - | 0.3 | - | - | 0.1 | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_{A}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | mg/l | 0.01 | A-T-050w |
| DOC (w)$_{A}^{\#}$ | 18.7 | 9.6 | 5.3 | 3.7 | 2.0 | 3.8 | 3.6 | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_{A}$ | <1 | <1 | <1 | 1 | <1 | <1 | <1 | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_{A}^{\#}$ | 8 | 6 | 5 | 2 | 14 | 31 | 3 | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_{A}^{\#}$ | <1 | <1 | 2 | <1 | 4 | 4 | <1 | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_{A}^{\#}$ | <0.2 | 0.6 | 1.2 | <0.2 | 20.5 | 12.7 | 0.3 | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_{A}^{\#}$ | 420 | 556 | 190 | 227 | 680 | 470 | 95 | mg/l | 1 | A-T-049w |
| Cobalt (dissolved)$_{A}^{\#}$ | - | - | - | - | - | - | 2 | µg/l | 1 | A-T-025w |
| Copper (dissolved)$_{A}$ | <1 | <1 | 50 | 11 | 20 | 25 | 7 | µg/l | 4 | A-T-025w |
| Chromium (dissolved)$_{A}^{\#}$ | <1 | <1 | 13 | 1 | 6 | 5 | <1 | µg/l | 1 | A-T-025w |
| Lead (dissolved)$_{A}^{\#}$ | 7 | <1 | 41 | 67 | 39 | 69 | 4 | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_{A}^{\#}$ | 2290 | 15000 | 2450 | 1010 | 8380 | 9640 | 809 | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_{A}^{\#}$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_{A}^{\#}$ | 11 | 40 | 28 | 6 | 43 | 56 | 2 | µg/l | 2 | A-T-025w |
| Selenium (dissolved)$_{A}^{\#}$ | <1 | <1 | 3 | 2 | 4 | 4 | <1 | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_{A}^{\#}$ | <1 | <1 | 15 | 2 | 11 | 27 | <1 | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_{A}^{\#}$ | 28 | 30 | 183 | 25 | 1443 | 1584 | 55 | µg/l | 2 | A-T-025w |

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/1 | 22/06651/2 | 22/06651/3 | 22/06651/4 | 22/06651/5 | 22/06651/6 | 22/06651/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | 01_BH102 | 01_BH103 | 01_BH105 | RE15 | GEO_BH201 | GEO_BH202 | GEO_BH203 | | | |
| Depth to Top | 3.40 | 3.59 | 5.10 | 3.55 | 7.60 | 8.70 | 12.40 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 04-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_A^{\#}$ | 2.83 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.09 | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_A^{\#}$ | 1.34 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_A^{\#}$ | 3.89 | 0.01 | <0.01 | 0.01 | <0.01 | <0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_A^{\#}$ | 3.22 | <0.01 | <0.01 | 0.02 | <0.01 | 0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_A^{\#}$ | 0.86 | <0.01 | <0.01 | 0.02 | <0.01 | 0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_A^{\#}$ | 1.13 | <0.01 | <0.01 | 0.03 | <0.01 | 0.02 | <0.01 | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_A^{\#}$ | 0.46 | <0.01 | <0.01 | 0.01 | <0.01 | <0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_A^{\#}$ | 0.36 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_A^{\#}$ | 2.57 | <0.01 | <0.01 | 0.03 | <0.01 | 0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_A^{\#}$ | 0.13 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_A^{\#}$ | 3.52 | 0.02 | <0.01 | 0.06 | <0.01 | 0.03 | 0.02 | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_A^{\#}$ | 5.66 | 0.03 | <0.01 | <0.01 | <0.01 | <0.01 | 0.05 | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_A^{\#}$ | 0.50 | <0.01 | <0.01 | 0.02 | <0.01 | <0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_A^{\#}$ | 1.32 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_A^{\#}$ | 3.47 | <0.01 | <0.01 | 0.04 | <0.01 | <0.01 | <0.01 | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_A^{\#}$ | 5.16 | 0.02 | <0.01 | 0.07 | <0.01 | 0.03 | 0.05 | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_A^{\#}$ | 36.4 | 0.08 | <0.01 | 0.31 | <0.01 | 0.11 | 0.21 | µg/l | 0.01 | A-T-019w |

| Lab Sample ID | 22/06651/1 | 22/06651/2 | 22/06651/3 | 22/06651/4 | 22/06651/5 | 22/06651/6 | 22/06651/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | 01_BH102 | 01_BH103 | 01_BH105 | RE15 | GEO_BH201 | GEO_BH202 | GEO_BH203 | | | |
| Depth to Top | 3.40 | 3.59 | 5.10 | 3.55 | 7.60 | 8.70 | 12.40 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 04-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| SVOC (excluding PAH-16) (w) | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | <100 | <10 | - | - | - | - | <10 | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | <10 | <39 | - | - | - | - | <39 | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | <100 | <10 | - | - | - | - | <10 | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Hexachlorobenzene SVOC$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Pentachlorophenol SVOC$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Phenol$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Nitrobenzene$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/1 | 22/06651/2 | 22/06651/3 | 22/06651/4 | 22/06651/5 | 22/06651/6 | 22/06651/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | 01_BH102 | 01_BH103 | 01_BH105 | RE15 | GEO_BH201 | GEO_BH202 | GEO_BH203 | | | |
| Depth to Top | 3.40 | 3.59 | 5.10 | 3.55 | 7.60 | 8.70 | 12.40 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 04-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| Isophorone$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |
| Perylene$_A$ | <10 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-052w |

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/1 | 22/06651/2 | 22/06651/3 | 22/06651/4 | 22/06651/5 | 22/06651/6 | 22/06651/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | 01_BH102 | 01_BH103 | 01_BH105 | RE15 | GEO_BH201 | GEO_BH202 | GEO_BH203 | | | |
| Depth to Top | 3.40 | 3.59 | 5.10 | 3.55 | 7.60 | 8.70 | 12.40 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 04-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **VOC (w)** | | | | | | | | | | |
| Dichlorodifluoromethane$_A$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Chloromethane$_A$ | <10 | <10 | - | - | - | - | <10 | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_A$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Bromomethane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Chloroethane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Dichloromethane$_A$ | <5 | <5 | - | - | - | - | <5 | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Bromochloromethane$_A^{\#}$ | <5 | <5 | - | - | - | - | <5 | µg/l | 5 | A-T-006w |
| Chloroform$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_A^{\#}$ | <2 | <2 | - | - | - | - | <2 | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Benzene$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Dibromomethane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_A^{\#}$ | <10 | <10 | - | - | - | - | <10 | µg/l | 10 | A-T-006w |
| Trichloroethene$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Toluene$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_A^{\#}$ | <3 | <3 | - | - | - | - | <3 | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_A^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Tetrachloroethene$_A$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |

| Lab Sample ID | 22/06651/1 | 22/06651/2 | 22/06651/3 | 22/06651/4 | 22/06651/5 | 22/06651/6 | 22/06651/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | 01_BH102 | 01_BH103 | 01_BH105 | RE15 | GEO_BH201 | GEO_BH202 | GEO_BH203 | | | |
| Depth to Top | 3.40 | 3.59 | 5.10 | 3.55 | 7.60 | 8.70 | 12.40 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 04-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| 1,1,1,2-Tetrachloroethane$_{A}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Chlorobenzene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Ethylbenzene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| m & p Xylene$_{A}^{\#}$ | 3 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Bromoform$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Styrene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_{A}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| o-Xylene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_{A}^{\#}$ | 5 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| Bromobenzene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| n-propylbenzene$_{A}^{\#}$ | 3 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | 2 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_{A}^{\#}$ | 4 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_{A}^{\#}$ | <2 | <2 | - | - | - | - | <2 | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| n-butylbenzene$_{A}^{\#}$ | 1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_{A}^{\#}$ | <2 | <2 | - | - | - | - | <2 | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_{A}^{\#}$ | <3 | <3 | - | - | - | - | <3 | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_{A}^{\#}$ | <3 | <3 | - | - | - | - | <3 | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_{A}^{\#}$ | <1 | <1 | - | - | - | - | <1 | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/1 | 22/06651/2 | 22/06651/3 | 22/06651/4 | 22/06651/5 | 22/06651/6 | 22/06651/7 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | 01_BH102 | 01_BH103 | 01_BH105 | RE15 | GEO_BH201 | GEO_BH202 | GEO_BH203 | | | |
| Depth to Top | 3.40 | 3.59 | 5.10 | 3.55 | 7.60 | 8.70 | 12.40 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 04-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **TPH UKCWG (w) with Clean Up** | | | | | | | | | | |
| Ali >C5-C6 (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Ali >C6-C8 (w)$_A^{\#}$ | 11 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Ali >C8-C10 (w)$_A^{\#}$ | 406 | <5 | <5 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Ali >C10-C12 (w)$_A^{\#}$ | 760 | <5 | <5 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Ali >C12-C16 (w)$_A^{\#}$ | 1867 | <5 | <5 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Ali >C16-C21 (w)$_A^{\#}$ | 1187 | <5 | <5 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Ali >C21-C35 (w)$_A^{\#}$ | 1081 | <5 | <5 | <5 | <5 | <5 | 35 | µg/l | 5 | A-T-055w |
| Ali >C35-C44 (w)$_A$ | 56 | <5 | <5 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Total Aliphatics (w)$_A$ | 5370 | <5 | <5 | <5 | <5 | <5 | 35 | µg/l | 5 | A-T-055w |
| Aro >C5-C7 (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Aro >C7-C8 (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Aro >C8-C10 (w)$_A$ | 251 | <5 | <5 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Aro >C10-C12 (w)$_A^{\#}$ | 979 | <5 | <5 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Aro >C12-C16 (w)$_A^{\#}$ | 1677 | 12 | <5 | <5 | <5 | <5 | 10 | µg/l | 5 | A-T-055w |
| Aro >C16-C21 (w)$_A^{\#}$ | 841 | 14 | <5 | <5 | <5 | <5 | 18 | µg/l | 5 | A-T-055w |
| Aro >C21-C35 (w)$_A$ | 270 | <10 | <10 | <10 | <10 | <10 | <10 | µg/l | 10 | A-T-055w |
| Aro >C35-C44 (w)$_A$ | <5 | <5 | <5 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Total Aromatics (w)$_A$ | 4020 | 26 | <10 | <10 | <10 | <10 | 28 | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) (w)$_A$ | 9390 | 26 | <10 | <10 | <10 | <10 | 63 | µg/l | 10 | A-T-055w |
| BTEX - Benzene (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - Toluene (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene (w)$_A^{\#}$ | 3 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - o Xylene (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| MTBE (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/8 | 22/06651/9 | 22/06651/10 | 22/06651/11 | 22/06651/12 | 22/06651/13 | 22/06651/14 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | GEO_BH204 | GEO_BH205 | GEO_BH211A | GEO_BH212 | BH303 | BH306 | BH310 | | | |
| Depth to Top | 3.10 | 8.50 | 9.10 | 3.48 | 10.72 | 4.91 | 4.43 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 05-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| pH (w)$_{A}^{\#}$ | 7.26 | 7.32 | 7.20 | 7.03 | 7.36 | 6.97 | 7.50 | pH | 0.01 | A-T-031w |
| Hardness Total$_{A}^{\#}$ | 760 | 1800 | 1824 | 617 | 2 | 1215 | 262 | mg/l CaCO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_{A}^{\#}$ | 0.54 | 0.36 | 3.67 | <0.02 | 0.47 | 0.72 | 1.22 | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_{A}^{\#}$ | 6 | 61 | 31 | 14 | 146 | 36 | 39 | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_{A}^{\#}$ | - | <0.005 | 0.007 | 0.134 | - | 0.005 | <0.005 | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_{A}^{\#}$ | <0.005 | 0.024 | 3.861 | 5.246 | 0.027 | 0.265 | 0.009 | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_{A}^{\#}$ | - | 0.024 | 3.854 | 5.112 | - | 0.260 | 0.009 | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_{A}$ | - | 0.2 | 0.2 | 0.7 | - | <0.1 | 0.1 | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_{A}$ | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | mg/l | 0.01 | A-T-050w |
| DOC (w)$_{A}^{\#}$ | 4.5 | <2.0 | 5.5 | 3.5 | 3.2 | 10.8 | <2.0 | mg/l | 2 | A-T-032w |
| Aluminium (dissolved)$_{A}$ | - | - | - | - | - | 13600 | - | µg/l | 10 | A-T-049w |
| Antimony (dissolved)$_{A}$ | 1 | <1 | <1 | 5 | 3 | 3 | <1 | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_{A}^{\#}$ | 4 | 31 | <1 | 39 | 116 | 192 | 7 | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_{A}^{\#}$ | <1 | 1 | <1 | 2 | <2 | 6 | <1 | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_{A}^{\#}$ | 11.5 | 17.8 | <0.2 | 3.8 | <0.4 | 7.2 | <0.2 | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_{A}^{\#}$ | 237 | 425 | 655 | 215 | <1 | 406 | 70 | mg/l | 1 | A-T-049w |
| Cobalt (dissolved)$_{A}^{\#}$ | - | - | - | - | - | 32 | - | µg/l | 1 | A-T-025w |
| Copper (dissolved)$_{A}$ | 4 | 9 | 3 | 78 | 61 | 844 | 4 | µg/l | 4 | A-T-025w |
| Chromium (dissolved)$_{A}^{\#}$ | <1 | 3 | <1 | 45 | 5 | 744 | <1 | µg/l | 1 | A-T-025w |
| Iron (dissolved)$_{A}^{\#}$ | - | - | - | - | - | 19700 | - | µg/l | 10 | A-T-025w |
| Lead (dissolved)$_{A}^{\#}$ | 2 | 10 | <1 | 866 | <2 | 3610 | 8 | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_{A}^{\#}$ | 3360 | 11600 | 3600 | 790 | 7 | 2230 | 1310 | µg/l | 1 | A-T-025w |
| Magnesium (dissolved)$_{A}^{\#}$ | - | - | - | - | - | 53 | - | mg/l | 1 | A-T-049w |
| Mercury (dissolved)$_{A}^{\#}$ | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.2 | <0.1 | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_{A}^{\#}$ | 12 | 62 | 20 | 24 | <4 | 98 | 2 | µg/l | 2 | A-T-025w |
| Potassium (dissolved)$_{A}^{\#}$ | - | - | - | - | - | 16 | - | mg/l | 1.2 | A-T-049w |
| Selenium (dissolved)$_{A}^{\#}$ | <1 | 1 | <1 | 5 | 37 | 14 | <1 | µg/l | 1 | A-T-025w |
| Silver (dissolved)$_{A}$ | - | - | - | - | - | <1 | - | µg/l | 1 | A-T-049w |
| Tin (dissolved)$_{A}$ | - | - | - | - | - | <1 | - | µg/l | 1 | A-T-049w |
| Titanium (dissolved)$_{A}$ | - | - | - | - | - | 18 | - | µg/l | 1 | A-T-049w |
| Vanadium (dissolved)$_{A}^{\#}$ | <1 | 10 | <1 | 30 | 217 | 92 | <1 | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_{A}^{\#}$ | 1606 | 2594 | 46 | 923 | <4 | 947 | 24 | µg/l | 2 | A-T-025w |

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/8 | 22/06651/9 | 22/06651/10 | 22/06651/11 | 22/06651/12 | 22/06651/13 | 22/06651/14 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | GEO_BH204 | GEO_BH205 | GEO_BH211 A | GEO_BH212 | BH303 | BH306 | BH310 | | | |
| Depth to Top | 3.10 | 8.50 | 9.10 | 3.48 | 10.72 | 4.91 | 4.43 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 05-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_A^{\#}$ | <0.01 | <0.01 | 0.01 | <0.01 | 2.31 | 0.03 | <0.01 | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | 0.76 | <0.02 | <0.01 | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_A^{\#}$ | <0.01 | 0.02 | <0.01 | 0.01 | 4.43 | 0.09 | <0.01 | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_A^{\#}$ | 0.02 | 0.04 | 0.02 | 0.05 | 14.69 | 0.31 | <0.01 | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_A^{\#}$ | 0.03 | 0.05 | 0.02 | 0.06 | 13.95 | 0.32 | <0.01 | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_A^{\#}$ | 0.03 | 0.06 | 0.02 | 0.07 | 14.11 | 0.37 | <0.01 | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_A^{\#}$ | 0.01 | 0.03 | 0.01 | 0.04 | 8.34 | 0.17 | <0.01 | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_A^{\#}$ | 0.01 | 0.02 | <0.01 | 0.02 | 5.37 | 0.12 | <0.01 | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_A^{\#}$ | 0.02 | 0.05 | 0.04 | 0.06 | 14.91 | 0.36 | <0.01 | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | 1.82 | 0.04 | <0.01 | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_A^{\#}$ | 0.05 | 0.07 | 0.04 | 0.13 | 26.89 | 0.66 | <0.01 | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | 2.16 | 0.03 | <0.01 | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_A^{\#}$ | 0.01 | 0.03 | 0.01 | 0.04 | 8.45 | 0.18 | <0.01 | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_A^{\#}$ | <0.01 | <0.01 | <0.01 | <0.01 | 1.37 | <0.02 | <0.01 | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_A^{\#}$ | 0.02 | 0.03 | 0.02 | 0.08 | 20.60 | 0.40 | <0.01 | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_A^{\#}$ | 0.05 | 0.08 | 0.04 | 0.13 | 30.87 | 0.68 | 0.02 | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_A^{\#}$ | 0.25 | 0.48 | 0.23 | 0.69 | 171 | 3.76 | 0.02 | µg/l | 0.01 | A-T-019w |

| Lab Sample ID | 22/06651/8 | 22/06651/9 | 22/06651/10 | 22/06651/11 | 22/06651/12 | 22/06651/13 | 22/06651/14 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | GEO_BH204 | GEO_BH205 | GEO_BH211 A | GEO_BH212 | BH303 | BH306 | BH310 | | | |
| Depth to Top | 3.10 | 8.50 | 9.10 | 3.48 | 10.72 | 4.91 | 4.43 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 05-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **SVOC (excluding PAH-16) (w)** | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | - | - | <10 | - | - | <10 | <10 | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | - | - | <39 | - | - | <39 | <39 | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | - | - | <10 | - | - | <10 | <10 | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Hexachlorobenzene SVOC$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Pentachlorophenol SVOC$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Phenol$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |

Envirolab Job Number: 22/06651

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/06651/8 | 22/06651/9 | 22/06651/10 | 22/06651/11 | 22/06651/12 | 22/06651/13 | 22/06651/14 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | GEO_BH204 | GEO_BH205 | GEO_BH211 A | GEO_BH212 | BH303 | BH306 | BH310 | | | |
| Depth to Top | 3.10 | 8.50 | 9.10 | 3.48 | 10.72 | 4.91 | 4.43 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 05-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| Nitrobenzene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Isophorone$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |
| Perylene$_A$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-052w |

| Lab Sample ID | 22/06651/8 | 22/06651/9 | 22/06651/10 | 22/06651/11 | 22/06651/12 | 22/06651/13 | 22/06651/14 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | GEO_BH204 | GEO_BH205 | GEO_BH211 A | GEO_BH212 | BH303 | BH306 | BH310 | | | |
| Depth to Top | 3.10 | 8.50 | 9.10 | 3.48 | 10.72 | 4.91 | 4.43 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 05-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **VOC (w)** | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Chloromethane$_{A}$ | - | - | <10 | - | - | <10 | <10 | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_{A}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Bromomethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Chloroethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Dichloromethane$_{A}$ | - | - | <5 | - | - | <5 | <5 | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Bromochloromethane$_{A}^{\#}$ | - | - | <5 | - | - | <5 | <5 | µg/l | 5 | A-T-006w |
| Chloroform$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_{A}^{\#}$ | - | - | <2 | - | - | <2 | <2 | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Benzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Dibromomethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_{A}^{\#}$ | - | - | <10 | - | - | <10 | <10 | µg/l | 10 | A-T-006w |
| Trichloroethene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Toluene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_{A}^{\#}$ | - | - | <3 | - | - | <3 | <3 | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |

| Lab Sample ID | 22/06651/8 | 22/06651/9 | 22/06651/10 | 22/06651/11 | 22/06651/12 | 22/06651/13 | 22/06651/14 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | GEO_BH204 | GEO_BH205 | GEO_BH211 A | GEO_BH212 | BH303 | BH306 | BH310 | | | |
| Depth to Top | 3.10 | 8.50 | 9.10 | 3.48 | 10.72 | 4.91 | 4.43 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 05-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| Tetrachloroethene$_{A}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1,1,2-Tetrachloroethane$_{A}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Chlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Ethylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| m & p Xylene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Bromoform$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Styrene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_{A}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| o-Xylene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| Bromobenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| n-propylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_{A}^{\#}$ | - | - | <2 | - | - | <2 | <2 | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| n-butylbenzene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_{A}^{\#}$ | - | - | <2 | - | - | <2 | <2 | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_{A}^{\#}$ | - | - | <3 | - | - | <3 | <3 | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_{A}^{\#}$ | - | - | <3 | - | - | <3 | <3 | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_{A}^{\#}$ | - | - | <1 | - | - | <1 | <1 | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/8 | 22/06651/9 | 22/06651/10 | 22/06651/11 | 22/06651/12 | 22/06651/13 | 22/06651/14 | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | GEO_BH204 | GEO_BH205 | GEO_BH211 A | GEO_BH212 | BH303 | BH306 | BH310 | | | |
| Depth to Top | 3.10 | 8.50 | 9.10 | 3.48 | 10.72 | 4.91 | 4.43 | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | 04-Jul-22 | 04-Jul-22 | 05-Jul-22 | 04-Jul-22 | 05-Jul-22 | 05-Jul-22 | | | |
| Sample Type | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | Water - EW | | | |
| Sample Matrix Code | N/A | N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **TPH UKCWG (w) with Clean Up** | | | | | | | | | | |
| Ali >C5-C6 (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Ali >C6-C8 (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Ali >C8-C10 (w)$_A^{\#}$ | <5 | <5 | <5 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Ali >C10-C12 (w)$_A^{\#}$ | <5 | <5 | <5 | <5 | <5 | <5 | 8 | µg/l | 5 | A-T-055w |
| Ali >C12-C16 (w)$_A^{\#}$ | <5 | <5 | <5 | <5 | <5 | <5 | 1173 | µg/l | 5 | A-T-055w |
| Ali >C16-C21 (w)$_A^{\#}$ | <5 | <5 | 20 | <5 | <5 | <5 | 9 | µg/l | 5 | A-T-055w |
| Ali >C21-C35 (w)$_A^{\#}$ | <5 | <5 | 427 | 15 | <5 | <5 | 39 | µg/l | 5 | A-T-055w |
| Ali >C35-C44 (w)$_A$ | <5 | <5 | 50 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Total Aliphatics (w)$_A$ | <5 | <5 | 497 | 15 | <5 | <5 | 1230 | µg/l | 5 | A-T-055w |
| Aro >C5-C7 (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Aro >C7-C8 (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| Aro >C8-C10 (w)$_A$ | 8 | <5 | 6 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Aro >C10-C12 (w)$_A^{\#}$ | <5 | <5 | <5 | <5 | <5 | <5 | 27 | µg/l | 5 | A-T-055w |
| Aro >C12-C16 (w)$_A^{\#}$ | <5 | <5 | 9 | <5 | <5 | <5 | 436 | µg/l | 5 | A-T-055w |
| Aro >C16-C21 (w)$_A^{\#}$ | <5 | <5 | 41 | 5 | <5 | <5 | 16 | µg/l | 5 | A-T-055w |
| Aro >C21-C35 (w)$_A$ | <10 | <10 | 65 | <10 | <10 | <10 | <10 | µg/l | 10 | A-T-055w |
| Aro >C35-C44 (w)$_A$ | <5 | <5 | <5 | <5 | <5 | <5 | <5 | µg/l | 5 | A-T-055w |
| Total Aromatics (w)$_A$ | <10 | <10 | 121 | <10 | <10 | <10 | 479 | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) (w)$_A$ | <10 | <10 | 618 | 20 | <10 | <10 | 1710 | µg/l | 10 | A-T-055w |
| BTEX - Benzene (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - Toluene (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| BTEX - o Xylene (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |
| MTBE (w)$_A^{\#}$ | <1 | <1 | <1 | <1 | <1 | <1 | <1 | µg/l | 1 | A-T-022w |

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/15 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH315 | | | | | | | | | |
| Depth to Top | 11.44 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| pH (w)$_A^{\#}$ | 7.18 | | | | | | | pH | 0.01 | A-T-031w |
| Hardness Total$_A^{\#}$ | 1414 | | | | | | | mg/l Ca CO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_A^{\#}$ | 6.88 | | | | | | | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_A^{\#}$ | 48 | | | | | | | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_A^{\#}$ | <0.005 | | | | | | | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_A^{\#}$ | 0.223 | | | | | | | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_A^{\#}$ | 0.223 | | | | | | | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_A$ | <0.1 | | | | | | | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_A$ | <0.01 | | | | | | | mg/l | 0.01 | A-T-050w |
| DOC (w)$_A^{\#}$ | 8.0 | | | | | | | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_A$ | <2 | | | | | | | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_A^{\#}$ | 16 | | | | | | | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_A^{\#}$ | <2 | | | | | | | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_A^{\#}$ | <0.4 | | | | | | | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_A^{\#}$ | 476 | | | | | | | mg/l | 1 | A-T-049w |
| Cobalt (dissolved)$_A^{\#}$ | 14 | | | | | | | µg/l | 1 | A-T-025w |
| Copper (dissolved)$_A$ | <8 | | | | | | | µg/l | 4 | A-T-025w |
| Chromium (dissolved)$_A^{\#}$ | <2 | | | | | | | µg/l | 1 | A-T-025w |
| Lead (dissolved)$_A^{\#}$ | <2 | | | | | | | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_A^{\#}$ | 9760 | | | | | | | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_A^{\#}$ | <0.2 | | | | | | | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_A^{\#}$ | 24 | | | | | | | µg/l | 2 | A-T-025w |
| Selenium (dissolved)$_A^{\#}$ | <2 | | | | | | | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_A^{\#}$ | <2 | | | | | | | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_A^{\#}$ | 83 | | | | | | | µg/l | 2 | A-T-025w |

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/15 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH315 | | | | | | | | | |
| Depth to Top | 11.44 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_A^{\#}$ | 0.85 | | | | | | | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_A^{\#}$ | 0.09 | | | | | | | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_A^{\#}$ | 0.10 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_A^{\#}$ | 0.05 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_A^{\#}$ | 0.03 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_A^{\#}$ | 0.03 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_A^{\#}$ | 0.03 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_A^{\#}$ | 0.07 | | | | | | | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_A^{\#}$ | 0.57 | | | | | | | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_A^{\#}$ | 1.05 | | | | | | | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_A^{\#}$ | 0.02 | | | | | | | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_A^{\#}$ | 0.20 | | | | | | | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_A^{\#}$ | 0.15 | | | | | | | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_A^{\#}$ | 0.99 | | | | | | | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_A^{\#}$ | 4.23 | | | | | | | µg/l | 0.01 | A-T-019w |

| Lab Sample ID | 22/06651/15 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH315 | | | | | | | | | |
| Depth to Top | 11.44 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| SVOC (excluding PAH-16) (w) | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | <10 | | | | | | | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | <39 | | | | | | | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | <10 | | | | | | | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachlorobenzene SVOC$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Pentachlorophenol SVOC$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Phenol$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Nitrobenzene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |

Envirolab Job Number: 22/06651

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: 326R

| Lab Sample ID | 22/06651/15 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH315 | | | | | | | | | |
| Depth to Top | 11.44 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| Isophorone$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |
| Perylene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-052w |

| Lab Sample ID | 22/06651/15 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH315 | | | | | | | | | |
| Depth to Top | 11.44 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| VOC (w) | | | | | | | | | | |
| Dichlorodifluoromethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chloromethane$_A$ | <10 | | | | | | | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromomethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dichloromethane$_A$ | <5 | | | | | | | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromochloromethane$_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-006w |
| Chloroform$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_A^{\#}$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Benzene$_A^{\#}$ | 4 | | | | | | | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dibromomethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_A^{\#}$ | <10 | | | | | | | µg/l | 10 | A-T-006w |
| Trichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Toluene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_A^{\#}$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Tetrachloroethene$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |

| Lab Sample ID | 22/06651/15 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH315 | | | | | | | | | |
| Depth to Top | 11.44 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chlorobenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Ethylbenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| m & p Xylene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromoform$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Styrene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| o-Xylene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromobenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| n-propylbenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_A^\#$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| n-butylbenzene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_A^\#$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_A^\#$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_A^\#$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_A^\#$ | <1 | | | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/06651**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06651/15 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH315 | | | | | | | | | |
| Depth to Top | 11.44 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 05-Jul-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **TPH UKCWG (w) with Clean Up** | | | | | | | | | | |
| Ali >C5-C6 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Ali >C6-C8 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Ali >C8-C10 $(w)_A^{\#}$ | 15 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C10-C12 $(w)_A^{\#}$ | 5 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C12-C16 $(w)_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C16-C21 $(w)_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C21-C35 $(w)_A^{\#}$ | 28 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C35-C44 $(w)_A$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Total Aliphatics $(w)_A$ | 48 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C5-C7 $(w)_A^{\#}$ | 3 | | | | | | | µg/l | 1 | A-T-022w |
| Aro >C7-C8 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Aro >C8-C10 $(w)_A$ | 20 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C10-C12 $(w)_A^{\#}$ | 47 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C12-C16 $(w)_A^{\#}$ | 100 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C16-C21 $(w)_A^{\#}$ | 73 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C21-C35 $(w)_A$ | 43 | | | | | | | µg/l | 10 | A-T-055w |
| Aro >C35-C44 $(w)_A$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Total Aromatics $(w)_A$ | 286 | | | | | | | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) $(w)_A$ | 334 | | | | | | | µg/l | 10 | A-T-055w |
| BTEX - Benzene $(w)_A^{\#}$ | 3 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - Toluene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - o Xylene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| MTBE $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/06651

**Date Received:** 08/07/2022 (am)

**Cool Box Temperatures (°C):** 16.0 - 17.9

| Lab Sample ID | 22/06651/1 |
|---|---|
| Client Sample No | |
| Client Sample ID/Depth | 01_BH102 3.40m |
| Date Sampled | 04/07/22 |
| Deviation Code | |
| F | ✓ |

*Key*
*F* *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

## HOLDING TIME EXCEEDANCES

| Lab Sample ID | 22/06651/1 |
|---|---|
| Client Sample No | |
| Client Sample ID/Depth | 01_BH102 3.40m |
| Date Sampled | 04/07/22 |
| SVOC (excluding PAH-16) (w) | ✓ |

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/06651/1 | 22/06651/2 | 22/06651/3 | 22/06651/4 | 22/06651/5 | 22/06651/6 | 22/06651/7 | 22/06651/8 | 22/06651/9 | 22/06651/10 | 22/06651/11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | | |
| Client Sample ID/Depth | 01_BH102 3.40m | 01_BH103 3.59m | 01_BH105 5.10m | RE15 3.55m | GEO_BH201 7.60m | GEO_BH202 8.70m | GEO_BH203 12.40m | GEO_BH204 3.10m | GEO_BH205 8.50m | GEO_BH211A 9.10m | GEO_BH212 3.48m |
| Date Sampled | 04/07/22 | 04/07/22 | 04/07/22 | 05/07/22 | 04/07/22 | 04/07/22 | 05/07/22 | 05/07/22 | 04/07/22 | 04/07/22 | 05/07/22 |
| A-T-006w | 13/07/2022 | 13/07/2022 | | | | | 13/07/2022 | | | 13/07/2022 | |
| A-T-019w | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-022w | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 |
| A-T-025w | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 |
| A-T-026w | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 |
| A-T-031w | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-032w | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 |
| A-T-033w | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-041w | 13/07/2022 | 13/07/2022 | | 13/07/2022 | | | 13/07/2022 | | 13/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-042wCCN | 19/07/2022 | 20/07/2022 | | 20/07/2022 | | | 19/07/2022 | | 20/07/2022 | 20/07/2022 | 20/07/2022 |
| A-T-042wFCN | 19/07/2022 | 20/07/2022 | | 20/07/2022 | | | 19/07/2022 | | 20/07/2022 | 20/07/2022 | 20/07/2022 |
| A-T-042wTCN | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 20/07/2022 | 20/07/2022 |
| A-T-049w | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-050w | 19/07/2022 | 19/07/2022 | 19/07/2022 | 18/07/2022 | 19/07/2022 | 19/07/2022 | 18/07/2022 | 19/07/2022 | 18/07/2022 | 20/07/2022 | 18/07/2022 |
| A-T-052w | 21/07/2022 | 14/07/2022 | | | | | 14/07/2022 | | | 14/07/2022 | |
| A-T-055w | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 | 21/07/2022 | 19/07/2022 |

| Lab Sample ID | 22/06651/12 | 22/06651/13 | 22/06651/14 | 22/06651/15 |
|---|---|---|---|---|
| Client Sample No | | | | |
| Client Sample ID/Depth | BH303<br>10.72m | BH306<br>4.91m | BH310<br>4.43m | BH315<br>11.44m |
| Date Sampled | 04/07/22 | 05/07/22 | 05/07/22 | 05/07/22 |
| A-T-006w | | 13/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-019w | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-022w | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 |
| A-T-025w | 21/07/2022 | 22/07/2022 | 21/07/2022 | 21/07/2022 |
| A-T-026w | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 |
| A-T-031w | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-032w | 14/07/2022 | 14/07/2022 | 14/07/2022 | 14/07/2022 |
| A-T-033w | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-041w | | 13/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-042wCCN | | 20/07/2022 | 20/07/2022 | 20/07/2022 |
| A-T-042wFCN | | 20/07/2022 | 20/07/2022 | 20/07/2022 |
| A-T-042wTCN | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 |
| A-T-049w | 13/07/2022 | 14/07/2022 | 13/07/2022 | 13/07/2022 |
| A-T-050w | 18/07/2022 | 19/07/2022 | 18/07/2022 | 20/07/2022 |
| A-T-052w | | 14/07/2022 | 14/07/2022 | 14/07/2022 |
| A-T-055w | 19/07/2022 | 19/07/2022 | 19/07/2022 | 19/07/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

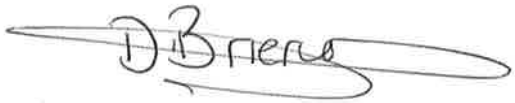
# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/06796
**Issue Number:** 1 **Date:** 27 July, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** 326R
**Order No:** RIT262 915 759
**Date Samples Received:** 08/07/22
**Date Instructions Received:** 12/07/22
**Date Analysis Completed:** 27/07/22

**Approved by:**



Danielle Brierley
Deputy Client Services Supervisor

**Envirolab Job Number: 22/06796**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH311. ES06 | 326R.BH312. ES03 | 326R.BH314. ES10 | 326R.BH315. ES02 | 326R.BH315. ES04 | | | | | |
| Client Sample ID | BH311 | BH312 | BH314 | BH315 | BH315 | | | | | |
| Depth to Top | 5.00 | 1.00 | 7.50 | 0.50 | 1.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 3AB | 4A | 5A | 5A | 5A | | | | | |
| % Stones >10mm$_A$ | 2.0 | 15.4 | 9.1 | <0.1 | <0.1 | | | % w/w | 0.1 | A-T-044 |
| pH$_D$$^{M\#}$ | 8.88 | 7.72 | 8.26 | 8.65 | - | | | pH | 0.01 | A-T-031s |
| Chloride (water sol 2:1)$_D$$^{M\#}$ | 13 | - | 26 | <10 | - | | | mg/kg | 10 | A-T-026s |
| Cyanide (total)$_A$$^{M\#}$ | <1 | <1 | <1 | <1 | - | | | mg/kg | 1 | A-T-042sTCN |
| Thiocyanate$_A$ | - | - | - | <5 | - | | | mg/kg | 5 | A-T-041s |
| Phenols - Total by HPLC$_A$ | <0.2 | <0.2 | <0.2 | <0.2 | - | | | mg/kg | 0.2 | A-T-050s |
| Sulphide$_A$ | 530 | - | 530 | 610 | - | | | mg/kg | 5 | A-T-043-s |
| Sulphur (elemental)$_D$$^{M\#}$ | <5 | - | 38 | <5 | - | | | mg/kg | 5 | A-T-029s |
| Loss on ignition (550degC)$_D$$^{M\#}$ | 2.5 | - | 15.9 | ndp | - | | | % w/w | 0.6 | A-T-030s |
| Total Organic Carbon$_D$$^{M\#}$ | 0.75 | 3.13 | 12 | 3.34 | 1.15 | | | % w/w | 0.03 | A-T-032s |
| Antimony$_D$ | <5 | 5 | 18 | <5 | - | | | mg/kg | 5 | A-T-024s |
| Arsenic$_D$$^{M\#}$ | 3 | 11 | 15 | 3 | - | | | mg/kg | 1 | A-T-024s |
| Barium$_D$ | 154 | - | 385 | 103 | - | | | mg/kg | 1 | A-T-024s |
| Beryllium$_D$ | 1.0 | 0.7 | 1.3 | 0.5 | - | | | mg/kg | 0.5 | A-T-024s |
| Boron (water soluble)$_D$ | <1.0 | <1.0 | <1.0 | <1.0 | - | | | mg/kg | 1 | A-T-027s |
| Cadmium$_D$$^{M\#}$ | 0.9 | 1.2 | 1.8 | 0.5 | - | | | mg/kg | 0.5 | A-T-024s |
| Cobalt$_D$$^{M\#}$ | - | - | - | 6 | - | | | mg/kg | 1 | A-T-024s |
| Copper$_D$$^{M\#}$ | 19 | 45 | 144 | 27 | - | | | mg/kg | 1 | A-T-024s |
| Chromium$_D$$^{M\#}$ | 25 | 12 | 24 | 12 | - | | | mg/kg | 1 | A-T-024s |
| Chromium (hexavalent)$_D$ | - | - | <1 | <1 | - | | | mg/kg | 1 | A-T-040s |
| Lead$_D$$^{M\#}$ | 14 | 160 | 2250 | 155 | - | | | mg/kg | 1 | A-T-024s |
| Manganese$_D$$^{M\#}$ | - | - | - | 295 | - | | | mg/kg | 1 | A-T-024s |
| Mercury$_D$ | <0.17 | <0.17 | 1.12 | <0.17 | - | | | mg/kg | 0.17 | A-T-024s |
| Molybdenum$_D$$^{M\#}$ | <1 | - | 5 | <1 | - | | | mg/kg | 1 | A-T-024s |
| Nickel$_D$$^{M\#}$ | 26 | 13 | 34 | 15 | - | | | mg/kg | 1 | A-T-024s |
| Selenium$_D$$^{M\#}$ | <1 | 2 | 2 | <1 | - | | | mg/kg | 1 | A-T-024s |
| Vanadium$_D$$^{M\#}$ | 25 | 18 | 35 | 14 | - | | | mg/kg | 1 | A-T-024s |
| Zinc$_D$$^{M\#}$ | 49 | 165 | 111 | 51 | - | | | mg/kg | 5 | A-T-024s |
| Loss on ignition (550°C)$_A$ | - | - | - | 8.2 | - | | | % w/w | 0.7 | Subcon ALS Haw |

**Envirolab Job Number: 22/06796**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH311. ES06 | 326R.BH312. ES03 | 326R.BH314. ES10 | 326R.BH315. ES02 | 326R.BH315. ES04 | | | | | |
| Client Sample ID | BH311 | BH312 | BH314 | BH315 | BH315 | | | | | |
| Depth to Top | 5.00 | 1.00 | 7.50 | 0.50 | 1.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 3AB | 4A | 5A | 5A | 5A | | | | | |
| **Asbestos in Soil (inc. matrix) ^** | | | | | | | | | | |
| Asbestos in soil$_{D}^{\#}$ | NAD | NAD | NAD | Chrysotile | - | | | | | A-T-045 |
| Asbestos Matrix (visual)$_{D}$ | - | - | - | - | - | | | | | A-T-045 |
| Asbestos Matrix (microscope)$_{D}$ | - | - | - | Loose Fibres | - | | | | | A-T-045 |
| Asbestos ACM - Suitable for Water Absorption Test?$_{D}$ | N/A | N/A | N/A | N/A | - | | | | | A-T-045 |
| | | | | | | | | | | |
| **Asbestos in Soil Quantification % (Hand Picking & Weighing)** | | | | | | | | | | |
| Asbestos in soil % composition (hand picking and weighing)$_{D}$ | - | - | - | <0.001 | - | | | % w/w | 0.001 | A-T-054 |

**Envirolab Job Number: 22/06796**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH311. ES06 | 326R.BH312. ES03 | 326R.BH314. ES10 | 326R.BH315. ES02 | 326R.BH315. ES04 | | | | | |
| Client Sample ID | BH311 | BH312 | BH314 | BH315 | BH315 | | | | | |
| Depth to Top | 5.00 | 1.00 | 7.50 | 0.50 | 1.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 3AB | 4A | 5A | 5A | 5A | | | | | |
| **PAH-16MS** | | | | | | | | | | |
| Acenaphthene$_A^{M\#}$ | <0.01 | 0.03 | 0.26 | 0.02 | - | | | mg/kg | 0.01 | A-T-019s |
| Acenaphthylene$_A^{M\#}$ | <0.01 | <0.01 | <0.01 | 0.18 | - | | | mg/kg | 0.01 | A-T-019s |
| Anthracene$_A^{M\#}$ | <0.02 | 0.08 | 0.41 | 0.16 | - | | | mg/kg | 0.02 | A-T-019s |
| Benzo(a)anthracene$_A^{M\#}$ | <0.04 | 0.27 | 0.38 | 0.56 | - | | | mg/kg | 0.04 | A-T-019s |
| Benzo(a)pyrene$_A^{M\#}$ | <0.04 | 0.34 | 0.31 | 0.88 | - | | | mg/kg | 0.04 | A-T-019s |
| Benzo(b)fluoranthene$_A^{M\#}$ | <0.05 | 0.35 | 0.26 | 0.65 | - | | | mg/kg | 0.05 | A-T-019s |
| Benzo(ghi)perylene$_A^{M\#}$ | <0.05 | 0.24 | 0.14 | 1.15 | - | | | mg/kg | 0.05 | A-T-019s |
| Benzo(k)fluoranthene$_A^{M\#}$ | <0.07 | 0.14 | 0.12 | 0.21 | - | | | mg/kg | 0.07 | A-T-019s |
| Chrysene$_A^{M\#}$ | <0.06 | 0.34 | 0.43 | 0.69 | - | | | mg/kg | 0.06 | A-T-019s |
| Dibenzo(ah)anthracene$_A^{M\#}$ | <0.04 | 0.05 | <0.04 | 0.13 | - | | | mg/kg | 0.04 | A-T-019s |
| Fluoranthene$_A^{M\#}$ | <0.08 | 0.54 | 1.07 | 0.56 | - | | | mg/kg | 0.08 | A-T-019s |
| Fluorene$_A^{M\#}$ | <0.01 | 0.02 | 0.23 | 0.04 | - | | | mg/kg | 0.01 | A-T-019s |
| Indeno(123-cd)pyrene$_A^{M\#}$ | <0.03 | 0.26 | 0.15 | 0.77 | - | | | mg/kg | 0.03 | A-T-019s |
| Naphthalene $_A^{M\#}$ | <0.03 | <0.03 | 0.08 | 0.29 | - | | | mg/kg | 0.03 | A-T-019s |
| Phenanthrene$_A^{M\#}$ | <0.03 | 0.33 | 1.41 | 0.42 | - | | | mg/kg | 0.03 | A-T-019s |
| Pyrene$_A^{M\#}$ | <0.07 | 0.54 | 1.07 | 1.57 | - | | | mg/kg | 0.07 | A-T-019s |
| Total PAH-16MS$_A^{M\#}$ | <0.08 | 3.53 | 6.32 | 8.28 | - | | | mg/kg | 0.01 | A-T-019s |

**Envirolab Job Number: 22/06796**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH311. ES06 | 326R.BH312. ES03 | 326R.BH314. ES10 | 326R.BH315. ES02 | 326R.BH315. ES04 | | | | | |
| Client Sample ID | BH311 | BH312 | BH314 | BH315 | BH315 | | | | | |
| Depth to Top | 5.00 | 1.00 | 7.50 | 0.50 | 1.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 3AB | 4A | 5A | 5A | 5A | | | | | |
| **Speciated PCB-WHO12** | | | | | | | | | | |
| PCB BZ 81$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 105$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 114$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 118$_{A}^{M\#}$ | - | - | <0.007 | <0.007 | - | | | mg/kg | 0.007 | A-T-004s |
| PCB BZ 123$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 126$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 156$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 157$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 167$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 169$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 189$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| PCB BZ 77$_{A}^{M\#}$ | - | - | <0.005 | <0.005 | - | | | mg/kg | 0.005 | A-T-004s |
| Total Speciated PCB-WHO12$_{A}^{M\#}$ | - | - | <0.007 | <0.007 | - | | | mg/kg | 0.005 | A-T-004s |

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH311. ES06 | 326R.BH312. ES03 | 326R.BH314. ES10 | 326R.BH315. ES02 | 326R.BH315. ES04 | | | | | |
| Client Sample ID | BH311 | BH312 | BH314 | BH315 | BH315 | | | | | |
| Depth to Top | 5.00 | 1.00 | 7.50 | 0.50 | 1.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 3AB | 4A | 5A | 5A | 5A | | | | | |
| SVOC | | | | | | | | | | |
| 4-Bromophenyl phenyl ether$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Hexachlorobenzene$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Diethyl phthalate$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Dimethyl phthalate$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Dibenzofuran$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Carbazole$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Butylbenzyl phthalate$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Bis(2-ethylhexyl)phthalate$_A$ | <500 | - | <500 | <500 | - | | | µg/kg | 500 | A-T-052s |
| Bis(2-chloroethoxy)methane$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroethyl)ether$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 4-Nitrophenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 3+4-Methylphenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 4-Chloro-3-methylphenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2-Nitrophenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2-Methylphenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2-Chlorophenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,6-Dinitrotoluene$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,4-Dinitrotoluene$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,4-Dimethylphenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,4-Dichlorophenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,4,6-Trichlorophenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2,4,5-Trichlorophenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2-Chloronaphthalene$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| 2-Methylnaphthalene$_A$ | <100 | - | <100 | 179 | - | | | µg/kg | 100 | A-T-052s |
| Bis(2-chloroisopropyl)ether$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Phenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Pentachlorophenol$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| n-Nitroso-n-dipropylamine$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| n-Dioctylphthalate$_A$ | <500 | - | <500 | <500 | - | | | µg/kg | 500 | A-T-052s |
| n-Dibutylphthalate$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Nitrobenzene$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH311. ES06 | 326R.BH312. ES03 | 326R.BH314. ES10 | 326R.BH315. ES02 | 326R.BH315. ES04 | | | | | |
| Client Sample ID | BH311 | BH312 | BH314 | BH315 | BH315 | | | | | |
| Depth to Top | 5.00 | 1.00 | 7.50 | 0.50 | 1.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 3AB | 4A | 5A | 5A | 5A | | | | | |
| Isophorone$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Hexachloroethane$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Hexachlorocyclopentadiene$_A$ | <100 | - | <100 | <100 | - | | | µg/kg | 100 | A-T-052s |
| Perylene$_A$ | <100 | - | 138 | 494 | - | | | µg/kg | 100 | A-T-052s |

**Envirolab Job Number: 22/06796**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH311. ES06 | 326R.BH312. ES03 | 326R.BH314. ES10 | 326R.BH315. ES02 | 326R.BH315. ES04 | | | | | |
| Client Sample ID | BH311 | BH312 | BH314 | BH315 | BH315 | | | | | |
| Depth to Top | 5.00 | 1.00 | 7.50 | 0.50 | 1.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 3AB | 4A | 5A | 5A | 5A | | | | | |
| **VOC** | | | | | | | | | | |
| Dichlorodifluoromethane$_{A}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Chloromethane$_{A}$ | <10 | - | <10 | <10 | - | | | µg/kg | 10 | A-T-006s |
| Vinyl Chloride (Chloroethene)$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Bromomethane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Chloroethane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Trichlorofluoromethane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Carbon Disulphide$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Dichloromethane$_{A}$ | <5 | - | <5 | <5 | - | | | µg/kg | 5 | A-T-006s |
| trans 1,2-Dichloroethene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloroethane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| cis 1,2-Dichloroethene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 2,2-Dichloropropane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Bromochloromethane$_{A}^{\#}$ | <5 | - | <5 | <5 | - | | | µg/kg | 5 | A-T-006s |
| Chloroform$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1,1-Trichloroethane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1-Dichloropropene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Carbon Tetrachloride$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloroethane$_{A}^{\#}$ | <2 | - | <2 | <2 | - | | | µg/kg | 2 | A-T-006s |
| Benzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Trichloroethene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichloropropane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Dibromomethane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Bromodichloromethane$_{A}^{\#}$ | <10 | - | <10 | <10 | - | | | µg/kg | 10 | A-T-006s |
| cis 1,3-Dichloropropene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Toluene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| trans 1,3-Dichloropropene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1,2-Trichloroethane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichloropropane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Tetrachloroethene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Dibromochloromethane$_{A}^{\#}$ | <3 | - | <3 | <3 | - | | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/06796**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH311. ES06 | 326R.BH312. ES03 | 326R.BH314. ES10 | 326R.BH315. ES02 | 326R.BH315. ES04 | | | | | |
| Client Sample ID | BH311 | BH312 | BH314 | BH315 | BH315 | | | | | |
| Depth to Top | 5.00 | 1.00 | 7.50 | 0.50 | 1.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 3AB | 4A | 5A | 5A | 5A | | | | | |
| 1,2-Dibromoethane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Chlorobenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1,1,2-Tetrachloroethane$_{A}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Ethylbenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| m & p Xylene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| o-Xylene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Styrene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Bromoform$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Isopropylbenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,1,2,2-Tetrachloroethane$_{A}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| Bromobenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| n-Propylbenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 2-Chlorotoluene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 4-Chlorotoluene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| tert-Butylbenzene$_{A}^{\#}$ | <2 | - | <2 | <2 | - | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| sec-Butylbenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 4-Isopropyltoluene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,3-Dichlorobenzene$_{A}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| n-Butylbenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2-Dibromo-3-chloropropane (DCBP)$_{A}$ | <2 | - | <2 | <2 | - | | | µg/kg | 2 | A-T-006s |
| 1,2,4-Trichlorobenzene$_{A}$ | <3 | - | <3 | <3 | - | | | µg/kg | 3 | A-T-006s |
| Hexachlorobutadiene$_{A}^{\#}$ | <1 | - | <1 | <1 | - | | | µg/kg | 1 | A-T-006s |
| 1,2,3-Trichlorobenzene$_{A}$ | <3 | - | <3 | <3 | - | | | µg/kg | 3 | A-T-006s |

**Envirolab Job Number: 22/06796**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: 326R**

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | 326R.BH311. ES06 | 326R.BH312. ES03 | 326R.BH314. ES10 | 326R.BH315. ES02 | 326R.BH315. ES04 | | | | | |
| Client Sample ID | BH311 | BH312 | BH314 | BH315 | BH315 | | | | | |
| Depth to Top | 5.00 | 1.00 | 7.50 | 0.50 | 1.20 | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | | | | | | | | | | |
| Sample Type | Soil - ES | Soil - ES | Soil - ES | Soil - ES | Soil - ES | | | | | |
| Sample Matrix Code | 3AB | 4A | 5A | 5A | 5A | | | | | |
| **TPH UKCWG with Clean Up** | | | | | | | | | | |
| Ali >C5-C6$_A^{\#}$ | <0.05 | <0.01 | <0.01 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| Ali >C6-C8$_A^{\#}$ | <0.05 | <0.01 | <0.01 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| Ali >C8-C10$_A$ | <1 | <1 | <1 | <1 | - | | | mg/kg | 1 | A-T-055s |
| Ali >C10-C12$_A^{M\#}$ | <1 | <1 | <1 | <1 | - | | | mg/kg | 1 | A-T-055s |
| Ali >C12-C16$_A^{M\#}$ | <1 | <1 | <1 | 1 | - | | | mg/kg | 1 | A-T-055s |
| Ali >C16-C21$_A^{M\#}$ | <1 | <1 | 3 | 4 | - | | | mg/kg | 1 | A-T-055s |
| Ali >C21-C35$_A^{M\#}$ | 2 | 11 | 120 | 16 | - | | | mg/kg | 1 | A-T-055s |
| Ali >C35-C44$_A$ | <1 | 5 | 10 | 9 | - | | | mg/kg | 1 | A-T-055s |
| Total Aliphatics$_A$ | 2 | 16 | 134 | 29 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C5-C7$_A^{\#}$ | <0.05 | <0.01 | <0.01 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| Aro >C7-C8$_A^{\#}$ | <0.05 | <0.01 | <0.01 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| Aro >C8-C10$_A$ | <1 | <1 | <1 | 7 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C10-C12$_A$ | <1 | <1 | <1 | 7 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C12-C16$_A$ | 2 | 4 | 3 | 15 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C16-C21$_A^{M\#}$ | 3 | 15 | 21 | 20 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C21-C35$_A^{M\#}$ | 3 | 46 | 74 | 67 | - | | | mg/kg | 1 | A-T-055s |
| Aro >C35-C44$_A$ | <1 | 3 | 2 | 7 | - | | | mg/kg | 1 | A-T-055s |
| Total Aromatics$_A$ | 9 | 68 | 100 | 124 | - | | | mg/kg | 1 | A-T-055s |
| TPH (Ali & Aro >C5-C44)$_A$ | 11 | 84 | 234 | 153 | - | | | mg/kg | 1 | A-T-055s |
| BTEX - Benzene$_A^{\#}$ | <0.05 | <0.01 | <0.01 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Toluene$_A^{\#}$ | <0.05 | <0.01 | <0.01 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| BTEX - Ethyl Benzene$_A^{\#}$ | <0.05 | <0.01 | <0.01 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| BTEX - m & p Xylene$_A^{\#}$ | <0.05 | <0.01 | <0.01 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| BTEX - o Xylene$_A^{\#}$ | <0.05 | <0.01 | <0.01 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |
| MTBE$_A^{\#}$ | <0.05 | <0.01 | <0.01 | <0.01 | - | | | mg/kg | 0.01 | A-T-022s |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

**Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

**Key:**

IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** 326R

**Project No:** 22/06796

**Date Received:** 12/07/2022 (am)

**Cool Box Temperatures (°C):** 17.1

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 |
|---|---|---|---|---|---|
| Client Sample No | 326R.BH311 .ES06 | 326R.BH312 .ES03 | 326R.BH314 .ES10 | 326R.BH315 .ES02 | 326R.BH315 .ES04 |
| Client Sample ID/Depth | BH311 5.00m | BH312 1.00m | BH314 7.50m | BH315 0.50m | BH315 1.20m |
| Date Sampled | | | | | |
| Deviation Code | | | | | |
| E (no date) | ✓ | ✓ | ✓ | ✓ | ✓ |

*Key*
*E (no date)* *No sampling date provided (all results affected if not provided)*

*Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.*

# Envirolab Analysis Dates

| Lab Sample ID | 22/06796/1 | 22/06796/2 | 22/06796/3 | 22/06796/4 | 22/06796/5 |
|---|---|---|---|---|---|
| Client Sample No | 326R.BH311 .ES06 | 326R.BH312 .ES03 | 326R.BH314 .ES10 | 326R.BH315 .ES02 | 326R.BH315 .ES04 |
| Client Sample ID/Depth | BH311 5.00m | BH312 1.00m | BH314 7.50m | BH315 0.50m | BH315 1.20m |
| Date Sampled | | | | | |
| A-T-004s | | | 22/07/2022 | 22/07/2022 | 22/07/2022 |
| A-T-006s | 20/07/2022 | | 20/07/2022 | 20/07/2022 | |
| A-T-007s | | | | | 25/07/2022 |
| A-T-019s | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 |
| A-T-022s | 22/07/2022 | 20/07/2022 | 20/07/2022 | 20/07/2022 | 20/07/2022 |
| A-T-024s | 22/07/2022 | 22/07/2022 | 22/07/2022 | 22/07/2022 | |
| A-T-025w | | | | | 25/07/2022 |
| A-T-026s | 22/07/2022 | | 22/07/2022 | 22/07/2022 | |
| A-T-026w | | | | | 25/07/2022 |
| A-T-027s | 21/07/2022 | 21/07/2022 | 21/07/2022 | 21/07/2022 | |
| A-T-029s | 22/07/2022 | | 22/07/2022 | 22/07/2022 | |
| A-T-030s | 21/07/2022 | | 21/07/2022 | 13/07/2022 | |
| A-T-031s | 22/07/2022 | 25/07/2022 | 25/07/2022 | 25/07/2022 | |
| A-T-031w | | | | | 25/07/2022 |
| A-T-032s | 25/07/2022 | 25/07/2022 | 25/07/2022 | 25/07/2022 | 25/07/2022 |
| A-T-032w | | | | | 25/07/2022 |
| A-T-037w | | | | | 25/07/2022 |
| A-T-040s | | | 21/07/2022 | 21/07/2022 | |
| A-T-041s | | | | 20/07/2022 | |
| A-T-042sTCN | 20/07/2022 | 20/07/2022 | 20/07/2022 | 20/07/2022 | |
| A-T-043-s | 20/07/2022 | | 20/07/2022 | 20/07/2022 | |
| A-T-044 | 20/07/2022 | 20/07/2022 | 20/07/2022 | 20/07/2022 | 20/07/2022 |
| A-T-045 | 13/07/2022 | 13/07/2022 | 13/07/2022 | 13/07/2022 | |
| A-T-050s | 20/07/2022 | 21/07/2022 | 20/07/2022 | 20/07/2022 | |
| A-T-050w | | | | | 25/07/2022 |
| A-T-052s | 26/07/2022 | | 26/07/2022 | 26/07/2022 | |
| A-T-054 | | | | 14/07/2022 | |
| A-T-055s | 25/07/2022 | 25/07/2022 | 25/07/2022 | 25/07/2022 | |
| Calc-no stones | | | | | 25/07/2022 |
| Probe (w) | | | | | 25/07/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# Final Test Report

| | | | |
|---|---|---|---|
| Envirolab Job Number: | 22/06796 | | |
| Issue Number: | 1 | Date: | 26-Jul-22 |

Client: BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK, WA5 7ZT

| | |
|---|---|
| Project Manager: | Andy Bird |
| Project Name: | Victoria North HIF Infrastructure & Enabling Works |
| Project Ref: | 326R |
| Order No: | RIT262 915 759 |
| Date Samples Received: | 8-Jul-22 |
| Date Instructions Received: | 12-Jul-22 |
| Date Analysis Completed: | 26-Jul-22 |

**Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

**Notes - General**

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Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

**Predominant Matrix Codes:** 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

**Secondary Matrix Codes**: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

**HWOL TPH Code:** EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Richard Wong
Client Manager

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***Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.***

| Sample Details | | | | | | Landfill Waste Acceptance Criteria Limits | | |
|---|---|---|---|---|---|---|---|---|
| Lab Sample ID | Method | ISO17025 | MCERTS | 22/06796/5 | | | | |
| Client Sample Number | | | | 326R.BH315.ES04 | | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| Client Sample ID | | | | BH315 | | | | |
| Depth to Top | | | | 1.2 | | | | |
| Depth to Bottom | | | | | | | | |
| Date Sampled | | | | | | | | |
| Sample Type | | | | Soil - ES | | | | |
| Sample Matrix Code | | | | 5A | | | | |
| **Solid Waste Analysis** | | | | | | | | |
| pH (pH Units)$_D$ | A-T-031 | N | N | | | - | >6 | - |
| ANC to pH 4 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| ANC to pH 6 (mol/kg)$_D$ | A-T-ANC | N | N | | | - | to be evaluated | to be evaluated |
| Loss on Ignition (%)$_D$ | A-T-030 | N | N | | | - | - | 10 |
| Total Organic Carbon (%)$_D$ | A-T-032 | N | N | **1.15** | | 3 | 5 | 6 |
| PAH Sum of 17 (mg/kg) $_A$ | A-T-019 | N | N | **2.47** | | 100 | - | - |
| Mineral Oil (mg/kg)$_{A\ EH\_CU\_1D\_AL}$ | A-T-007 | N | N | **17** | | 500 | - | - |
| Sum of 7 PCBs (mg/kg)$_A$ | A-T-004 | N | N | **<0.007** | | 1 | - | - |
| Sum of BTEX (mg/kg)$_A$ | A-T-022 | N | N | **0.01** | | 6 | - | - |
| **Eluate Analysis** | | | | **10:1** | **10:1** | **Limit values for compliance leaching test using** | | |
| | | | | **mg/l** | **mg/kg** | **BS EN 12457-2 at L/S 10 l/kg (mg/kg)** | | |
| Arsenic | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 2 | 25 |
| Barium | A-T-025 | N | N | 0.119 | **1.190** | 20 | 100 | 300 |
| Cadmium | A-T-025 | N | N | <0.001 | **<0.01** | 0.04 | 1 | 5 |
| Chromium | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 70 |
| Copper | A-T-025 | N | N | <0.004 | **<0.04** | 2 | 50 | 100 |
| Mercury | A-T-025 | N | N | <0.0005 | **<0.005** | 0.01 | 0.2 | 2 |
| Molybdenum | A-T-025 | N | N | 0.002 | **0.020** | 0.5 | 10 | 30 |
| Nickel | A-T-025 | N | N | <0.002 | **<0.02** | 0.4 | 10 | 40 |
| Lead | A-T-025 | N | N | <0.001 | **<0.01** | 0.5 | 10 | 50 |
| Antimony | A-T-025 | N | N | 0.002 | **0.020** | 0.06 | 0.7 | 5 |
| Selenium | A-T-025 | N | N | <0.001 | **<0.01** | 0.1 | 0.5 | 7 |
| Zinc | A-T-025 | N | N | 0.006 | **0.060** | 4 | 50 | 200 |
| Chloride | A-T-026 | N | N | 4 | **37** | 800 | 15000 | 25000 |
| Fluoride | A-T-026 | N | N | 0.4 | **4.0** | 10 | 150 | 500 |
| Sulphate as $SO_4$ | A-T-026 | N | N | 11 | **112** | 1000 | 20000 | 50000 |
| Total Dissolved Solids | A-T-035 | N | N | 63 | **630** | 4000 | 60000 | 100000 |
| Phenol Index | A-T-050 | N | N | <0.01 | **<0.1** | 1 | - | - |
| Dissolved Organic Carbon | A-T-032 | N | N | 21.20 | **212** | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH (pH Units) | A-T-031 | N | N | 7.0 | | | | |
| Conductivity (µS/cm) | A-T-037 | N | N | 127 | | | | |
| Mass Sample (kg) | | | | 0.215 | | | | |
| Dry Matter (%) | A-T-044 | N | N | 81.5 | | | | |

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

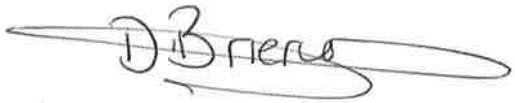
# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/07116
**Issue Number:** 1 **Date:** 01 August, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF Infrastructure * Enabling
**Project Ref:** 326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 21/07/22
**Date Instructions Received:** 21/07/22
**Date Analysis Completed:** 29/07/22

**Approved by:**



Danielle Brierley
Deputy Client Services Supervisor

UKAS TESTING
1247

**Envirolab Job Number: 22/07116**

**Client Project Name: Victoria North HIF Infrastructure * Enabling**

**Client Project Ref: 326R**

| Lab Sample ID | 22/07116/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH322 | | | | | | | | | |
| Depth to Top | 4.70 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 19-Jul-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| pH (w)$_A^{\#}$ | 7.27 | | | | | | | pH | 0.01 | A-T-031w |
| Hardness Total$_A^{\#}$ | 666 | | | | | | | mg/l Ca CO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_A^{\#}$ | 0.59 | | | | | | | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_A^{\#}$ | 17 | | | | | | | mg/l | 1 | A-T-026w |
| Cyanide (total) (w)$_A^{\#}$ | 0.017 | | | | | | | mg/l | 0.005 | A-T-042wTCN |
| Phenols - Total by HPLC (w)$_A$ | <0.01 | | | | | | | mg/l | 0.01 | A-T-050w |
| DOC (w)$_A^{\#}$ | 60.1 | | | | | | | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_A$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_A^{\#}$ | 7 | | | | | | | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_A^{\#}$ | 0.8 | | | | | | | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_A^{\#}$ | 232 | | | | | | | mg/l | 1 | A-T-049w |
| Copper (dissolved)$_A$ | 13 | | | | | | | µg/l | 4 | A-T-025w |
| Chromium (dissolved)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Lead (dissolved)$_A^{\#}$ | 3 | | | | | | | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_A^{\#}$ | 6440 | | | | | | | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_A^{\#}$ | <0.1 | | | | | | | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_A^{\#}$ | 28 | | | | | | | µg/l | 2 | A-T-025w |
| Selenium (dissolved)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_A^{\#}$ | 154 | | | | | | | µg/l | 2 | A-T-025w |

**Envirolab Job Number: 22/07116**

**Client Project Name: Victoria North HIF Infrastructure * Enabling**

**Client Project Ref: 326R**

| Lab Sample ID | 22/07116/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH322 | | | | | | | | | |
| Depth to Top | 4.70 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 19-Jul-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_A^{\#}$ | 0.09 | | | | | | | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_A^{\#}$ | 0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_A^{\#}$ | 0.04 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_A^{\#}$ | 0.02 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_A^{\#}$ | 0.03 | | | | | | | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_A^{\#}$ | 0.09 | | | | | | | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_A^{\#}$ | 0.06 | | | | | | | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_A^{\#}$ | <0.01 | | | | | | | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_A^{\#}$ | 0.31 | | | | | | | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_A^{\#}$ | 0.13 | | | | | | | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_A^{\#}$ | 0.08 | | | | | | | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_A^{\#}$ | 0.86 | | | | | | | µg/l | 0.01 | A-T-019w |

**Envirolab Job Number: 22/07116**

**Client Project Name: Victoria North HIF Infrastructure * Enabling**

**Client Project Ref: 326R**

| Lab Sample ID | 22/07116/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | | | | | | | | | | |
| Client Sample ID | BH322 | | | | | | | | | |
| Depth to Top | 4.70 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 19-Jul-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **TPH UKCWG (w) with Clean Up** | | | | | | | | | | |
| Ali >C5-C6 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Ali >C6-C8 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Ali >C8-C10 $(w)_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C10-C12 $(w)_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C12-C16 $(w)_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C16-C21 $(w)_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C21-C35 $(w)_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C35-C44 $(w)_A$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Total Aliphatics $(w)_A$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C5-C7 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Aro >C7-C8 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Aro >C8-C10 $(w)_A$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C10-C12 $(w)_A^{\#}$ | 6 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C12-C16 $(w)_A^{\#}$ | 185 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C16-C21 $(w)_A^{\#}$ | 23 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C21-C35 $(w)_A$ | <10 | | | | | | | µg/l | 10 | A-T-055w |
| Aro >C35-C44 $(w)_A$ | <5 | | | | | | | µg/l | 5 | A-T-055w |
| Total Aromatics $(w)_A$ | 214 | | | | | | | µg/l | 10 | A-T-055w |
| TPH (Ali & Aro >C5-C44) $(w)_A$ | 214 | | | | | | | µg/l | 10 | A-T-055w |
| BTEX - Benzene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - Toluene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - o Xylene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| MTBE $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure * Enabling

**Clients Project No:** 326R

**Project No:** 22/07116

**Date Received:** 21/07/2022 (am)

**Cool Box Temperatures (°C):** 18.2

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/07116/1 |
|---|---|
| Client Sample No | |
| Client Sample ID/Depth | BH322<br>4.70m |
| Date Sampled | 19/07/22 |
| A-T-019w | 29/07/2022 |
| A-T-022w | 26/07/2022 |
| A-T-025w | 27/07/2022 |
| A-T-026w | 29/07/2022 |
| A-T-031w | 22/07/2022 |
| A-T-032w | 22/07/2022 |
| A-T-033w | 25/07/2022 |
| A-T-042wTCN | 26/07/2022 |
| A-T-049w | 22/07/2022 |
| A-T-050w | 26/07/2022 |
| A-T-055w | 29/07/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

# FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 22/07725
**Issue Number:** 1 **Date:** 17 August, 2022

**Client:**
BAM Ritchies Warrington
Unit 5
Taurus Park
Europa Boulevard
Warrington
UK
WA5 7ZT

**Project Manager:** Andy Bird
**Project Name:** Victoria North HIF Infrastructure & Enabling Works
**Project Ref:** BAX.326R
**Order No:** RIT 262 915 759
**Date Samples Received:** 08/08/22
**Date Instructions Received:** 08/08/22
**Date Analysis Completed:** 17/08/22

**Approved by:**



Richard Wong
Client Manager

UKAS TESTING
1247

**Envirolab Job Number: 22/07725**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: BAX.326R**

| Lab Sample ID | 22/07725/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | TT301 | | | | | | | | | |
| Client Sample ID | 326R.TT301.EW05 | | | | | | | | | |
| Depth to Top | 2.00 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 08-Aug-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| pH (w)$_A^\#$ | 7.25 | | | | | | | pH | 0.01 | A-T-031w |
| Hardness Total$_A^\#$ | 2636 | | | | | | | mg/l CaCO3 | 2 | A-T-049w |
| Ammoniacal nitrogen as N (w)$_A^\#$ | 1.35 | | | | | | | mg/l | 0.02 | A-T-033w |
| Chloride (w)$_A^\#$ | 13 | | | | | | | mg/l | 1 | A-T-026w |
| Cyanide (free) (w)$_A^\#$ | <0.005 | | | | | | | mg/l | 0.005 | A-T-042wFCN |
| Cyanide (total) (w)$_A^\#$ | 0.031 | | | | | | | mg/l | 0.005 | A-T-042wTCN |
| Cyanide (complex)$_A^\#$ | 0.031 | | | | | | | mg/l | 0.005 | A-T-042wCCN |
| Thiocyanate (w)$_A$ | <0.1 | | | | | | | mg/l | 0.1 | A-T-041w |
| Phenols - Total by HPLC (w)$_A$ | <0.01 | | | | | | | mg/l | 0.01 | A-T-050w |
| DOC (w)$_A^\#$ | 11.1 | | | | | | | mg/l | 2 | A-T-032w |
| Antimony (dissolved)$_A$ | <5 | | | | | | | µg/l | 1 | A-T-025w |
| Arsenic (dissolved)$_A^\#$ | 54 | | | | | | | µg/l | 1 | A-T-025w |
| Beryllium (dissolved)$_A^\#$ | <5 | | | | | | | µg/l | 1 | A-T-025w |
| Cadmium (dissolved)$_A^\#$ | <1.0 | | | | | | | µg/l | 0.2 | A-T-025w |
| Calcium (dissolved)$_A^\#$ | 915 | | | | | | | mg/l | 1 | A-T-049w |
| Cobalt (dissolved)$_A^\#$ | 13 | | | | | | | µg/l | 1 | A-T-025w |
| Copper (dissolved)$_A$ | <20 | | | | | | | µg/l | 4 | A-T-025w |
| Chromium (dissolved)$_A^\#$ | <5 | | | | | | | µg/l | 1 | A-T-025w |
| Chromium (hexavalent) (w)$_A^\#$ | <0.01 | | | | | | | mg/l | 0.01 | A-T-040w |
| Lead (dissolved)$_A^\#$ | <5 | | | | | | | µg/l | 1 | A-T-025w |
| Manganese (dissolved)$_A^\#$ | 8620 | | | | | | | µg/l | 1 | A-T-025w |
| Mercury (dissolved)$_A^\#$ | <0.5 | | | | | | | µg/l | 0.1 | A-T-025w |
| Nickel (dissolved)$_A^\#$ | <10 | | | | | | | µg/l | 2 | A-T-025w |
| Selenium (dissolved)$_A^\#$ | <5 | | | | | | | µg/l | 1 | A-T-025w |
| Vanadium (dissolved)$_A^\#$ | <5 | | | | | | | µg/l | 1 | A-T-025w |
| Zinc (dissolved)$_A^\#$ | 51 | | | | | | | µg/l | 2 | A-T-025w |

**Envirolab Job Number: 22/07725**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: BAX.326R**

| Lab Sample ID | 22/07725/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | TT301 | | | | | | | | | |
| Client Sample ID | 326R.TT301.EW05 | | | | | | | | | |
| Depth to Top | 2.00 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 08-Aug-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **PAH 16MS (w)** | | | | | | | | | | |
| Acenaphthene (w)$_A^{\#}$ | 4.56 | | | | | | | µg/l | 0.01 | A-T-019w |
| Acenaphthylene (w)$_A^{\#}$ | 2.15 | | | | | | | µg/l | 0.01 | A-T-019w |
| Anthracene (w)$_A^{\#}$ | 3.53 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)anthracene (w)$_A^{\#}$ | 2.50 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(a)pyrene (w)$_A^{\#}$ | 2.17 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(b)fluoranthene (w)$_A^{\#}$ | 1.80 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(ghi)perylene (w)$_A^{\#}$ | 1.06 | | | | | | | µg/l | 0.01 | A-T-019w |
| Benzo(k)fluoranthene (w)$_A^{\#}$ | 0.47 | | | | | | | µg/l | 0.01 | A-T-019w |
| Chrysene (w)$_A^{\#}$ | 2.42 | | | | | | | µg/l | 0.01 | A-T-019w |
| Dibenzo(ah)anthracene (w)$_A^{\#}$ | <0.10 | | | | | | | µg/l | 0.01 | A-T-019w |
| Fluoranthene (w)$_A^{\#}$ | 4.53 | | | | | | | µg/l | 0.01 | A-T-019w |
| Fluorene (w)$_A^{\#}$ | 2.34 | | | | | | | µg/l | 0.01 | A-T-019w |
| Indeno(123-cd)pyrene (w)$_A^{\#}$ | 0.82 | | | | | | | µg/l | 0.01 | A-T-019w |
| Naphthalene (w)$_A^{\#}$ | <0.10 | | | | | | | µg/l | 0.01 | A-T-019w |
| Phenanthrene (w)$_A^{\#}$ | 6.48 | | | | | | | µg/l | 0.01 | A-T-019w |
| Pyrene (w)$_A^{\#}$ | 11.4 | | | | | | | µg/l | 0.01 | A-T-019w |
| Total PAH 16MS (w)$_A^{\#}$ | 46.2 | | | | | | | µg/l | 0.01 | A-T-019w |

**Envirolab Job Number:** 22/07725

**Client Project Name:** Victoria North HIF Infrastructure & Enabling Works

**Client Project Ref:** BAX.326R

| Lab Sample ID | 22/07725/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | TT301 | | | | | | | | | |
| Client Sample ID | 326R.TT301.EW05 | | | | | | | | | |
| Depth to Top | 2.00 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 08-Aug-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **Speciated PCB-WHO12 (w)** | | | | | | | | | | |
| PCB BZ 81 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 105 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 114 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 118 (w)$_A$$^{\#}$ | NDP | | | | | | | µg/l | 0.002 | A-T-004w |
| PCB BZ 123 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 126 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 156 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 157 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 167 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 169 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 189 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| PCB BZ 77 (w)$_A$ | NDP | | | | | | | µg/l | 0.001 | A-T-004w |
| Total Speciated PCB-WHO12 (w)$_A$ | - | | | | | | | µg/l | 0.001 | A-T-004w |

| Lab Sample ID | 22/07725/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | TT301 | | | | | | | | | |
| Client Sample ID | 326R.TT301.EW05 | | | | | | | | | |
| Depth to Top | 2.00 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 08-Aug-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **SVOC (excluding PAH-16) (w)** | | | | | | | | | | |
| 2,4,5-Trichlorophenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4,6-Trichlorophenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dichlorophenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dimethylphenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 2,4-Dinitrotoluene$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 2,6-Dinitrotoluene$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Chloronaphthalene$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Chlorophenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Methylnaphthalene$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Methylphenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 2-Nitrophenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Bromophenyl phenyl ether$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Chloro-3-methylphenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroisopropyl)ether$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 3+4-Methylphenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| 4-Nitrophenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethyl)ether$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-chloroethoxy)methane$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Bis(2-ethylhexyl)phthalate$_A$ | <100 | | | | | | | µg/l | 10 | A-T-052w |
| Butylbenzyl phthalate$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Carbazole$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Dibenzofuran$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| n-Dibutylphthalate$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| n-Dioctylphthalate$_A$ | <100 | | | | | | | µg/l | 10 | A-T-052w |
| n-Nitroso-n-dipropylamine$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Diethyl phthalate$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Dimethyl phthalate$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachlorobenzene SVOC$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Pentachlorophenol SVOC$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Phenol$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachloroethane$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |

Envirolab Job Number: 22/07725

Client Project Name: Victoria North HIF Infrastructure & Enabling Works

Client Project Ref: BAX.326R

| Lab Sample ID | 22/07725/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | TT301 | | | | | | | | | |
| Client Sample ID | 326R.TT301.EW05 | | | | | | | | | |
| Depth to Top | 2.00 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 08-Aug-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| Nitrobenzene$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Isophorone$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Hexachlorocyclopentadiene$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |
| Perylene$_A$ | <10 | | | | | | | µg/l | 1 | A-T-052w |

| Lab Sample ID | 22/07725/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | TT301 | | | | | | | | | |
| Client Sample ID | 326R.TT301.EW05 | | | | | | | | | |
| Depth to Top | 2.00 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 08-Aug-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **VOC (w)** | | | | | | | | | | |
| Dichlorodifluoromethane$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chloromethane$_A$ | <10 | | | | | | | µg/l | 10 | A-T-006w |
| Vinyl Chloride$_A$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromomethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Trichlorofluoromethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| trans 1,2-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dichloromethane$_A$ | <5 | | | | | | | µg/l | 5 | A-T-006w |
| Carbon Disulphide$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| cis 1,2-Dichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromochloromethane$_A^{\#}$ | <5 | | | | | | | µg/l | 5 | A-T-006w |
| Chloroform$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 2,2-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloroethane$_A^{\#}$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,1,1-Trichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Benzene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Carbon Tetrachloride$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dibromomethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromodichloromethane$_A^{\#}$ | <10 | | | | | | | µg/l | 10 | A-T-006w |
| Trichloroethene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| cis 1,3-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| trans 1,3-Dichloropropene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,2-Trichloroethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Toluene$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,3-Dichloropropane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Dibromochloromethane$_A^{\#}$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| 1,2-Dibromoethane$_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |

**Envirolab Job Number: 22/07725**

**Client Project Name: Victoria North HIF Infrastructure & Enabling Works**

**Client Project Ref: BAX.326R**

| Lab Sample ID | 22/07725/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | TT301 | | | | | | | | | |
| Client Sample ID | 326R.TT301.EW05 | | | | | | | | | |
| Depth to Top | 2.00 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 08-Aug-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| Tetrachloroethene$_{A}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,1,2-Tetrachloroethane$_{A}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Chlorobenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Ethylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| m & p Xylene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromoform$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Styrene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,1,2,2-Tetrachloroethane$_{A}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| o-Xylene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2,3-Trichloropropane$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Isopropylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| Bromobenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 2-Chlorotoluene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| n-propylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 4-Chlorotoluene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2,4-Trimethylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 4-Isopropyltoluene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,3,5-Trimethylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dichlorobenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,4-Dichlorobenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| sec-Butylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| tert-Butylbenzene$_{A}^{\#}$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,3-Dichlorobenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| n-butylbenzene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |
| 1,2-Dibromo-3-chloropropane$_{A}^{\#}$ | <2 | | | | | | | µg/l | 2 | A-T-006w |
| 1,2,4-Trichlorobenzene$_{A}^{\#}$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| 1,2,3-Trichlorobenzene$_{A}^{\#}$ | <3 | | | | | | | µg/l | 3 | A-T-006w |
| Hexachlorobutadiene$_{A}^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-006w |

| Lab Sample ID | 22/07725/1 | | | | | | | Units | Limit of Detection | Method ref |
|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample No | TT301 | | | | | | | | | |
| Client Sample ID | 326R.TT301.EW05 | | | | | | | | | |
| Depth to Top | 2.00 | | | | | | | | | |
| Depth To Bottom | | | | | | | | | | |
| Date Sampled | 08-Aug-22 | | | | | | | | | |
| Sample Type | Water - EW | | | | | | | | | |
| Sample Matrix Code | N/A | | | | | | | | | |
| **TPH UKCWG (w) with Clean Up** | | | | | | | | | | |
| Ali >C5-C6 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Ali >C6-C8 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Ali >C8-C10 $(w)_A^{\#}$ | <50 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C10-C12 $(w)_A^{\#}$ | 227 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C12-C16 $(w)_A^{\#}$ | 2990 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C16-C21 $(w)_A^{\#}$ | 2380 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C21-C35 $(w)_A^{\#}$ | 4090 | | | | | | | µg/l | 5 | A-T-055w |
| Ali >C35-C44 $(w)_A$ | <50 | | | | | | | µg/l | 5 | A-T-055w |
| Total Aliphatics $(w)_A$ | 9690 | | | | | | | µg/l | 5 | Calc-As Recd |
| Aro >C5-C7 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Aro >C7-C8 $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| Aro >C8-C10 $(w)_A$ | 95 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C10-C12 $(w)_A^{\#}$ | 125 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C12-C16 $(w)_A^{\#}$ | 3260 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C16-C21 $(w)_A^{\#}$ | 3280 | | | | | | | µg/l | 5 | A-T-055w |
| Aro >C21-C35 $(w)_A$ | 1120 | | | | | | | µg/l | 10 | A-T-055w |
| Aro >C35-C44 $(w)_A$ | <50 | | | | | | | µg/l | 5 | A-T-055w |
| Total Aromatics $(w)_A$ | 7880 | | | | | | | µg/l | 10 | Calc-As Recd |
| TPH (Ali & Aro >C5-C44) $(w)_A$ | 17600 | | | | | | | µg/l | 10 | A-T-055w |
| BTEX - Benzene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - Toluene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - Ethyl Benzene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - m & p Xylene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| BTEX - o Xylene $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |
| MTBE $(w)_A^{\#}$ | <1 | | | | | | | µg/l | 1 | A-T-022w |

## REPORT NOTES

**General**

This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

**Soil chemical analysis:**
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

**TPH analysis of water by method A-T-007:**
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

**Electrical Conductivity of water by Method A-T-037:**
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

**Asbestos:**
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

**Predominant Matrix Codes:**
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
**Secondary Matrix Codes:**
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
E = contains roots/twigs.

**Key:**
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
Subscript "^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
EPH CWG results have humics mathematically subtracted through instrument calculation
TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

**EPH CWG GCxGC ID from TPH CWG**

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

# Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** BAM Ritchies Warrington, Unit 5, Taurus Park, Europa Boulevard, Warrington, UK, WA5 7ZT

**Project:** Victoria North HIF Infrastructure & Enabling Works

**Clients Project No:** BAX.326R

**Project No:** 22/07725

**Date Received:** 08/08/2022 (pm)

**Cool Box Temperatures (°C):** 17.4

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

# Envirolab Analysis Dates

| Lab Sample ID | 22/07725/1 |
|---|---|
| Client Sample No | TT301 |
| Client Sample ID/Depth | 326R.TT301.EW05 2.00m |
| Date Sampled | 08/08/22 |
| A-T-004w | 11/08/2022 |
| A-T-006w | 10/08/2022 |
| A-T-019w | 15/08/2022 |
| A-T-022w | 11/08/2022 |
| A-T-025w | 10/08/2022 |
| A-T-026w | 09/08/2022 |
| A-T-031w | 11/08/2022 |
| A-T-032w | 12/08/2022 |
| A-T-033w | 11/08/2022 |
| A-T-040w | 09/08/2022 |
| A-T-041w | 09/08/2022 |
| A-T-042wCCN | 12/08/2022 |
| A-T-042wFCN | 12/08/2022 |
| A-T-042wTCN | 10/08/2022 |
| A-T-049w | 09/08/2022 |
| A-T-050w | 11/08/2022 |
| A-T-052w | 11/08/2022 |
| A-T-055w | 17/08/2022 |
| Calc-As Recd | 17/08/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**

Element Materials Technology
Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

P: +44 (0) 1244 833780
F: +44 (0) 1244 833781
W: www.element.com

BAM Ritchies
Unit 5
Taurus Park
Gemini Business Park
Warrington
WA5 7ZT

| | |
|---|---|
| **Attention :** | Andy Bird |
| **Date :** | 27th July, 2022 |
| **Your reference :** | 326R |
| **Our reference :** | Test Report 22/11805 Batch 1 |
| **Location :** | - |
| **Date samples received :** | 19th July, 2022 |
| **Status :** | Final Report |
| **Issue :** | 1 |

One sample was received for analysis on 19th July, 2022 and was scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

**Authorised By:**

**Paul Boden BSc**
**Senior Project Manager**

Please include all sections of this report if it is reproduced

## Element Materials Technology

**Client Name:** BAM Ritchies
**Reference:** 326R
**Location:** -
**Contact:** Andy Bird
**EMT Job No:** 22/11805

**Report : Gas**

| EMT Sample No. | 1 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | BH314 | | | | | | | | | | | | |
| Depth | | | | | | | | | | | | | |
| COC No / misc | | | | | | | | | | | | | |
| Containers | GC | | | | | | | | | | | | |
| Sample Date | 19/07/2022 11:00 | | | | | | | | | | | | |
| Sample Type | Gas | | | | | | | | | | | | |
| Batch Number | 1 | | | | | | | | | | | | |
| Date of Receipt | 19/07/2022 | | | | | | | | | | | | |

Please see attached notes for all abbreviations and acronyms

| | | | | | | | | | | | LOD/LOR | Units | Method No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon Dioxide | 24.67 | | | | | | | | | | <0.05 | % | TM69/PM0 |
| Carbon Monoxide | <0.05 | | | | | | | | | | <0.05 | % | TM69/PM0 |
| Hydrogen | <0.5 | | | | | | | | | | <0.5 | % | TM69/PM0 |
| Methane | 37.85 | | | | | | | | | | <0.05 | % | TM69/PM0 |
| Methane | >>374968 | | | | | | | | | | <5 | ppmV | TM69/PM0 |
| Nitrogen | 33.9 | | | | | | | | | | <0.5 | % | TM69/PM0 |
| Oxygen | 3.5 | | | | | | | | | | <0.5 | % | TM69/PM0 |
| Hydrogen Sulphide | <1 | | | | | | | | | | <1 | ppm | TM119/PM0 |

## Element Materials Technology

**Client Name:** BAM Ritchies
**Reference:** 326R
**Location:** -
**Contact:** Andy Bird

**Sample Date:** 19 Jul 2022
**Date of Receipt:** 19 Jul 2022
**Date Analysed:** 25 Jul 2022

**Sample ID:** BH314
**Depth:**
**EMT Job No:** 22/11805
**EMT Sample No:** 1
**Matrix:** Air
**Method:** TM68 VOCs in gases (GC-MS)

**Canister Serial number:** SQT 482 0.45
**Sample Train Serial number:** ST-404

**Q* - Qualifiers**

**B** Indicates analyte found in associated method blank
**++** Indicates value exceeds calibration range

**Key**

**MDL** Method Detection Limit
**RL** Reporting Limit
**#** ISO 17025 (UKAS) accredited

| Cas No | Molecular Weight | | Compound | Q* | RESULT ppbv | RESULT ug/m$^3$ | RL ppbv | MDL ppbv | RL ug/m$^3$ | MDL ug/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 75-45-6 | 86.77 | | Chlorodifluoromethane (HCFC-22) | | <2 | <7 | <2 | <2 | <7 | <7 |
| 75-71-8 | 120.91 | | Dichlorodifluoromethane (F-12) | | <2.5 | <12.4 | <2.5 | <2.5 | <12.4 | <12.4 |
| 74-87-3 | 50.49 | | Chloromethane | | 25.3 | 52.2 | <1.5 | <1.5 | <3.1 | <3.1 |
| 76-14-2 | 170.92 | | 1,2-Dichlorotetrafluoroethane (F-114) | | <1.5 | <10.5 | <1.5 | <1.5 | <10.5 | <10.5 |
| 115-11-7 | 56.12 | | Isobutene | | 176.2 | 404.4 | <1.5 | <1.5 | <3.4 | <3.4 |
| 106-99-0 | 54.09 | | 1,3-Butadiene | | <1.5 | <3.3 | <1.5 | <1.5 | <3.3 | <3.3 |
| 74-83-9 | 94.95 | # | Bromomethane | | <1.5 | <5.8 | <1.5 | <1.5 | <5.8 | <5.8 |
| 75-00-3 | 64.52 | # | Chloroethane | | <1.5 | <4 | <1.5 | <1.5 | <4 | <4 |
| 64-17-5 | 46.07 | | Ethanol | | <100 | <188.4 | <100 | <100 | <188.4 | <188.4 |
| 75-05-8 | 41.05 | | Acetonitrile | | <1.5 | <2.5 | <1.5 | <1.5 | <2.5 | <2.5 |
| 107-02-8 | 56.06 | | Acrolein | | <2.5 | <5.7 | <2.5 | <2.5 | <5.7 | <5.7 |
| | 58.08 | | Acetone + Propanal | | 23 | 55 | <6 | <6 | <14 | <14 |
| 75-69-4 | 137.36 | # | Trichlorofluoromethane (F-11) | | <1.5 | <8.4 | <1.5 | <1.5 | <8.4 | <8.4 |
| 67-63-0 | 60.09 | | 2-Propanol | | 9 | 22 | <6 | <6 | <15 | <15 |
| 109-66-0 | 72.15 | | Pentane | | 10 | 29.5 | <1.5 | <1.5 | <4.4 | <4.4 |
| 78-79-5 | 68.12 | | Isoprene | | <2 | <6 | <2 | <2 | <6 | <6 |
| 74-88-4 | 141.94 | | Methyl Iodide | | <1.5 | <8.7 | <1.5 | <1.5 | <8.7 | <8.7 |
| 75-35-4 | 96.95 | # | 1,1-Dichloroethene (1,1 DCE) | | <1.5 | <5.9 | <1.5 | <1.5 | <5.9 | <5.9 |
| 75-09-2 | 84.94 | # | Methylene Chloride | | <14.4 | <50 | <14.4 | <14.4 | <50 | <50 |
| 76-13-1 | 187.37 | # | Trichlorotrifluoroethane | | <1.5 | <11.5 | <1.5 | <1.5 | <11.5 | <11.5 |
| 75-15-0 | 76.14 | | Carbon Disulfide | | 3.3 | 10.3 | <1.5 | <1.5 | <4.7 | <4.7 |
| 71-23-8 | 60.09 | | 1-Propanol | | <1.5 | <3.7 | <1.5 | <1.5 | <3.7 | <3.7 |
| 78-85-3 | 70.09 | | Methylacrolein | | <1.5 | <4.3 | <1.5 | <1.5 | <4.3 | <4.3 |
| 75-34-3 | 98.97 | # | 1,1-Dichloroethane | | <1.5 | <6.1 | <1.5 | <1.5 | <6.1 | <6.1 |
| 287-92-3 | 70.14 | | Cyclopentane | | <1.5 | <4.3 | <1.5 | <1.5 | <4.3 | <4.3 |
| 78-94-4 | 70.09 | | Methyl Vinyl Ketone | | <1.6 | <4.6 | <1.6 | <1.6 | <4.6 | <4.6 |
| 1634-04-4 | 88.15 | | Methyl tertiary butyl ether | | <1.5 | <5.4 | <1.5 | <1.5 | <5.4 | <5.4 |
| 108-05-4 | 86.09 | | Vinyl Acetate | | <1.5 | <5.3 | <1.5 | <1.5 | <5.3 | <5.3 |
| 123-72-8 | 72.11 | | Butanal | | <2 | <6 | <2 | <2 | <6 | <6 |
| 78-93-3 | 72.1 | | 2-Butanone (MEK) | | 7 | 21 | <2 | <2 | <6 | <6 |
| 156-59-2 | 96.94 | # | cis-1,2-Dichloroethene | | <1 | <4 | <1 | <1 | <4 | <4 |
| 110-54-3 | 86.17 | | Hexane | | 4.1 | 14.4 | <1.5 | <1.5 | <5.3 | <5.3 |
| 67-66-3 | 119.39 | # | Chloroform | | <1.5 | <7.3 | <1.5 | <1.5 | <7.3 | <7.3 |
| 107-06-2 | 98.96 | # | 1,2-Dichloroethane | | <1.5 | <6.1 | <1.5 | <1.5 | <6.1 | <6.1 |
| 71-55-6 | 133.42 | # | 1,1,1-Trichloroethane | | <1.5 | <8.2 | <1.5 | <1.5 | <8.2 | <8.2 |
| 71-36-3 | 74.12 | | 1-Butanol | | 4 | 12 | <3 | <3 | <9 | <9 |
| 71-43-2 | 78.11 | # | Benzene | | <1.5 | <4.8 | <1.5 | <1.5 | <4.8 | <4.8 |
| 56-23-5 | 153.84 | # | Carbon Tetrachloride | | <1.5 | <9.4 | <1.5 | <1.5 | <9.4 | <9.4 |
| 110-82-7 | 84.16 | | Cyclohexane | | <2 | <7 | <2 | <2 | <7 | <7 |

## Element Materials Technology

**Client Name:** BAM Ritchies
**Reference:** 326R
**Location:** -
**Contact:** Andy Bird

**Sample Date:** 19 Jul 2022
**Date of Receipt:** 19 Jul 2022
**Date Analysed:** 25 Jul 2022

**Sample ID:** BH314
**Depth:**
**EMT Job No:** 22/11805
**EMT Sample No:** 1
**Matrix:** Air
**Method:** TM68 VOCs in gases (GC-MS)

**Canister Serial number:** SQT 482 0.45
**Sample Train Serial number:** ST-404

**Q* - Qualifiers**

**B** Indicates analyte found in associated method blank
**++** Indicates value exceeds calibration range

**Key**

**MDL** Method Detection Limit
**RL** Reporting Limit
**#** ISO 17025 (UKAS) accredited

| Cas No | Molecular Weight | | Compound | Q* | RESULT | RESULT | RL | MDL | RL | MDL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | ppbv | ug/m$^3$ | ppbv | ppbv | ug/m$^3$ | ug/m$^3$ |
| 107-87-9 | 86.13 | | 2-Pentanone | | **<1.5** | **<5.3** | <1.5 | <1.5 | <5.3 | <5.3 |
| 110-62-3 | 86.13 | | Pentanal | | **<1.5** | **<5.3** | <1.5 | <1.5 | <5.3 | <5.3 |
| 96-22-0 | 86.13 | | 3-Pentanone | | **<1.5** | **<5.3** | <1.5 | <1.5 | <5.3 | <5.3 |
| 78-87-5 | 112.99 | # | 1,2-Dichloropropane | | **<1.5** | **<6.9** | <1.5 | <1.5 | <6.9 | <6.9 |
| 75-27-4 | 163.83 | | Bromodichloromethane | | **<1.5** | **<10.1** | <1.5 | <1.5 | <10.1 | <10.1 |
| 123-91-1 | 88.11 | | 1,4-Dioxane | | **<2** | **<7** | <2 | <2 | <7 | <7 |
| 79-01-6 | 131.4 | # | Trichloroethene (TCE) | | **<1.5** | **<8.1** | <1.5 | <1.5 | <8.1 | <8.1 |
| 10061-01-5 | 110.97 | | cis-1,3-Dichloropropene | | **<1.5** | **<6.8** | <1.5 | <1.5 | <6.8 | <6.8 |
| 108-10-1 | 100.16 | | 4-Methyl-2-pentanone | | **<1.5** | **<6.1** | <1.5 | <1.5 | <6.1 | <6.1 |
| 10061-02-6 | 110.97 | | trans-1,3-Dichloropropene | | **<1.5** | **<6.8** | <1.5 | <1.5 | <6.8 | <6.8 |
| 79-00-5 | 133.4 | # | 1,1,2-Trichloroethane | | **<1.5** | **<8.2** | <1.5 | <1.5 | <8.2 | <8.2 |
| 108-88-3 | 92.13 | # | Toluene | | **17.5** | **65.9** | <1.5 | <1.5 | <5.7 | <5.7 |
| 589-38-8 | 100.16 | | 3-Hexanone | | **<1.5** | **<6.1** | <1.5 | <1.5 | <6.1 | <6.1 |
| 591-78-6 | 100.16 | | 2-Hexanone | | **<1.5** | **<6.1** | <1.5 | <1.5 | <6.1 | <6.1 |
| 66-25-1 | 100.16 | | Hexanal | | **<1.5** | **<6.1** | <1.5 | <1.5 | <6.1 | <6.1 |
| 106-93-4 | 187.86 | # | 1,2-Dibromoethane | | **<1.5** | **<11.5** | <1.5 | <1.5 | <11.5 | <11.5 |
| 127-18-4 | 165.85 | # | Tetrachloroethene (PCE) | | **<1.5** | **<10.2** | <1.5 | <1.5 | <10.2 | <10.2 |
| 108-90-7 | 112.56 | # | Chlorobenzene | | **<1.5** | **<6.9** | <1.5 | <1.5 | <6.9 | <6.9 |
| 100-41-4 | 106.16 | # | Ethylbenzene | | **<1.5** | **<6.5** | <1.5 | <1.5 | <6.5 | <6.5 |
| 179601-23-1 | 106.17 | # | m/p-Xylene | | **3.5** | **15.2** | <1.5 | <1.5 | <6.5 | <6.5 |
| 75-25-2 | 252.77 | | Bromoform | | **<1.5** | **<15.5** | <1.5 | <1.5 | <15.5 | <15.5 |
| 100-42-5 | 104.14 | # | Styrene | | **2** | **8.5** | <1.5 | <1.5 | <6.4 | <6.4 |
| 79-34-5 | 167.85 | # | 1,1,2,2-Tetrachloroethane | | **<1.5** | **<10.3** | <1.5 | <1.5 | <10.3 | <10.3 |
| 95-47-6 | 106.17 | # | o-Xylene | | **<1.5** | **<6.5** | <1.5 | <1.5 | <6.5 | <6.5 |
| 108-67-8 | 120.2 | # | 1,3,5-Trimethylbenzene | | **<1.5** | **<7.4** | <1.5 | <1.5 | <7.4 | <7.4 |
| 95-63-6 | 120.19 | # | 1,2,4-Trimethylbenzene | | **<1.5** | **<7.4** | <1.5 | <1.5 | <7.4 | <7.4 |
| 541-73-1 | 147.01 | # | 1,3-Dichlorobenzene | | **<1.5** | **<9** | <1.5 | <1.5 | <9 | <9 |
| 100-44-7 | 126.58 | | Benzyl Chloride | | **<1.5** | **<7.8** | <1.5 | <1.5 | <7.8 | <7.8 |
| 106-46-7 | 147.01 | # | 1,4-Dichlorobenzene | | **<1.5** | **<9** | <1.5 | <1.5 | <9 | <9 |
| 526-73-8 | 120.2 | | 1,2,3-Trimethylbenzene | | **1.8** | **8.8** | <1.5 | <1.5 | <7.4 | <7.4 |
| 95-50-1 | 147 | # | 1,2-Dichlorobenzene | | **<1.5** | **<9** | <1.5 | <1.5 | <9 | <9 |
| 120-82-1 | 181.46 | | 1,2,4-Trichlorobenzene | | **<1.5** | **<11.1** | <1.5 | <1.5 | <11.1 | <11.1 |
| 91-20-3 | 128.17 | | Naphthalene | | **<0.32** | **<1.7** | <0.32 | <0.32 | <1.7 | <1.7 |
| | | | Sum of VOC TO15 compounds | | **286.7** | **719.2** | | | | |
| 460-00-4 | | | 4-Bromofluorobenzene Surrogate Recovery | | **98%** | | 0% | 0% | | |
| 75-01-4 | 62.5 | # | Vinyl Chloride | | **<1.5** | **<3.8** | <1.5 | <1.5 | <3.8 | <3.8 |
| | 81 | | Aliphatic >C4-C6 | | **177** | **586** | <10 | <10 | <33 | <33 |
| | 100 | | Aliphatic >C6-C8 | | **<10** | **<41** | <10 | <10 | <41 | <41 |
| | 130 | | Aliphatic >C8-C10 | | **<10** | **<53** | <10 | <10 | <53 | <53 |

## Element Materials Technology

**Client Name:** BAM Ritchies
**Reference:** 326R
**Location:** -
**Contact:** Andy Bird

**Sample Date:** 19 Jul 2022
**Date of Receipt:** 19 Jul 2022
**Date Analysed:** 25 Jul 2022

**Sample ID:** BH314
**Depth:**
**EMT Job No:** 22/11805
**EMT Sample No:** 1
**Matrix:** Air
**Method:** TM68 VOCs in gases (GC-MS)

**Canister Serial number:** SQT 482 0.45
**Sample Train Serial number:** ST-404

**Q* - Qualifiers**

**B** Indicates analyte found in associated method blank
**++** Indicates value exceeds calibration range

**Key**

**MDL** Method Detection Limit
**RL** Reporting Limit
**#** ISO 17025 (UKAS) accredited

| Cas No | Molecular Weight | Compound | Q* | RESULT ppbv | RESULT ug/m$^3$ | RL ppbv | MDL ppbv | RL ug/m$^3$ | MDL ug/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|
| | 160 | Aliphatic >C10-C12 | | **<10** | **<65** | <10 | <10 | <65 | <65 |
| | 78.11 | Aromatic >C5-EC7 (Benzene) | | **<1.5** | **<4.8** | <1.5 | <1.5 | <4.8 | <4.8 |
| | 92.13 | Aromatic >EC7-EC8 (Toluene) | | **17.5** | **65.9** | <1.5 | <1.5 | <5.7 | <5.7 |
| | 120 | Aromatic >EC8-EC10 | | **17** | **83** | <10 | <10 | <49 | <49 |
| | 130 | Aromatic >EC10-EC12 | | **<10** | **<53** | <10 | <10 | <53 | <53 |

**Client Name:** BAM Ritchies
**Reference:** 326R
**Location:** -
**Contact:** Andy Bird

| EMT Job No. | Batch | Sample ID | Depth | EMT Sample No. | Analysis | Reason |
|---|---|---|---|---|---|---|
| No deviating sample report results for job 22/11805 | | | | | | |

**Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.**
**Only analyses which are accredited are recorded as deviating if set criteria are not met.**


Please include all sections of this report if it is reproduced

## NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

***EMT Job No.:*** 22/11805

**SOILS and ASH**

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

**WATERS**

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

**STACK EMISSIONS**

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

**DEVIATING SAMPLES**

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

**SURROGATES**

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

**DILUTIONS**

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

**BLANKS**

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

**NOTE**

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
Laboratory records are kept for a period of no less than 6 years.

**REPORTS FROM THE SOUTH AFRICA LABORATORY**

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

**Measurement Uncertainty**

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

**Customer Provided Information**

Sample ID and depth is information provided by the customer.

**ABBREVIATIONS and ACRONYMS USED**

| | |
|---|---|
| # | ISO17025 (UKAS Ref No. 4225) accredited - UK. |
| SA | ISO17025 (SANAS Ref No.T0729) accredited - South Africa |
| B | Indicates analyte found in associated method blank. |
| DR | Dilution required. |
| M | MCERTS accredited. |
| NA | Not applicable |
| NAD | No Asbestos Detected. |
| ND | None Detected (usually refers to VOC and/SVOC TICs). |
| NDP | No Determination Possible |
| SS | Calibrated against a single substance |
| SV | Surrogate recovery outside performance criteria. This may be due to a matrix effect. |
| W | Results expressed on as received basis. |
| + | AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. |
| >> | Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher. |
| * | Analysis subcontracted to an Element Materials Technology approved laboratory. |
| AD | Samples are dried at 35°C ±5°C |
| CO | Suspected carry over |
| LOD/LOR | Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS |
| ME | Matrix Effect |
| NFD | No Fibres Detected |
| BS | AQC Sample |
| LB | Blank Sample |
| N | Client Sample |
| TB | Trip Blank Sample |
| OC | Outside Calibration Range |

**EMT Job No:** 22/11805

| Test Method No. | Description | Prep Method No. (if appropriate) | Description | ISO 17025 (UKAS/SANAS) | MCERTS (UK soils only) | Analysis done on As Received (AR) or Dried (AD) | Reported on dry weight basis |
|---|---|---|---|---|---|---|---|
| TM68 | Modified TO-15 method. Volatile Organic Compounds (VOCs) sampled using Gas Canisters, BottleVacs or Tedlar bags and analysed using Entech GC-MS. | PM0 | No preparation is required. | | | | |
| TM68 | Modified TO-15 method. Volatile Organic Compounds (VOCs) sampled using Gas Canisters, BottleVacs or Tedlar bags and analysed using Entech GC-MS. | PM0 | No preparation is required. | Yes | | | |
| TM69 | Analysis of gas samples by direct injection onto a Gas Chromatography (GC) column and analysed using a Flame Ionisation Detector (FID) or a Thermocouple Detector (TD) | PM0 | No preparation is required. | | | | |
| TM119 | Determination of hydrogen sulphide using Gerhardt Steam distillation followed by Impact Pro Multi Gas Detector. | PM0 | No preparation is required. | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
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| | | | | | | | |
| | | | | | | | |

**Appendix 4**

4 Geotechnical Testing

bam ritchies

# Summary of Classification Test Results

Project No.: 326R

Project Name: Victoria North HIF Infrastructure & Enabling Works

| Hole No. | Sample | | | | Soil Description | Density bulk / dry Mg/m3 | | w % | Passing 425µm % | LL % | PL % | PI % | Particle density Mg/m3 | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ref | Top | Base | Type | | | | | | | | | | |
| BH301 | WA1030284 | 1.80 | | D | Brown sandy gravelly CLAY | | | 19.0 | 93 | 30 - 1pt | 17 | 13 | | |
| BH301 | WA1033052 | 2.70 | | D | Brown sandy gravelly CLAY | | | 25.0 | 82 | 33 - 1pt | 17 | 16 | | |
| BH301 | WA1033055 | 3.70 | | D | Brown sandy gravelly CLAY | | | 19.0 | 93 | 39 - 1pt | 20 | 19 | | |
| BH301 | WA1033060 | 6.00 | 6.45 | D | Brown sandy gravelly CLAY | | | 19.0 | 95 | 32 - 1pt | 16 | 16 | | |
| BH301 | WA1033063 | 7.50 | 7.95 | D | Brown sandy gravelly CLAY | | | 18.0 | 95 | 36 - 1pt | 18 | 18 | | |
| BH301 | WA1033066 | 9.00 | 9.45 | D | Grey sandy gravelly CLAY | | | 16.0 | 81 | 30 - 1pt | 18 | 12 | | |
| BH301 | WA1033069 | 10.50 | 10.95 | D | Brown + grey sandy gravelly CLAY | | | 13.0 | 83 | 27 - 1pt | 17 | 10 | | |
| BH301 | WA1033072 | 12.00 | 12.45 | D | Brown sandy gravelly CLAY | | | 21.0 | 96 | 33 - 1pt | 19 | 14 | | |
| BH302 | WA1020689 | 3.00 | | D | Brown silty gravelly SAND | | | 19.0 | 79 | 21 - 1pt | 14 | 7 | | |
| BH302 | WA1020695 | 5.45 | | D | Brown sandy gravelly CLAY | | | 17.0 | 93 | 31 - 1pt | 19 | 12 | | |
| BH302 | WA1020698 | 7.00 | | D | Brown sandy gravelly CLAY | | | 24.0 | 97 | 41 - 1pt | 22 | 19 | | |
| BH302 | WA1020700 | 7.95 | | D | Brown sandy gravelly CLAY | | | 20.0 | 95 | 36 - 1pt | 19 | 17 | | |
| BH302 | WA1020701 | 9.00 | | D | Brown sandy gravelly CLAY | | | 16.0 | 97 | 26 - 1pt | 18 | 8 | | |
| BH302 | WA1020707 | 12.00 | | D | Brown sandy gravelly CLAY | | | 21.0 | 97 | 27 - 1pt | 17 | 10 | | |
| BH303 | WA1020658 | 5.00 | 5.45 | D | Brownish grey sandy clayey GRAVEL | | | 24.0 | 47 | 35 - 1pt | 22 | 13 | | |
| BH303 | WA1020661 | 6.00 | 6.45 | D | Grey sandy clayey GRAVEL | | | 26.0 | 47 | 37 - 1pt | 24 | 13 | | |
| BH303 | WA1028666 | 8.50 | | D | Brown sandy gravelly CLAY | | | 20.0 | 89 | 31 - 1pt | 17 | 14 | | |
| BH304 | WA1030251 | 4.70 | | D | Grey sandy gravelly CLAY | | | 19.0 | 57 | 39 - 1pt | 23 | 16 | | |
| BH304 | WA1030254 | 5.70 | | D | Grey sandy gravelly CLAY | | | 17.0 | 57 | 40 - 1pt | 20 | 20 | | |
| BH304 | WA1030257 | 7.00 | | D | Brown + grey sandy slightly gravelly CLAY | | | 23.0 | 87 | 41 - 1pt | 22 | 19 | | |
| BH305 | | 10.50 | 10.95 | D | Brown sandy slightly gravelly CLAY | | | 23.0 | 91 | 22 - 1pt | 13 | 9 | | |
| BH313 | WA1020739 | 10.00 | | D | Brown sandy CLAY | | | 22.0 | 97 | | | | | Non Plastic |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

All tests performed in accordance with BS1377:1990 unless specified otherwise

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

bam ritchies

# Summary of Classification Test Results

Project No.: 326R

Project Name: Victoria North HIF Infrastructure & Enabling Works

| Hole No. | Sample | | | | Soil Description | Density bulk | Density dry | w | Passing 425µm | LL | PL | PI | Particle density | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ref | Top | Base | Type | | Mg/m3 | | % | % | % | % | % | Mg/m3 | |
| TP308 | WA1031267 | 2.00 | | B | Brown sandy gravelly CLAY | | | 20.0 | 91 | 40 - 1pt | 18 | 22 | | |
| TP308 | WA1031269 | 3.00 | | B | Brown sandy gravelly CLAY | | | 22.0 | 92 | 36 - 1pt | 19 | 17 | | |
| TP310 | WA1031271 | 2.00 | | B | Brown sandy gravelly CLAY | | | 25.0 | 96 | 39 - 1pt | 21 | 18 | | |
| TP310 | WA1031272 | 3.00 | | B | Brown sandy slightly gravelly CLAY | | | 20.0 | 93 | 34 - 1pt | 19 | 15 | | |
| TT303 | WA1031254 | 0.50 | | B | Brown sandy gravelly CLAY M/G | | | 21.0 | 88 | 34 - 1pt | 17 | 17 | | |
| TT303A | WA1031253 | 1.00 | | B | Brown sandy gravelly CLAY M/G | | | 22.0 | 64 | 39 - 1pt | 19 | 20 | | |

All tests performed in accordance with BS1377:1990 unless specified otherwise

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknomete
gj - gas jar

bam ritchies

# Summary of Classification Test Results

Project No.: 326R

Project Name: Victoria North HIF Infrastructure & Enabling Works

| Hole No. | Sample | | | | Soil Description | Density bulk Mg/m3 | Density dry Mg/m3 | w % | Passing 425µm % | LL % | PL % | PI % | Particle density Mg/m3 | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ref | Top | Base | Type | | | | | | | | | | |
| BAL01 | WA1034026 | 0.00 | 0.10 | B | Brown clayey sandy GRAVEL | | | 6.1 | | | | | | |
| BAL02 | WA1034027 | 0.00 | 0.10 | B | Brown clayey sandy GRAVEL | | | 12.0 | | | | | | |
| BAL03 | WA1034028 | 0.00 | 0.10 | B | Brown clayey sandy GRAVEL | | | 8.7 | | | | | | |
| BH301 | WA1030284 | 1.80 | | D | Brown sandy gravelly CLAY | | | 19.0 | 93 | 30 - 1pt | 17 | 13 | | |
| BH301 | WA1033052 | 2.70 | | D | Brown sandy gravelly CLAY | | | 25.0 | 82 | 33 - 1pt | 17 | 16 | | |
| BH301 | WA1033055 | 3.70 | | D | Brown sandy gravelly CLAY | | | 19.0 | 93 | 39 - 1pt | 20 | 19 | | |
| BH301 | WA1033060 | 6.00 | 6.45 | D | Brown sandy gravelly CLAY | | | 19.0 | 95 | 32 - 1pt | 16 | 16 | | |
| BH301 | WA1033063 | 7.50 | 7.95 | D | Brown sandy gravelly CLAY | | | 18.0 | 95 | 36 - 1pt | 18 | 18 | | |
| BH301 | WA1033066 | 9.00 | 9.45 | D | Grey sandy gravelly CLAY | | | 16.0 | 81 | 30 - 1pt | 18 | 12 | | |
| BH301 | WA1033069 | 10.50 | 10.95 | D | Brown + grey sandy gravelly CLAY | | | 13.0 | 83 | 27 - 1pt | 17 | 10 | | |
| BH301 | WA1033072 | 12.00 | 12.45 | D | Brown sandy gravelly CLAY | | | 21.0 | 96 | 33 - 1pt | 19 | 14 | | |
| BH302 | WA1020689 | 3.00 | | D | Brown silty gravelly SAND | | | 19.0 | 79 | 21 - 1pt | 14 | 7 | | |
| BH302 | WA1020695 | 5.45 | | D | Brown sandy gravelly CLAY | | | 17.0 | 93 | 31 - 1pt | 19 | 12 | | |
| BH302 | WA1020698 | 7.00 | | D | Brown sandy gravelly CLAY | | | 24.0 | 97 | 41 - 1pt | 22 | 19 | | |
| BH302 | WA1020700 | 7.95 | | D | Brown sandy gravelly CLAY | | | 20.0 | 95 | 36 - 1pt | 19 | 17 | | |
| BH302 | WA1020701 | 9.00 | | D | Brown sandy gravelly CLAY | | | 16.0 | 97 | 26 - 1pt | 18 | 8 | | |
| BH302 | WA1020707 | 12.00 | | D | Brown sandy gravelly CLAY | | | 21.0 | 97 | 27 - 1pt | 17 | 10 | | |
| BH303 | WA1020658 | 5.00 | 5.45 | D | Brownish grey sandy clayey GRAVEL | | | 24.0 | 47 | 35 - 1pt | 22 | 13 | | |
| BH303 | WA1020661 | 6.00 | 6.45 | D | Grey sandy clayey GRAVEL | | | 26.0 | 47 | 37 - 1pt | 24 | 13 | | |
| BH303 | WA1028666 | 8.50 | | D | Brown sandy gravelly CLAY | | | 20.0 | 89 | 31 - 1pt | 17 | 14 | | |
| BH304 | WA1030251 | 4.70 | | D | Grey sandy gravelly CLAY | | | 19.0 | 57 | 39 - 1pt | 23 | 16 | | |
| BH304 | WA1030254 | 5.70 | | D | Grey sandy gravelly CLAY | | | 17.0 | 57 | 40 - 1pt | 20 | 20 | | |
| BH304 | WA1030257 | 7.00 | | D | Brown + grey sandy slightly gravelly CLAY | | | 23.0 | 87 | 41 - 1pt | 22 | 19 | | |
| BH305 | | 10.50 | 10.95 | D | Brown sandy slightly gravelly CLAY | | | 23.0 | 91 | 22 - 1pt | 13 | 9 | | |
| BH306 | WA1031331 | 4.00 | 4.45 | D | Greyish brown sandy gravelly CLAY | | | 33.0 | 86 | 26 - 1pt | 18 | 8 | | |
| BH306 | WA1031334 | 5.00 | 5.45 | D | Greyish brown slightly organic slightly gravelly sandy CLAY | | | 54.0 | 79 | 27 - 1pt | 18 | 9 | | |

All tests performed in accordance with BS1377:1990 unless specified otherwise

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

bam ritchies

# Summary of Classification Test Results

Project No.: 326R

Project Name: Victoria North HIF Infrastructure & Enabling Works

| Hole No. | Sample | | | | Soil Description | Density bulk Mg/m3 | Density dry Mg/m3 | w % | Passing 425µm % | LL % | PL % | PI % | Particle density Mg/m3 | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ref | Top | Base | Type | | | | | | | | | | |
| BH307 | WA1029724 | 1.00 | | D | Brown gravelly clayey SAND | | | 24.0 | 86 | | | | | Non Plastic |
| BH307 | WA1029729 | 2.00 | 2.45 | D | Brown SAND + GRAVEL | | | 8.8 | 31 | | | | | Non Plastic |
| BH309 | WA1030348 | 2.70 | | D | Brown sandy gravelly CLAY | | | 25.0 | 78 | 26 - 1pt | 17 | 9 | | |
| BH309 | WA1030351 | 3.70 | | D | Brown gravelly clayey SAND | | | 15.0 | 89 | | | | | Non Plastic |
| BH310 | 10 | 3.50 | | D | Brown sandy gravelly CLAY | | | 19.0 | 87 | | | | | Non Plastic |
| BH311 | WA1031294 | 0.50 | | D | Brown sandy gravelly CLAY | | | 28.0 | 89 | 34 - 1pt | 20 | 14 | | |
| BH311 | WA1029655 | 1.20 | 1.65 | D | Brown sandy gravelly CLAY | | | 18.0 | 95 | 34 - 1pt | 20 | 14 | | |
| BH311 | WA1029662 | 3.70 | | D | Brown sandy gravelly CLAY | | | 15.0 | 93 | 30 - 1pt | 17 | 13 | | |
| BH311 | WA1029667 | 5.70 | | D | Brown sandy gravelly CLAY | | | 13.0 | 91 | 29 - 1pt | 15 | 14 | | |
| BH311 | WA1029670 | 7.50 | 7.95 | D | Brown slightly gravelly sandy CLAY | | | 8.6 | 95 | 24 - 1pt | 15 | 9 | | |
| BH312 | WA1029691 | 2.00 | 2.45 | D | Brown sandy gravelly CLAY M/G | | | 19.0 | 70 | 24 - 1pt | 15 | 9 | | |
| BH312 | WA1029695 | 3.45 | 3.50 | D | Brown sandy gravelly CLAY | | | 20.0 | 93 | 34 - 1pt | 18 | 16 | | |
| BH312 | WA1029700 | 5.45 | 5.50 | D | Brown slightly gravelly sandy CLAY | | | 16.0 | 95 | 40 - 1pt | 21 | 19 | | |
| BH313 | WA1020739 | 10.00 | | D | Brown sandy CLAY | | | 22.0 | 97 | | | | | Non Plastic |
| BH314 | WA1029613 | 4.70 | | D | Brown sandy gravelly CLAY | | | 15.0 | 58 | 26 - 1pt | 15 | 11 | | |
| BH314 | WA1029619 | 7.00 | | D | Brown sandy gravelly CLAY | | | 20.0 | 89 | 31 - 1pt | 16 | 15 | | |
| BH315 | WA1029630 | 0.50 | | D | Brown sandy gravelly CLAY | | | 18.0 | 72 | | | | | Non Plastic |
| BH315 | WA1029636 | 2.45 | 2.50 | D | Brown sandy gravelly CLAY | | | 24.0 | 93 | 34 - 1pt | 18 | 16 | | |
| BH315 | WA1029642 | 5.45 | 5.50 | D | Brown sandy gravelly CLAY | | | 26.0 | 87 | 32 - 1pt | 17 | 15 | | |
| BH321 | WA1031368 | 0.50 | | D | Brown gravelly clayey SAND | | | 16.0 | 55 | | | | | Non Plastic |
| BH324 | WA1030379 | 3.00 | 3.45 | D | Greyish brown sandy gravelly CLAY | | | 16.0 | 85 | 33 - 1pt | 19 | 14 | | |
| BH325 | WA1031346 | 2.80 | | D | Brown sandy gravelly CLAY | | | 35.0 | 51 | 40 - 1pt | 28 | 12 | | |
| TP308 | WA1031267 | 2.00 | | B | Brown sandy gravelly CLAY | | | 20.0 | 91 | 40 - 1pt | 18 | 22 | | |
| TP308 | WA1031269 | 3.00 | | B | Brown sandy gravelly CLAY | | | 22.0 | 92 | 36 - 1pt | 19 | 17 | | |
| TP310 | WA1031271 | 2.00 | | B | Brown sandy gravelly CLAY | | | 25.0 | 96 | 39 - 1pt | 21 | 18 | | |
| TP310 | WA1031272 | 3.00 | | B | Brown sandy slightly gravelly CLAY | | | 20.0 | 93 | 34 - 1pt | 19 | 15 | | |

All tests performed in accordance with BS1377:1990 unless specified otherwise

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

bam ritchies

# Summary of Classification Test Results

| Project No. | Project Name |
|---|---|
| 326R | Victoria North HIF Infrastructure & Enabling Works |

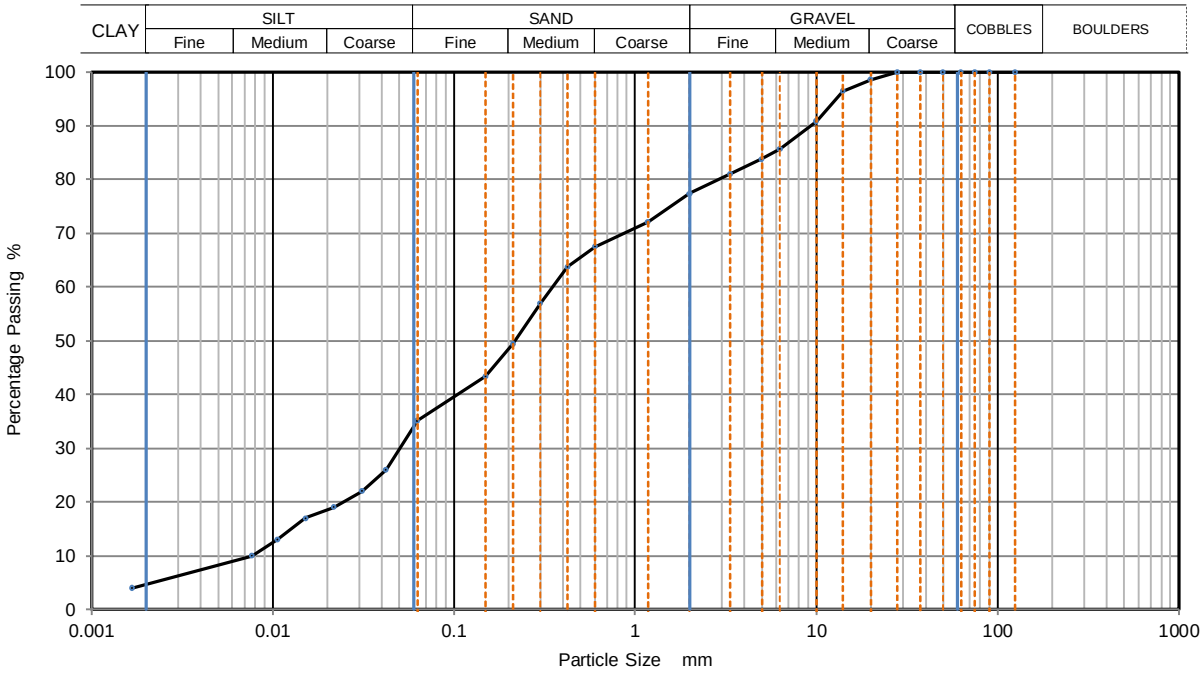
| Hole No. | Sample | | | | Soil Description | Density | | *w* | Passing 425µm | LL | PL | PI | Particle density | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ref | Top | Base | Type | | bulk | dry | | | | | | | |
| | | | | | | Mg/m3 | | % | % | % | % | % | Mg/m3 | |
| TT303 | WA1031254 | 0.50 | | B | Brown sandy gravelly CLAY M/G | | | 21.0 | 88 | 34 - 1pt | 17 | 17 | | |
| TT303A | WA1031253 | 1.00 | | B | Brown sandy gravelly CLAY M/G | | | 22.0 | 64 | 39 - 1pt | 19 | 20 | | |

All tests performed in accordance with BS1377:1990 unless specified otherwise

Key

| Density test | Liquid Limit | Particle density |
|---|---|---|
| Linear measurement unless : | 4pt cone unless : | sp - small pyknometer |
| wd - water displacement | cas - Casagrande method | gj - gas jar |
| wi - immersion in water | 1pt - single point test | |

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030278 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth, m | 0.50 |
| Specimen Reference | 6 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030278 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0424 | 26 |
| 90 | 100 | 0.0311 | 22 |
| 75 | 100 | 0.0217 | 19 |
| 63 | 100 | 0.0152 | 17 |
| 50 | 100 | 0.0106 | 13 |
| 37.5 | 100 | 0.0077 | 10 |
| 28 | 100 | 0.0017 | 4 |
| 20 | 99 | | |
| 14 | 96 | | |
| 10 | 91 | | |
| 6.3 | 86 | | |
| 5 | 84 | | |
| 3.35 | 81 | | |
| 2 | 77 | | |
| 1.18 | 72 | | |
| 0.6 | 68 | Particle density (assumed) | |
| 0.425 | 64 | 2.67 | Mg/m3 |
| 0.3 | 57 | | |
| 0.212 | 49 | | |
| 0.15 | 43 | | |
| 0.063 | 35 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 11750 |

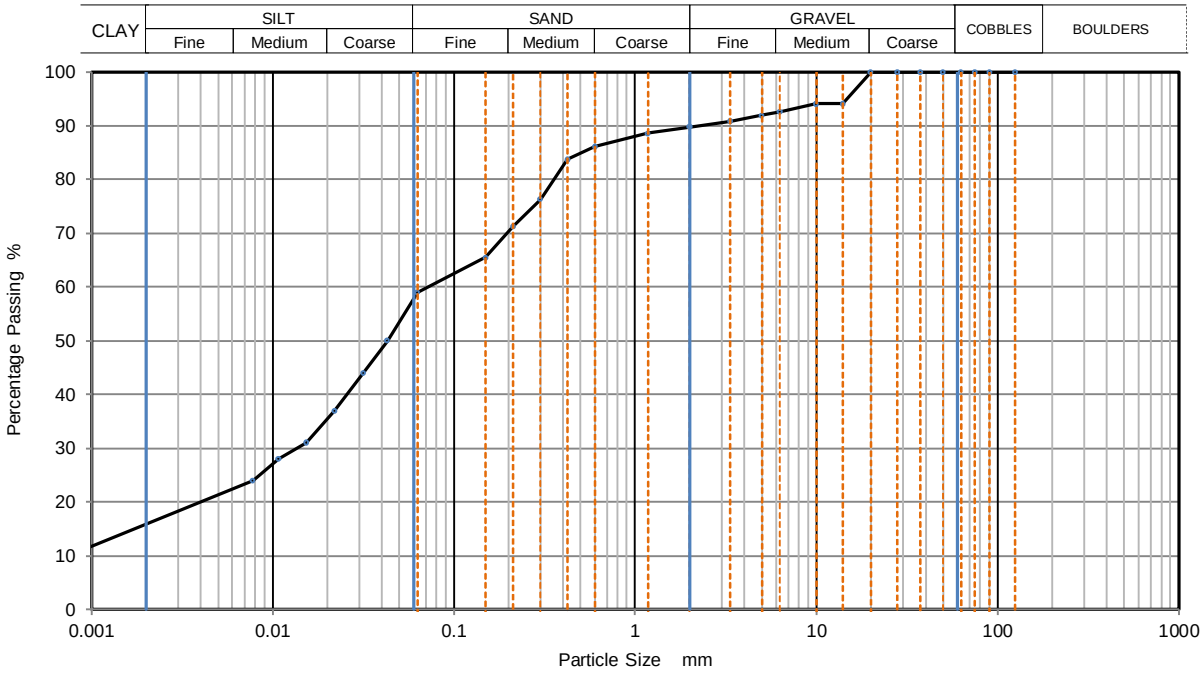
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 23 |
| Sand | 42 |
| Silt | 30 |
| Clay | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.351 |
| D30 | mm | 0.0509 |
| D10 | mm | 0.00758 |
| Uniformity Coefficient | | 46 |
| Curvature Coefficient | | 0.97 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033054 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 3.00 |
| Specimen Reference | 6 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033054 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0431 | 50 |
| 90 | 100 | 0.0316 | 44 |
| 75 | 100 | 0.0220 | 37 |
| 63 | 100 | 0.0154 | 31 |
| 50 | 100 | 0.0108 | 28 |
| 37.5 | 100 | 0.0078 | 24 |
| 28 | 100 | 0.0009 | 11 |
| 20 | 100 | | |
| 14 | 94 | | |
| 10 | 94 | | |
| 6.3 | 93 | | |
| 5 | 92 | | |
| 3.35 | 91 | | |
| 2 | 90 | | |
| 1.18 | 89 | | |
| 0.6 | 86 | Particle density (assumed) | |
| 0.425 | 84 | 2.67 | Mg/m3 |
| 0.3 | 76 | | |
| 0.212 | 71 | | |
| 0.15 | 66 | | |
| 0.063 | 59 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5133 |

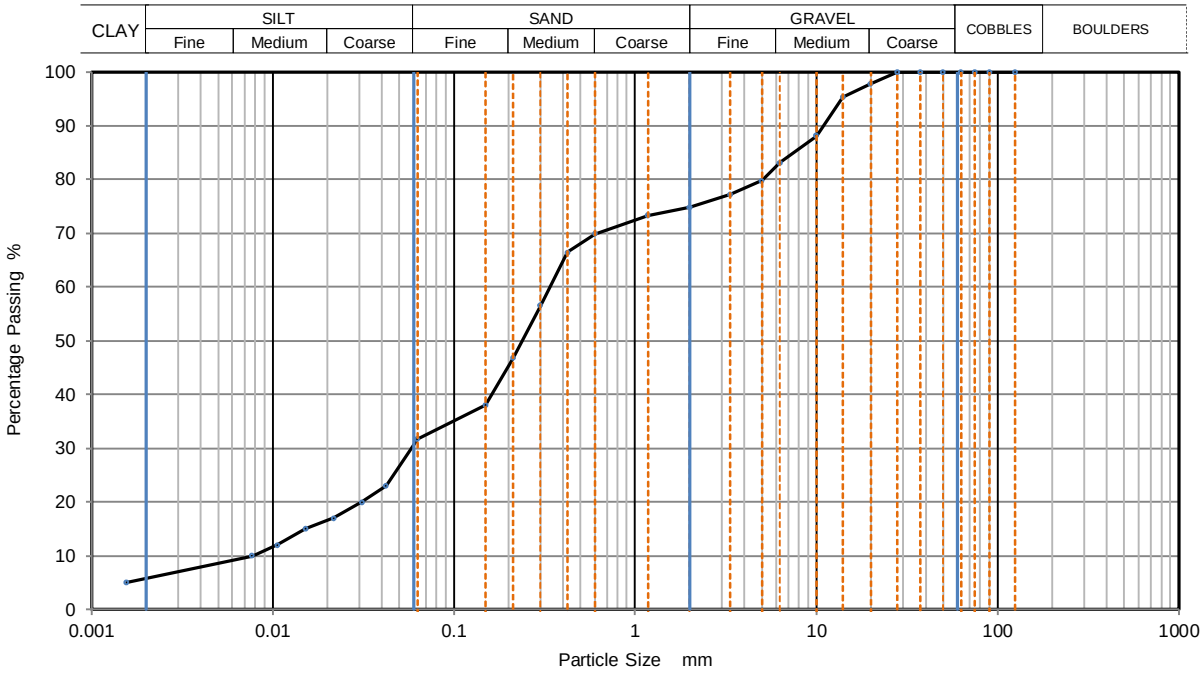
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 10 |
| Sand | 31 |
| Silt | 43 |
| Clay | 16 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0723 |
| D30 | mm | 0.0135 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033056 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033056 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0424 | 23 |
| 90 | 100 | 0.0311 | 20 |
| 75 | 100 | 0.0217 | 17 |
| 63 | 100 | 0.0152 | 15 |
| 50 | 100 | 0.0106 | 12 |
| 37.5 | 100 | 0.0077 | 10 |
| 28 | 100 | 0.0016 | 5 |
| 20 | 98 | | |
| 14 | 95 | | |
| 10 | 88 | | |
| 6.3 | 83 | | |
| 5 | 80 | | |
| 3.35 | 77 | | |
| 2 | 75 | | |
| 1.18 | 73 | | |
| 0.6 | 70 | Particle density (assumed) | |
| 0.425 | 66 | 2.67 | Mg/m3 |
| 0.3 | 57 | | |
| 0.212 | 47 | | |
| 0.15 | 38 | | |
| 0.063 | 32 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5516 |

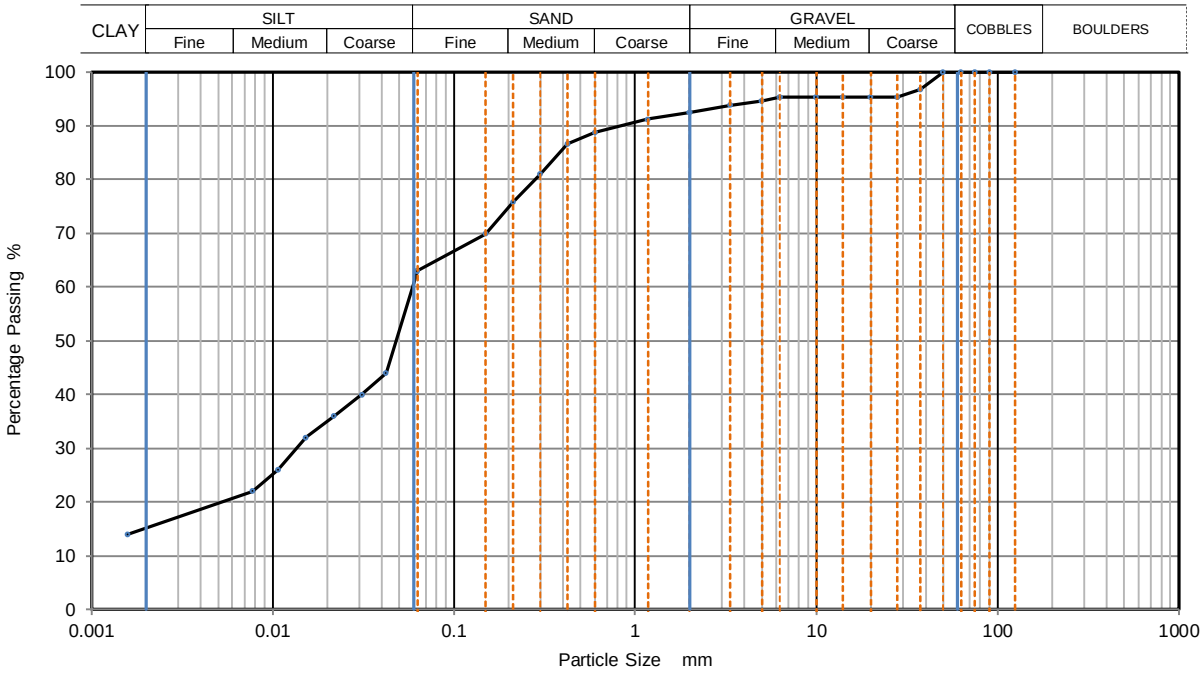
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 25 |
| Sand | 43 |
| Silt | 26 |
| Clay | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.34 |
| D30 | mm | 0.0583 |
| D10 | mm | 0.00776 |
| Uniformity Coefficient | | 44 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033061 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033061 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0422 | 44 |
| 90 | 100 | 0.0311 | 40 |
| 75 | 100 | 0.0218 | 36 |
| 63 | 100 | 0.0153 | 32 |
| 50 | 100 | 0.0107 | 26 |
| 37.5 | 97 | 0.0077 | 22 |
| 28 | 95 | 0.0016 | 14 |
| 20 | 95 | | |
| 14 | 95 | | |
| 10 | 95 | | |
| 6.3 | 95 | | |
| 5 | 95 | | |
| 3.35 | 94 | | |
| 2 | 93 | | |
| 1.18 | 91 | | |
| 0.6 | 89 | Particle density (assumed) | |
| 0.425 | 87 | 2.67 | Mg/m3 |
| 0.3 | 81 | | |
| 0.212 | 76 | | |
| 0.15 | 70 | | |
| 0.063 | 63 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4436 |

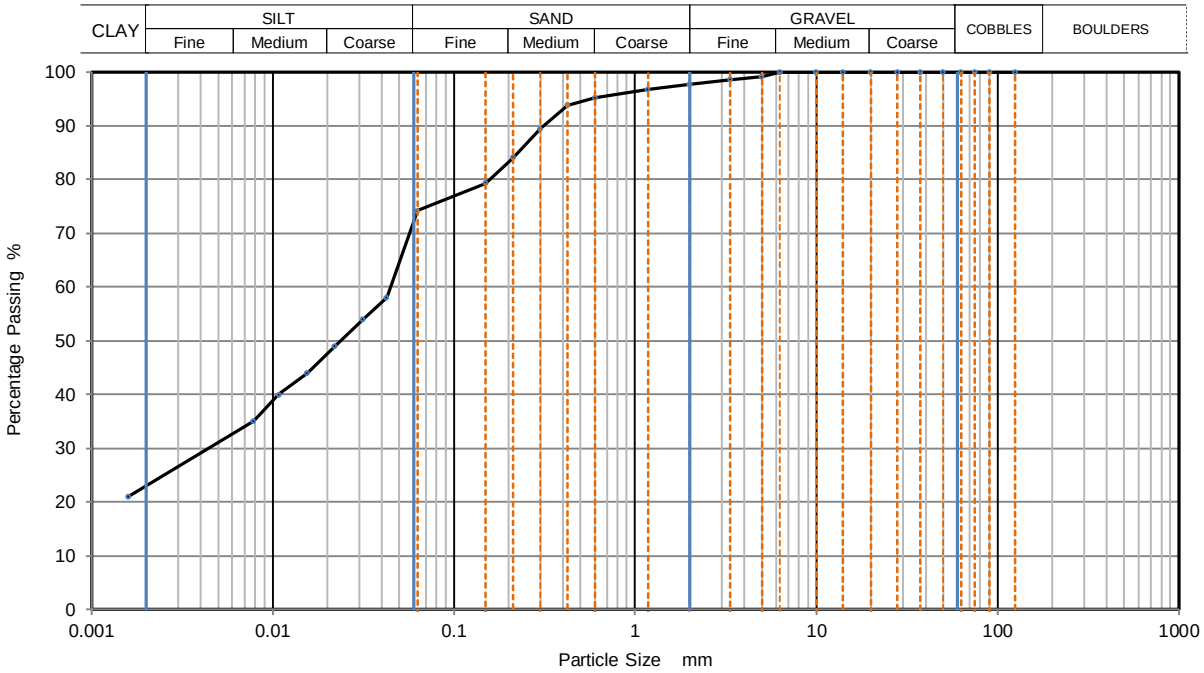
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 8 |
| Sand | 30 |
| Silt | 48 |
| Clay | 15 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0591 |
| D30 | mm | 0.0134 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033064 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 7.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033064 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 58 |
| 90 | 100 | 0.0315 | 54 |
| 75 | 100 | 0.0221 | 49 |
| 63 | 100 | 0.0155 | 44 |
| 50 | 100 | 0.0109 | 40 |
| 37.5 | 100 | 0.0079 | 35 |
| 28 | 100 | 0.0016 | 21 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 99 | | |
| 3.35 | 99 | | |
| 2 | 98 | | |
| 1.18 | 97 | | |
| 0.6 | 95 | Particle density (assumed) | |
| 0.425 | 94 | 2.67 | Mg/m3 |
| 0.3 | 89 | | |
| 0.212 | 84 | | |
| 0.15 | 79 | | |
| 0.063 | 74 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4413 |

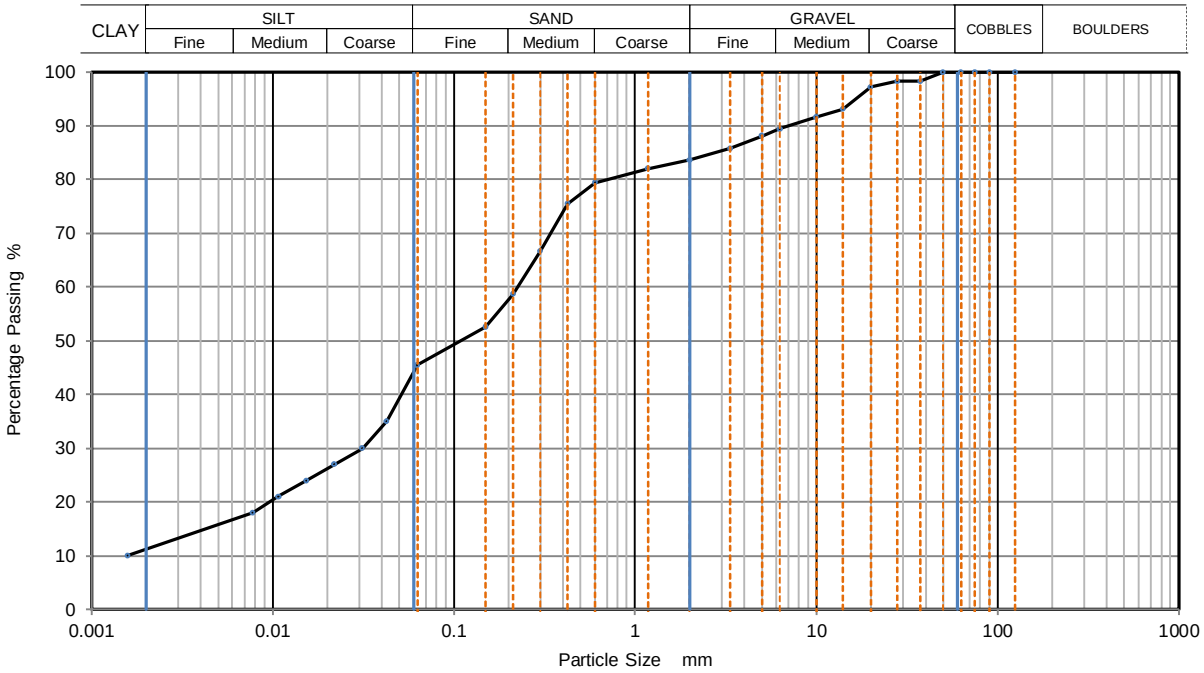
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 2 |
| Sand | 24 |
| Silt | 51 |
| Clay | 23 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0444 |
| D30 | mm | 0.00442 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033070 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 10.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033070 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 35 |
| 90 | 100 | 0.0313 | 30 |
| 75 | 100 | 0.0219 | 27 |
| 63 | 100 | 0.0154 | 24 |
| 50 | 100 | 0.0108 | 21 |
| 37.5 | 98 | 0.0078 | 18 |
| 28 | 98 | 0.0016 | 10 |
| 20 | 97 | | |
| 14 | 93 | | |
| 10 | 92 | | |
| 6.3 | 89 | | |
| 5 | 88 | | |
| 3.35 | 86 | | |
| 2 | 84 | | |
| 1.18 | 82 | | |
| 0.6 | 79 | Particle density (assumed) | |
| 0.425 | 76 | 2.67 | Mg/m3 |
| 0.3 | 67 | | |
| 0.212 | 59 | | |
| 0.15 | 53 | | |
| 0.063 | 46 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5989 |

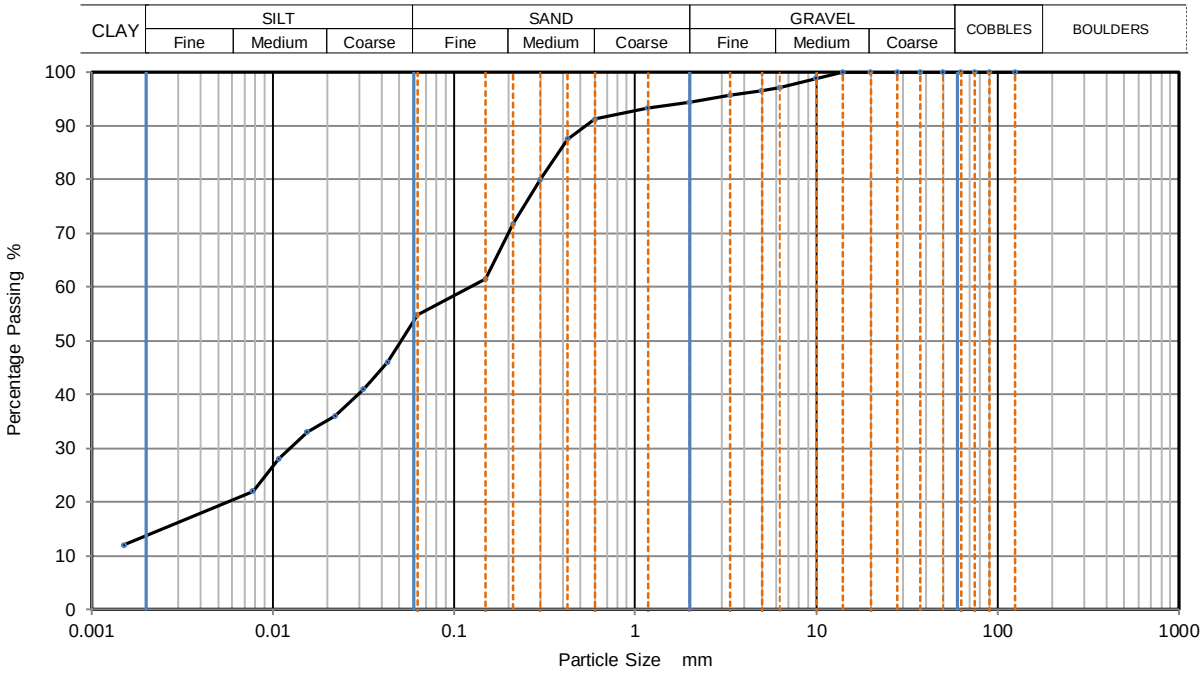
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 16 |
| Sand | 38 |
| Silt | 34 |
| Clay | 11 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.224 |
| D30 | mm | 0.0317 |
| D10 | mm | 0.00161 |
| Uniformity Coefficient | | 140 |
| Curvature Coefficient | | 2.8 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033073 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 12.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033073 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0431 | 46 |
| 90 | 100 | 0.0317 | 41 |
| 75 | 100 | 0.0222 | 36 |
| 63 | 100 | 0.0155 | 33 |
| 50 | 100 | 0.0108 | 28 |
| 37.5 | 100 | 0.0078 | 22 |
| 28 | 100 | 0.0015 | 12 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 99 | | |
| 6.3 | 97 | | |
| 5 | 97 | | |
| 3.35 | 96 | | |
| 2 | 94 | | |
| 1.18 | 93 | | |
| 0.6 | 91 | Particle density (assumed) | |
| 0.425 | 88 | 2.67 | Mg/m3 |
| 0.3 | 80 | | |
| 0.212 | 72 | | |
| 0.15 | 62 | | |
| 0.063 | 55 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5237 |

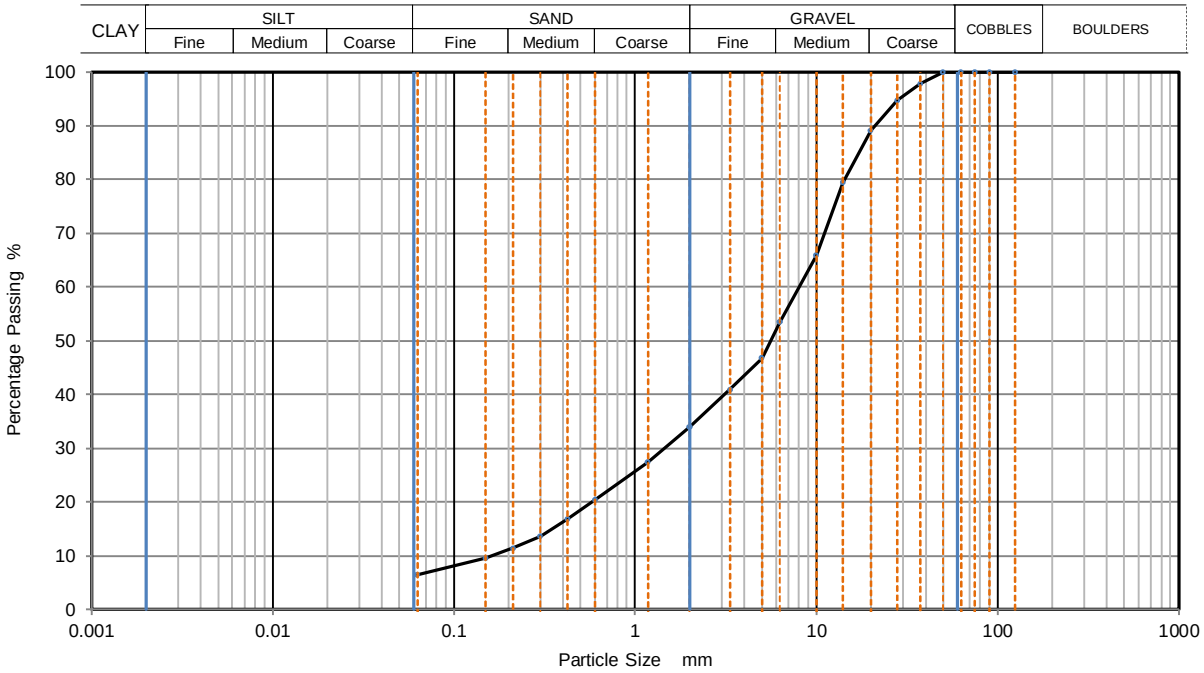
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 6 |
| Sand | 40 |
| Silt | 41 |
| Clay | 14 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.123 |
| D30 | mm | 0.0129 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020685 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 1.20 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1020685 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 98 | | |
| 28 | 95 | | |
| 20 | 89 | | |
| 14 | 79 | | |
| 10 | 66 | | |
| 6.3 | 54 | | |
| 5 | 47 | | |
| 3.35 | 41 | | |
| 2 | 34 | | |
| 1.18 | 27 | | |
| 0.6 | 20 | | |
| 0.425 | 17 | | |
| 0.3 | 14 | | |
| 0.212 | 11 | | |
| 0.15 | 10 | | |
| 0.063 | 7 | | |

| Dry Mass of sample, g. | 7096 |
|---|---|

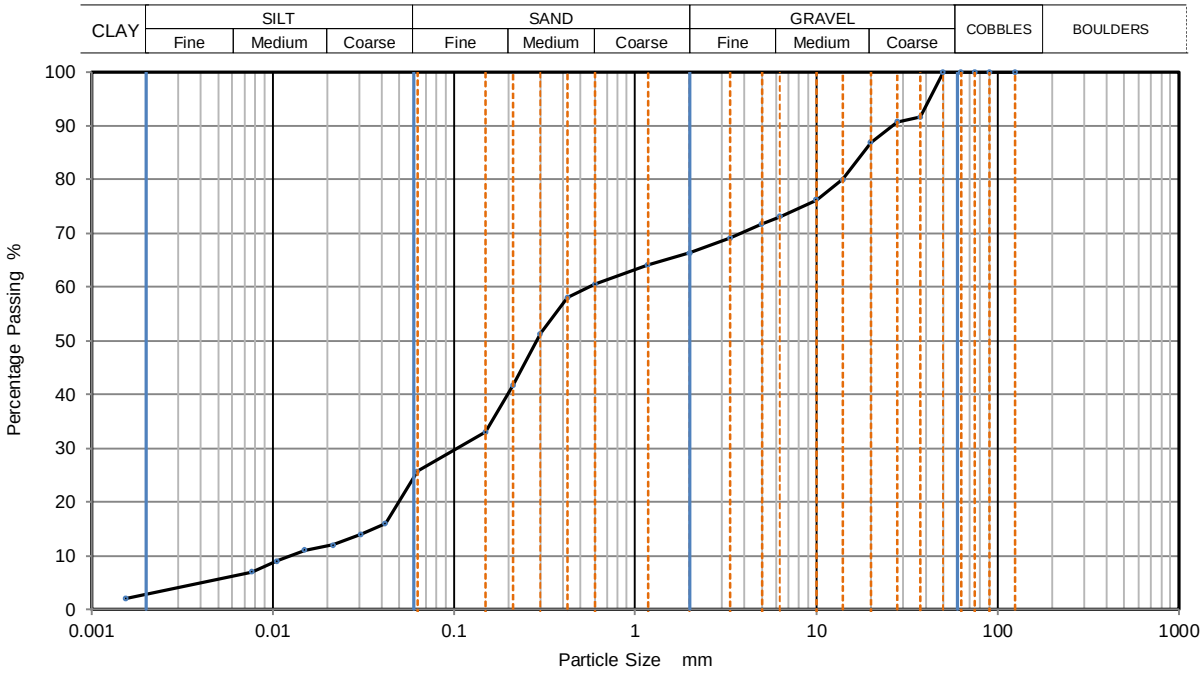
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 66 |
| Sand | 28 |
| | |
| Fines <0.063mm | 7 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 8.02 |
| D30 | mm | 1.45 |
| D10 | mm | 0.166 |
| Uniformity Coefficient | | 48 |
| Curvature Coefficient | | 1.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020687 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020687 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0419 | 16 |
| 90 | 100 | 0.0307 | 14 |
| 75 | 100 | 0.0216 | 12 |
| 63 | 100 | 0.0151 | 11 |
| 50 | 100 | 0.0106 | 9 |
| 37.5 | 92 | 0.0077 | 7 |
| 28 | 91 | 0.0016 | 2 |
| 20 | 87 | | |
| 14 | 80 | | |
| 10 | 76 | | |
| 6.3 | 73 | | |
| 5 | 72 | | |
| 3.35 | 69 | | |
| 2 | 66 | | |
| 1.18 | 64 | | |
| 0.6 | 61 | Particle density (assumed) | |
| 0.425 | 58 | 2.67 Mg/m3 | |
| 0.3 | 51 | | |
| 0.212 | 42 | | |
| 0.15 | 33 | | |
| 0.063 | 26 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5801 |

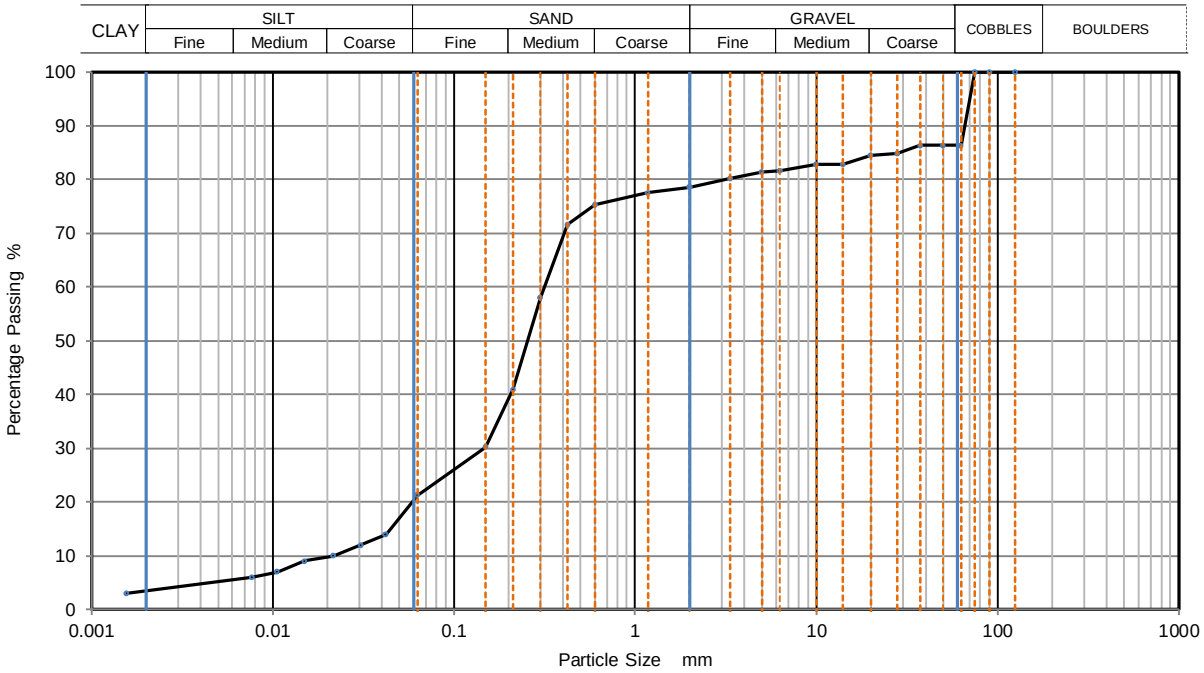
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 34 |
| Sand | 41 |
| Silt | 23 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.562 |
| D30 | mm | 0.105 |
| D10 | mm | 0.0132 |
| Uniformity Coefficient | | 43 |
| Curvature Coefficient | | 1.5 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020690 |
| Soil Description | Brown sandy gravelly CLAY/SILT | | | Depth, m | 3.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020690 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 14 |
| 90 | 100 | 0.0309 | 12 |
| 75 | 100 | 0.0216 | 10 |
| 63 | 86 | 0.0151 | 9 |
| 50 | 86 | 0.0106 | 7 |
| 37.5 | 86 | 0.0077 | 6 |
| 28 | 85 | 0.0016 | 3 |
| 20 | 85 | | |
| 14 | 83 | | |
| 10 | 83 | | |
| 6.3 | 82 | | |
| 5 | 81 | | |
| 3.35 | 80 | | |
| 2 | 79 | | |
| 1.18 | 78 | | |
| 0.6 | 75 | Particle density (assumed) | |
| 0.425 | 72 | 2.67 | Mg/m3 |
| 0.3 | 58 | | |
| 0.212 | 41 | | |
| 0.15 | 30 | | |
| 0.063 | 21 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3020 |

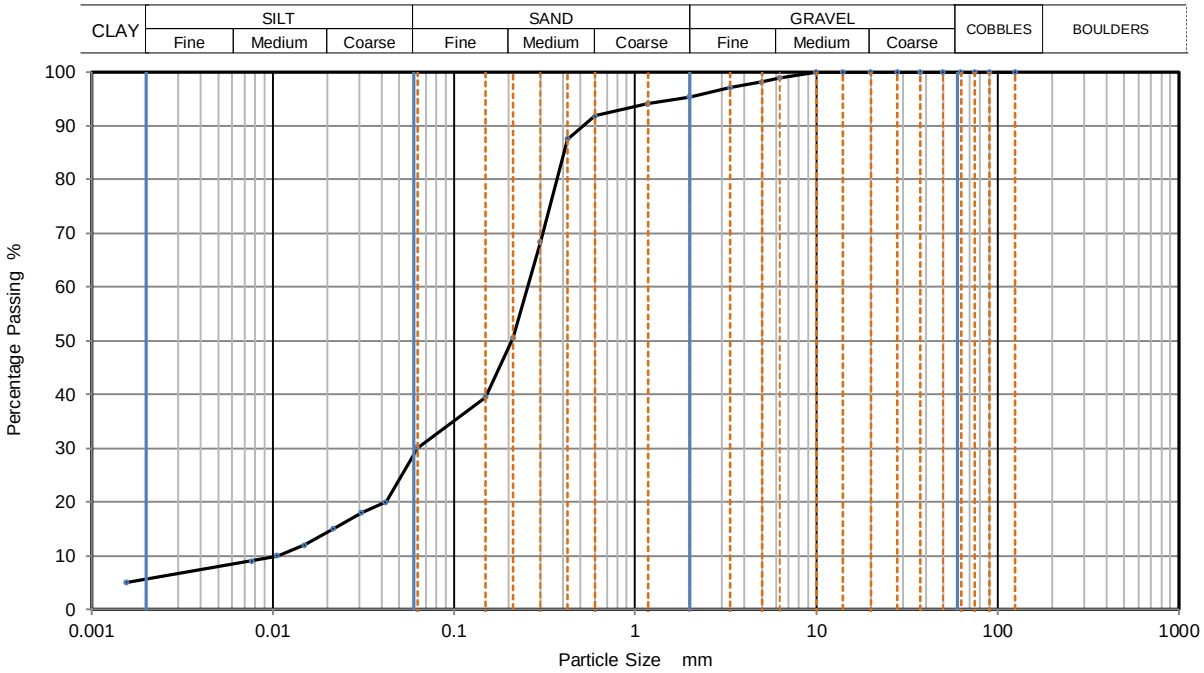
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 14 |
| Gravel | 8 |
| Sand | 57 |
| Silt | 18 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.315 |
| D30 | mm | 0.148 |
| D10 | mm | 0.0214 |
| Uniformity Coefficient | | 15 |
| Curvature Coefficient | | 3.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020692 |
| Soil Description | Brown silty gravelly SAND | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020692 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 20 |
| 90 | 100 | 0.0310 | 18 |
| 75 | 100 | 0.0217 | 15 |
| 63 | 100 | 0.0151 | 12 |
| 50 | 100 | 0.0106 | 10 |
| 37.5 | 100 | 0.0077 | 9 |
| 28 | 100 | 0.0016 | 5 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 99 | | |
| 5 | 98 | | |
| 3.35 | 97 | | |
| 2 | 95 | | |
| 1.18 | 94 | | |
| 0.6 | 92 | Particle density (assumed) | |
| 0.425 | 88 | 2.67 | Mg/m3 |
| 0.3 | 68 | | |
| 0.212 | 51 | | |
| 0.15 | 40 | | |
| 0.063 | 30 | | |

| Dry Mass of sample, g. | 3530 |
|---|---|

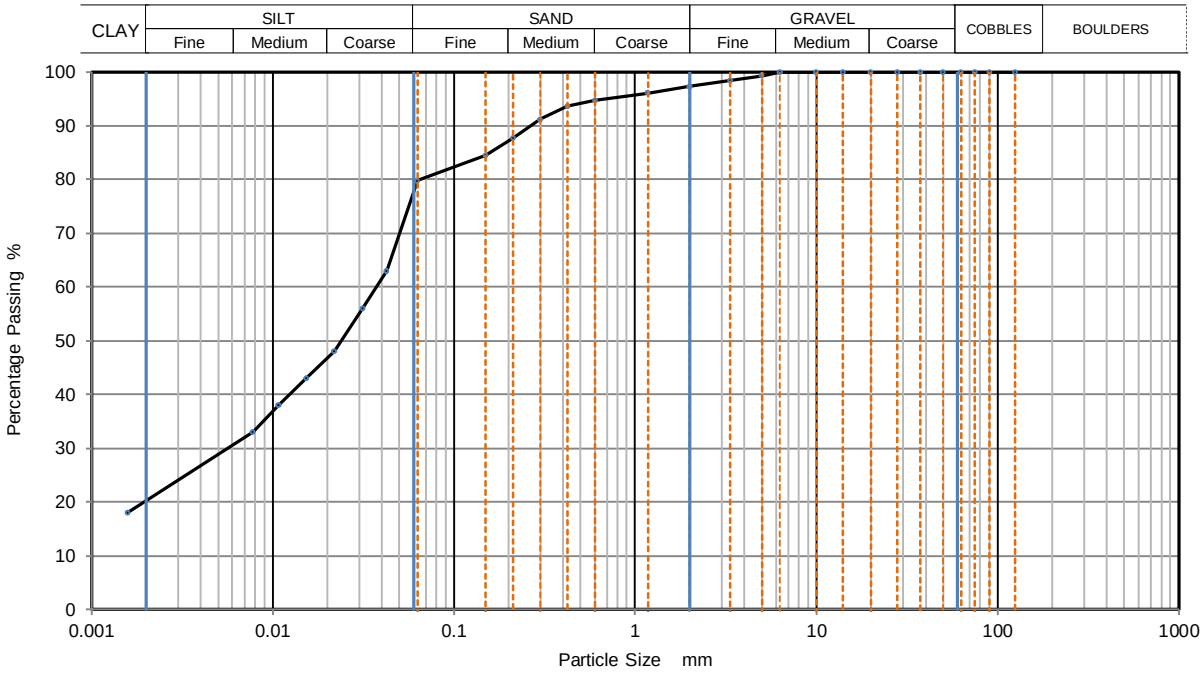
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 5 |
| Sand | 65 |
| Silt | 25 |
| Clay | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.255 |
| D30 | mm | 0.0628 |
| D10 | mm | 0.00974 |
| Uniformity Coefficient | | 26 |
| Curvature Coefficient | | 1.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020697 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020697 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 63 |
| 90 | 100 | 0.0314 | 56 |
| 75 | 100 | 0.0219 | 48 |
| 63 | 100 | 0.0154 | 43 |
| 50 | 100 | 0.0108 | 38 |
| 37.5 | 100 | 0.0078 | 33 |
| 28 | 100 | 0.0016 | 18 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 99 | | |
| 3.35 | 98 | | |
| 2 | 97 | | |
| 1.18 | 96 | | |
| 0.6 | 95 | Particle density (assumed) | |
| 0.425 | 94 | 2.67 | Mg/m3 |
| 0.3 | 91 | | |
| 0.212 | 88 | | |
| 0.15 | 85 | | |
| 0.063 | 80 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5221 |

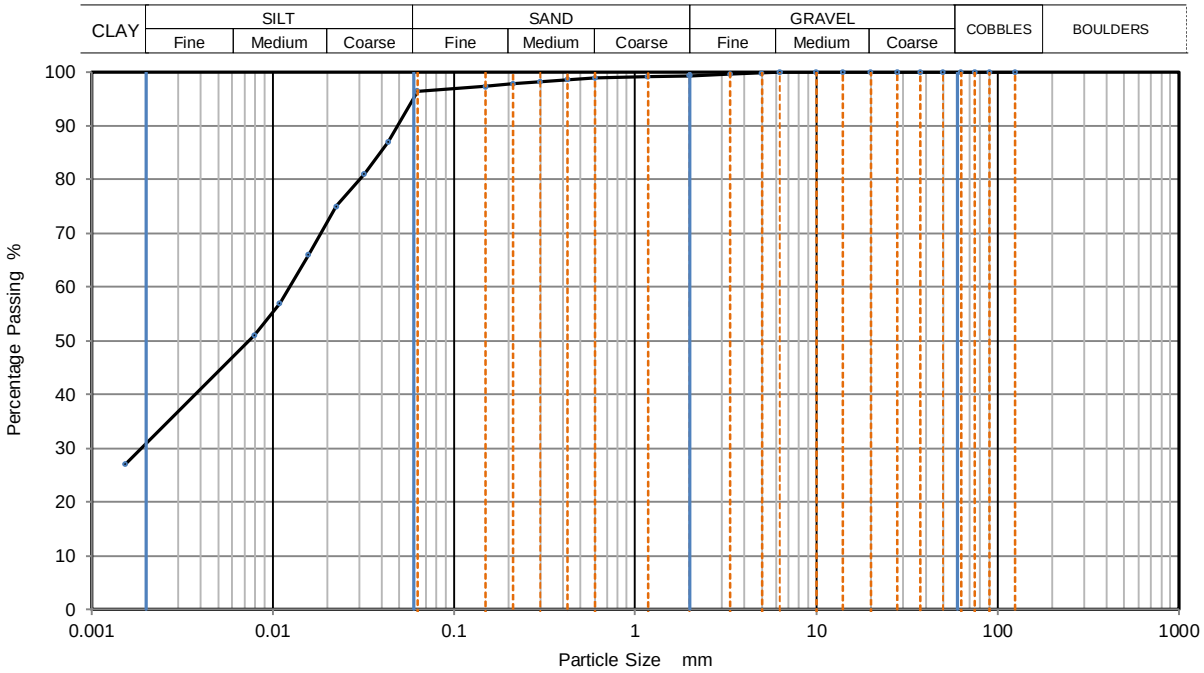
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 3 |
| Sand | 18 |
| Silt | 60 |
| Clay | 20 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0376 |
| D30 | mm | 0.00579 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020708 |
| Soil Description | Brown slightly gravelly sandy CLAY | | | Depth, m | 12.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020708 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0435 | 87 |
| 90 | 100 | 0.0321 | 81 |
| 75 | 100 | 0.0225 | 75 |
| 63 | 100 | 0.0157 | 66 |
| 50 | 100 | 0.0110 | 57 |
| 37.5 | 100 | 0.0080 | 51 |
| 28 | 100 | 0.0015 | 27 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 99 | | |
| 1.18 | 99 | | |
| 0.6 | 99 | Particle density (assumed) | |
| 0.425 | 99 | 2.67 | Mg/m3 |
| 0.3 | 98 | | |
| 0.212 | 98 | | |
| 0.15 | 97 | | |
| 0.063 | 96 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5937 |

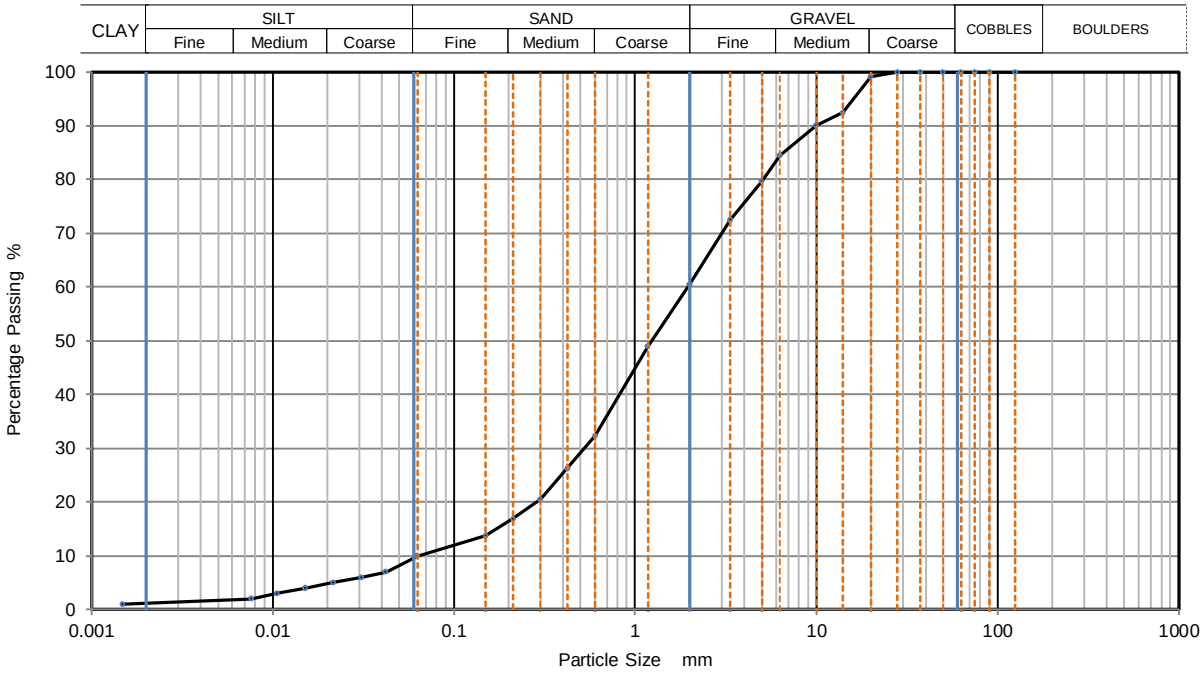
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 1 |
| Sand | 3 |
| Silt | 65 |
| Clay | 31 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0123 |
| D30 | mm | 0.00187 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | **326R** |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020644 |
| Soil Description | Grey gravelly clayey SAND M/G | | | Depth, m | 0.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020644 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 7 |
| 90 | 100 | 0.0311 | 6 |
| 75 | 100 | 0.0216 | 5 |
| 63 | 100 | 0.0152 | 4 |
| 50 | 100 | 0.0106 | 3 |
| 37.5 | 100 | 0.0076 | 2 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 99 | | |
| 14 | 92 | | |
| 10 | 90 | | |
| 6.3 | 85 | | |
| 5 | 80 | | |
| 3.35 | 73 | | |
| 2 | 61 | | |
| 1.18 | 49 | | |
| 0.6 | 32 | Particle density (assumed) | |
| 0.425 | 26 | 2.67 | Mg/m3 |
| 0.3 | 21 | | |
| 0.212 | 17 | | |
| 0.15 | 14 | | |
| 0.063 | 10 | | |

| Dry Mass of sample, g. | 3115 |
|---|---|

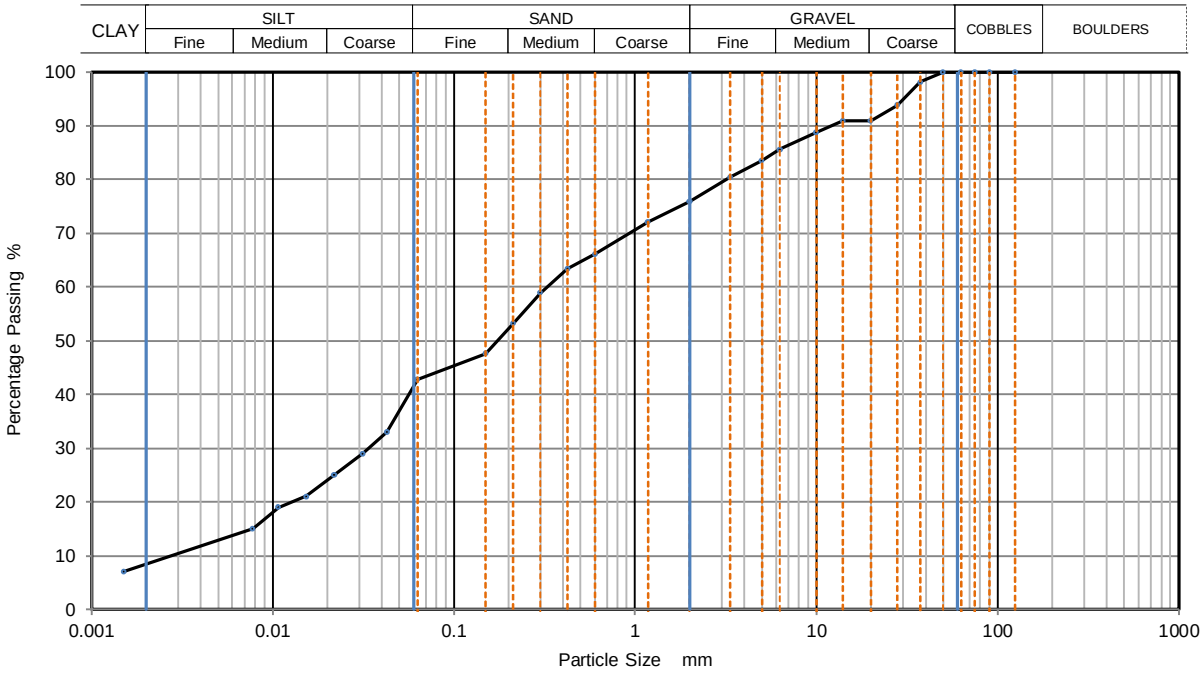
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 40 |
| Sand | 51 |
| Silt | 9 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.95 |
| D30 | mm | 0.526 |
| D10 | mm | 0.0631 |
| Uniformity Coefficient | | 31 |
| Curvature Coefficient | | 2.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020652 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020652 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 33 |
| 90 | 100 | 0.0315 | 29 |
| 75 | 100 | 0.0220 | 25 |
| 63 | 100 | 0.0153 | 21 |
| 50 | 100 | 0.0108 | 19 |
| 37.5 | 98 | 0.0078 | 15 |
| 28 | 94 | 0.0015 | 7 |
| 20 | 91 | | |
| 14 | 91 | | |
| 10 | 89 | | |
| 6.3 | 86 | | |
| 5 | 84 | | |
| 3.35 | 80 | | |
| 2 | 76 | | |
| 1.18 | 72 | | |
| 0.6 | 66 | Particle density (assumed) | |
| 0.425 | 63 | 2.67 | Mg/m3 |
| 0.3 | 59 | | |
| 0.212 | 53 | | |
| 0.15 | 48 | | |
| 0.063 | 43 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3829 |

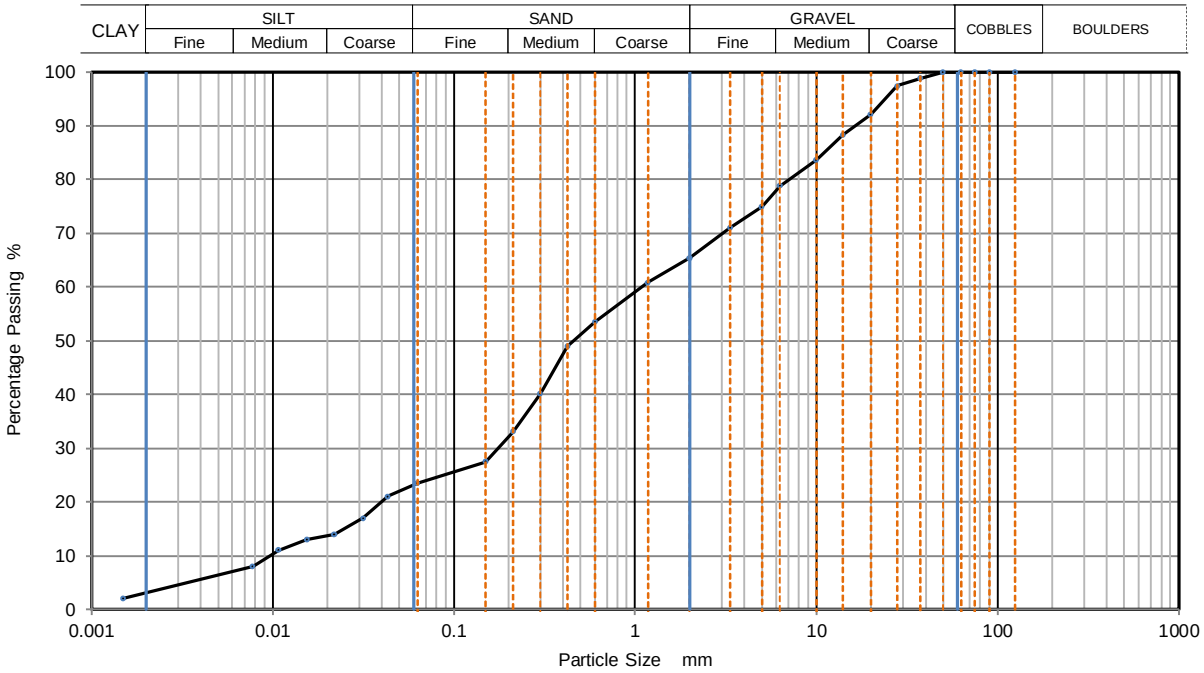
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 24 |
| Sand | 33 |
| Silt | 35 |
| Clay | 8 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.327 |
| D30 | mm | 0.0332 |
| D10 | mm | 0.00299 |
| Uniformity Coefficient | | 110 |
| Curvature Coefficient | | 1.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020659 |
| Soil Description | Brownish grey sandy clayey GRAVEL | | | Depth, m | 5.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020659 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0433 | 21 |
| 90 | 100 | 0.0316 | 17 |
| 75 | 100 | 0.0220 | 14 |
| 63 | 100 | 0.0155 | 13 |
| 50 | 100 | 0.0108 | 11 |
| 37.5 | 99 | 0.0078 | 8 |
| 28 | 97 | 0.0015 | 2 |
| 20 | 92 | | |
| 14 | 88 | | |
| 10 | 84 | | |
| 6.3 | 79 | | |
| 5 | 75 | | |
| 3.35 | 71 | | |
| 2 | 65 | | |
| 1.18 | 61 | | |
| 0.6 | 54 | Particle density (assumed) | |
| 0.425 | 49 | 2.67 | Mg/m3 |
| 0.3 | 40 | | |
| 0.212 | 33 | | |
| 0.15 | 28 | | |
| 0.063 | 24 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5991 |

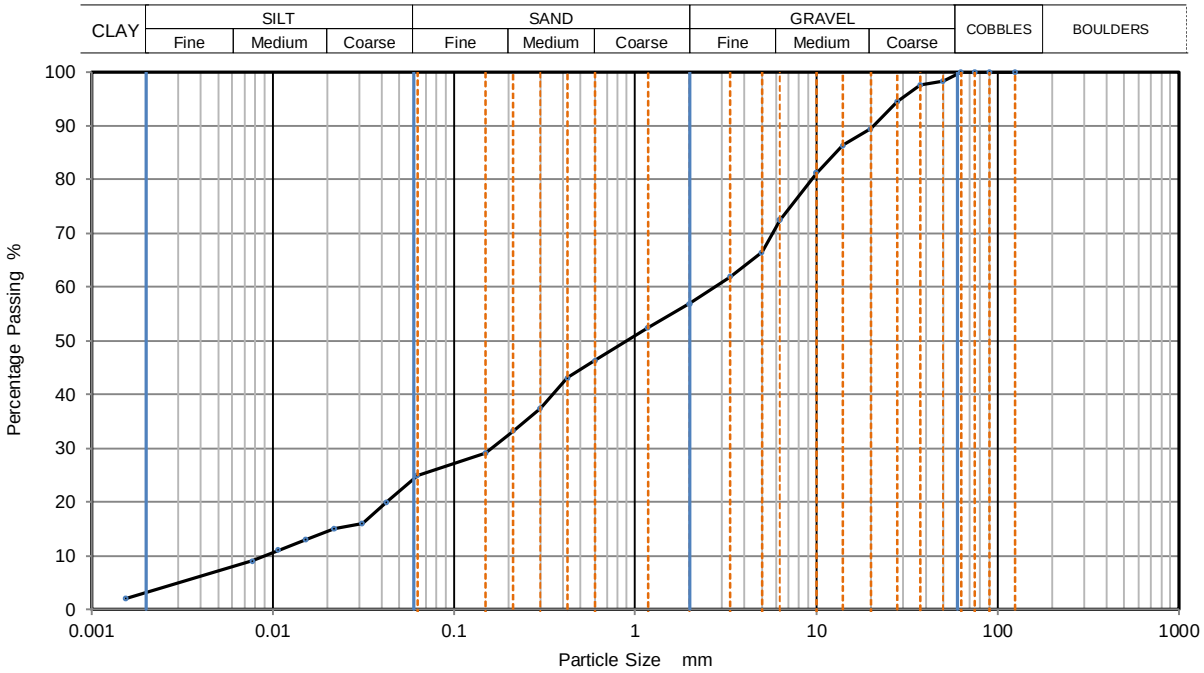
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 35 |
| Sand | 42 |
| Silt | 20 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.09 |
| D30 | mm | 0.175 |
| D10 | mm | 0.00963 |
| Uniformity Coefficient | | 110 |
| Curvature Coefficient | | 2.9 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020662 |
| Soil Description | | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020662 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 20 |
| 90 | 100 | 0.0313 | 16 |
| 75 | 100 | 0.0219 | 15 |
| 63 | 100 | 0.0153 | 13 |
| 50 | 98 | 0.0107 | 11 |
| 37.5 | 98 | 0.0077 | 9 |
| 28 | 95 | 0.0016 | 2 |
| 20 | 89 | | |
| 14 | 86 | | |
| 10 | 81 | | |
| 6.3 | 73 | | |
| 5 | 66 | | |
| 3.35 | 62 | | |
| 2 | 57 | | |
| 1.18 | 52 | | |
| 0.6 | 46 | Particle density (assumed) | |
| 0.425 | 43 | 2.67 | Mg/m3 |
| 0.3 | 37 | | |
| 0.212 | 33 | | |
| 0.15 | 29 | | |
| 0.063 | 25 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 11149 |

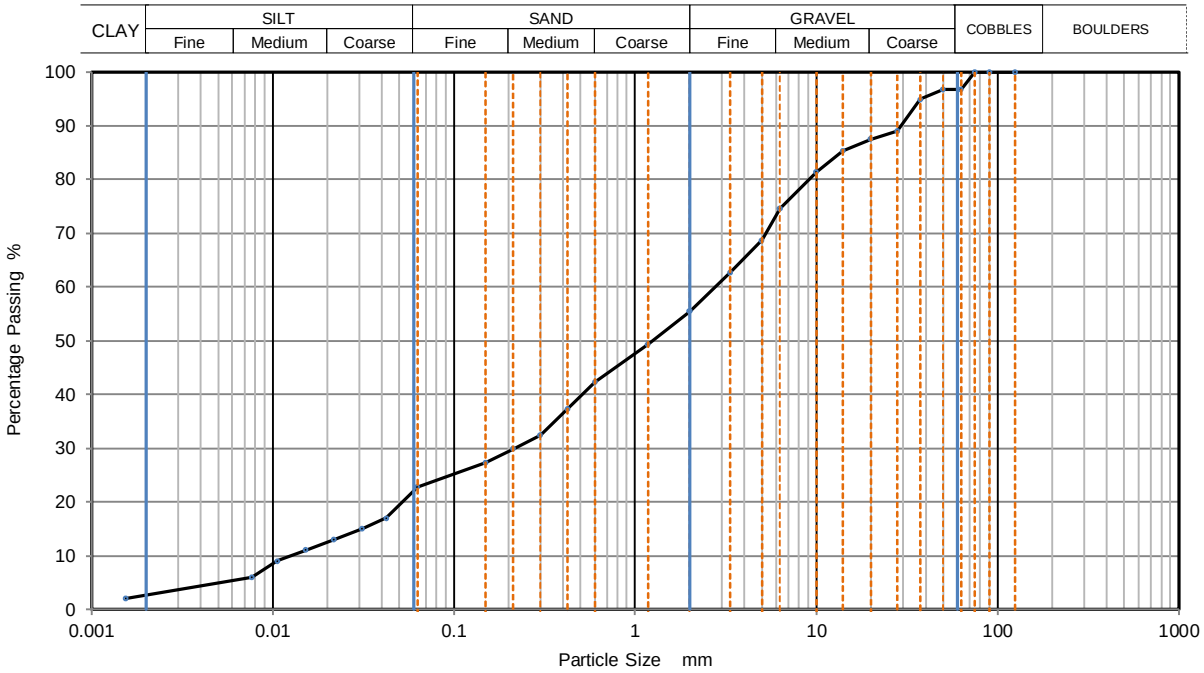
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 43 |
| Sand | 32 |
| Silt | 22 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.76 |
| D30 | mm | 0.162 |
| D10 | mm | 0.00938 |
| Uniformity Coefficient | | 290 |
| Curvature Coefficient | | 1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020665 |
| Soil Description | Grey gravelly clayey SAND | | | Depth, m | 7.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020665 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0426 | 17 |
| 90 | 100 | 0.0313 | 15 |
| 75 | 100 | 0.0218 | 13 |
| 63 | 97 | 0.0152 | 11 |
| 50 | 97 | 0.0106 | 9 |
| 37.5 | 95 | 0.0077 | 6 |
| 28 | 89 | 0.0016 | 2 |
| 20 | 88 | | |
| 14 | 85 | | |
| 10 | 81 | | |
| 6.3 | 75 | | |
| 5 | 69 | | |
| 3.35 | 63 | | |
| 2 | 56 | | |
| 1.18 | 49 | | |
| 0.6 | 42 | Particle density (assumed) | |
| 0.425 | 37 | 2.67 | Mg/m3 |
| 0.3 | 32 | | |
| 0.212 | 30 | | |
| 0.15 | 27 | | |
| 0.063 | 23 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 10814 |

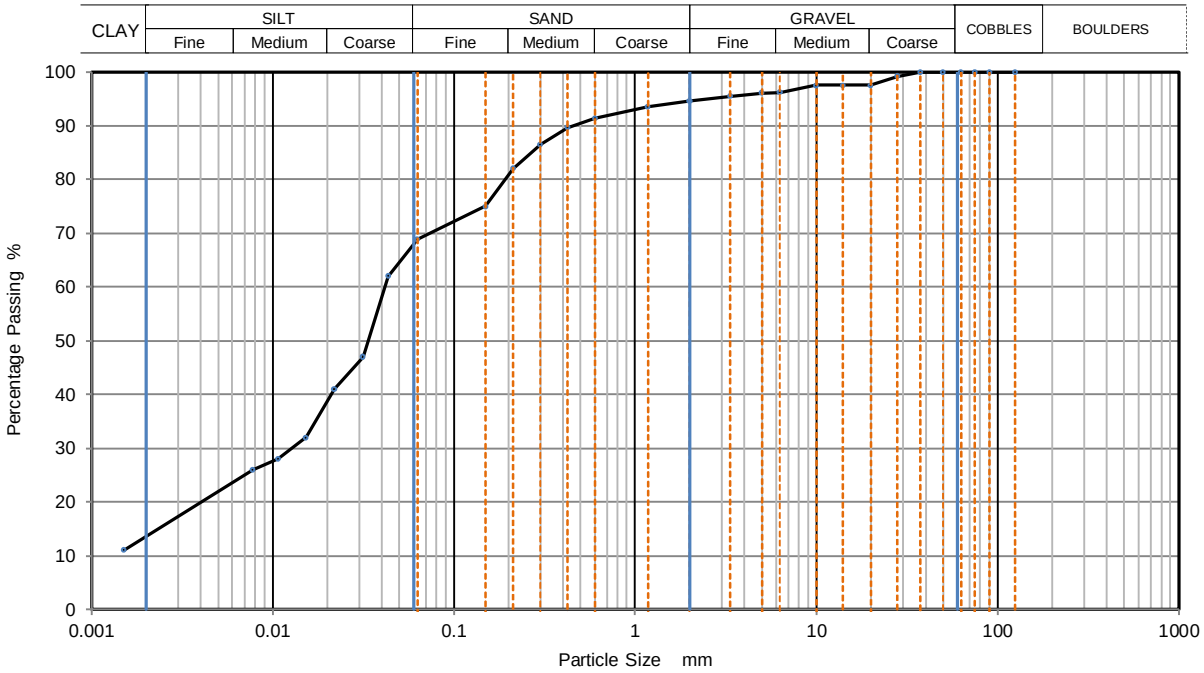
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 3 |
| Gravel | 41 |
| Sand | 33 |
| Silt | 20 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.76 |
| D30 | mm | 0.214 |
| D10 | mm | 0.0133 |
| Uniformity Coefficient | | 210 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1028968 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 9.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1028968 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0435 | 62 |
| 90 | 100 | 0.0315 | 47 |
| 75 | 100 | 0.0220 | 41 |
| 63 | 100 | 0.0153 | 32 |
| 50 | 100 | 0.0107 | 28 |
| 37.5 | 100 | 0.0078 | 26 |
| 28 | 99 | 0.0015 | 11 |
| 20 | 98 | | |
| 14 | 98 | | |
| 10 | 98 | | |
| 6.3 | 96 | | |
| 5 | 96 | | |
| 3.35 | 96 | | |
| 2 | 95 | | |
| 1.18 | 94 | | |
| 0.6 | 91 | Particle density (assumed) | |
| 0.425 | 90 | 2.67 | Mg/m3 |
| 0.3 | 87 | | |
| 0.212 | 82 | | |
| 0.15 | 75 | | |
| 0.063 | 69 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4378 |

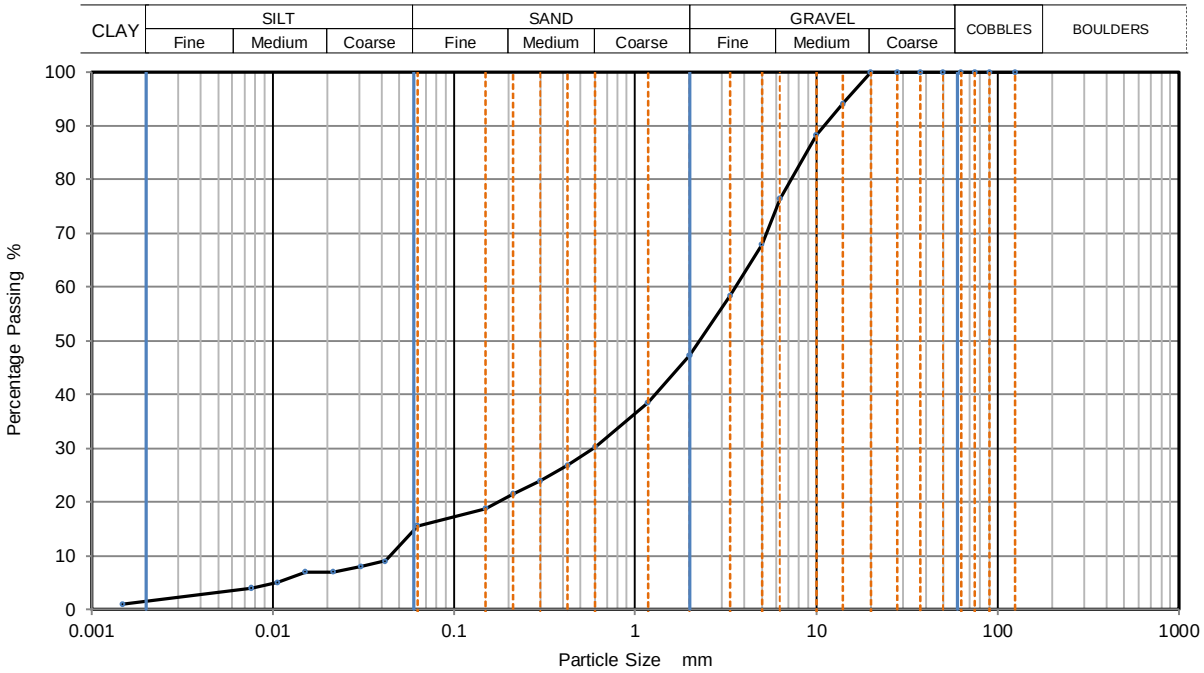
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 5 |
| Sand | 26 |
| Silt | 56 |
| Clay | 13 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0413 |
| D30 | mm | 0.0127 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020674 |
| Soil Description | Grey clayey SAND + GRAVEL M/G | | | Depth, m | 1.20 |
| Specimen Reference | 6 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020674 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0418 | 9 |
| 90 | 100 | 0.0308 | 8 |
| 75 | 100 | 0.0216 | 7 |
| 63 | 100 | 0.0152 | 7 |
| 50 | 100 | 0.0106 | 5 |
| 37.5 | 100 | 0.0076 | 4 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 94 | | |
| 10 | 88 | | |
| 6.3 | 76 | | |
| 5 | 68 | | |
| 3.35 | 58 | | |
| 2 | 47 | | |
| 1.18 | 39 | | |
| 0.6 | 30 | Particle density (assumed) | |
| 0.425 | 27 | 2.67 | Mg/m3 |
| 0.3 | 24 | | |
| 0.212 | 22 | | |
| 0.15 | 19 | | |
| 0.063 | 16 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 1483 |

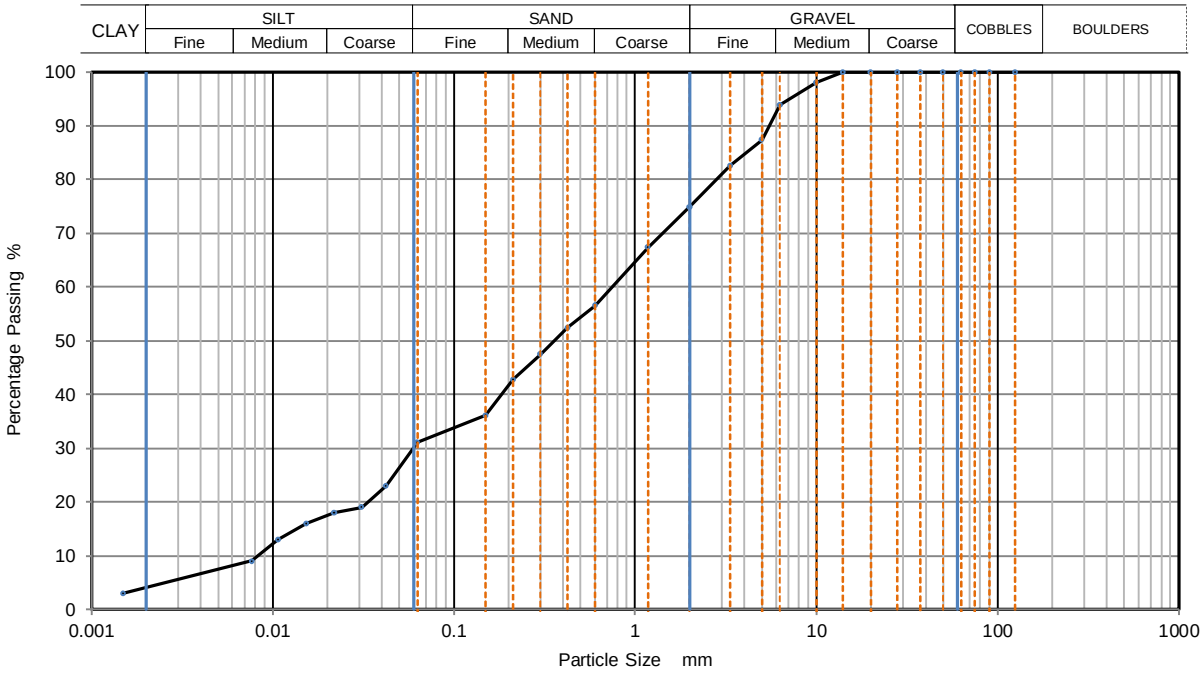
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 53 |
| Sand | 32 |
| Silt | 14 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 3.58 |
| D30 | mm | 0.586 |
| D10 | mm | 0.0435 |
| Uniformity Coefficient | | 82 |
| Curvature Coefficient | | 2.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020677 |
| Soil Description | Grey sandy gravelly CLAY M/G | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020677 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 23 |
| 90 | 100 | 0.0311 | 19 |
| 75 | 100 | 0.0219 | 18 |
| 63 | 100 | 0.0153 | 16 |
| 50 | 100 | 0.0107 | 13 |
| 37.5 | 100 | 0.0077 | 9 |
| 28 | 100 | 0.0015 | 3 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 98 | | |
| 6.3 | 94 | | |
| 5 | 87 | | |
| 3.35 | 83 | | |
| 2 | 75 | | |
| 1.18 | 67 | | |
| 0.6 | 57 | Particle density (assumed) | |
| 0.425 | 52 | 2.67 | Mg/m3 |
| 0.3 | 48 | | |
| 0.212 | 43 | | |
| 0.15 | 36 | | |
| 0.063 | 31 | | |

| Dry Mass of sample, g. | 2883 |
|---|---|

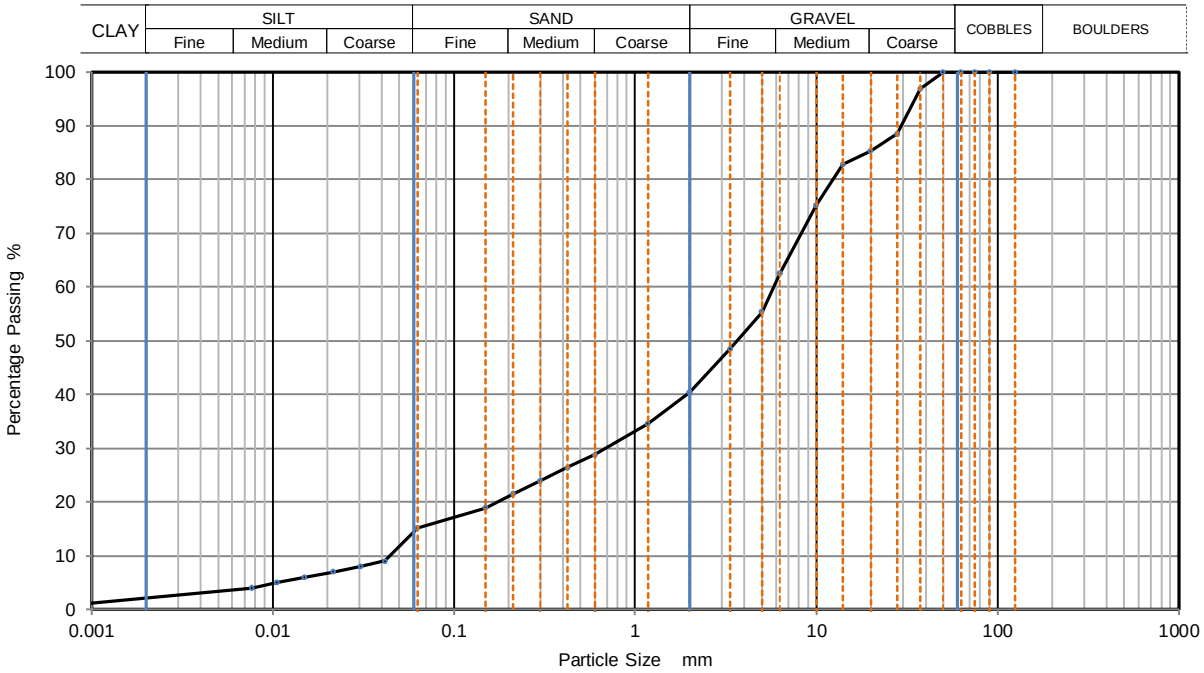
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 25 |
| Sand | 44 |
| Silt | 27 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.745 |
| D30 | mm | 0.0599 |
| D10 | mm | 0.00848 |
| Uniformity Coefficient | | 88 |
| Curvature Coefficient | | 0.57 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | **326R** |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020683 |
| Soil Description | Grey sandy gravelly CLAY | | | Depth, m | 4.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020683 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0417 | 9 |
| 90 | 100 | 0.0307 | 8 |
| 75 | 100 | 0.0216 | 7 |
| 63 | 100 | 0.0151 | 6 |
| 50 | 100 | 0.0106 | 5 |
| 37.5 | 97 | 0.0077 | 4 |
| 28 | 89 | 0.0009 | 1 |
| 20 | 85 | | |
| 14 | 83 | | |
| 10 | 75 | | |
| 6.3 | 63 | | |
| 5 | 55 | | |
| 3.35 | 49 | | |
| 2 | 40 | | |
| 1.18 | 35 | | |
| 0.6 | 29 | Particle density (assumed) | |
| 0.425 | 26 | 2.67 | Mg/m3 |
| 0.3 | 24 | | |
| 0.212 | 22 | | |
| 0.15 | 19 | | |
| 0.063 | 15 | | |

| Dry Mass of sample, g. | 8012 |
|---|---|

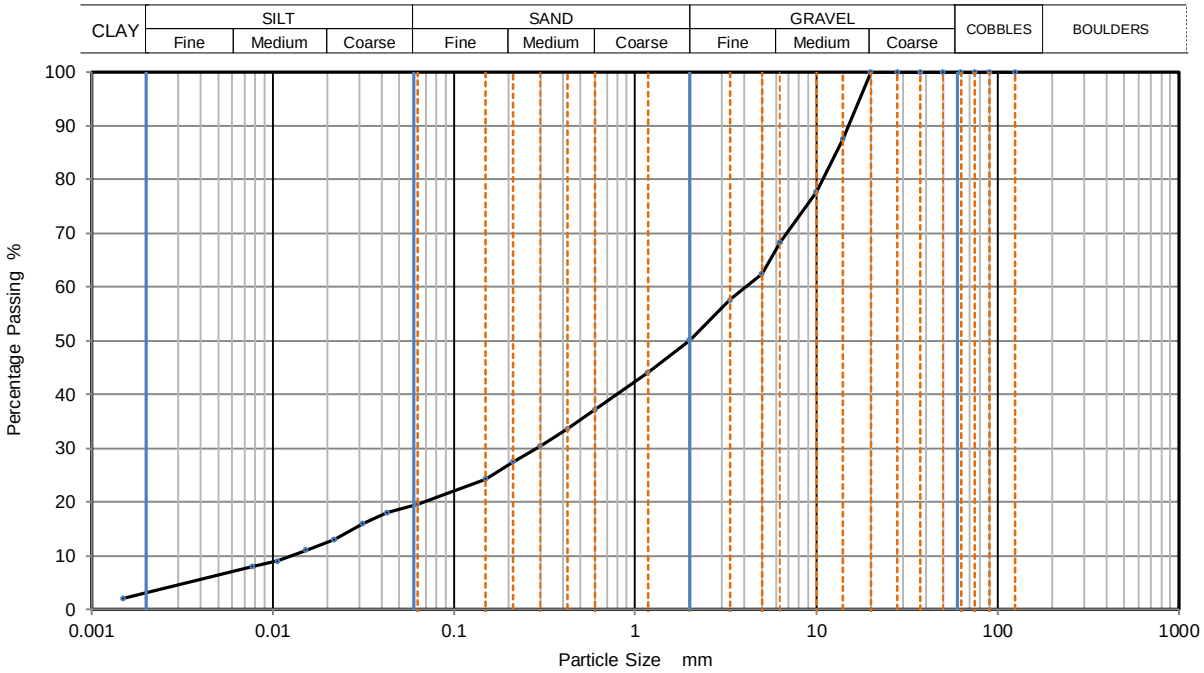
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 60 |
| Sand | 25 |
| Silt | 13 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 5.8 |
| D30 | mm | 0.694 |
| D10 | mm | 0.0443 |
| Uniformity Coefficient | | 130 |
| Curvature Coefficient | | 1.9 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030252 |
| Soil Description | Grey sandy gravelly CLAY | | | Depth, m | 5.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | D |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030252 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 18 |
| 90 | 100 | 0.0315 | 16 |
| 75 | 100 | 0.0219 | 13 |
| 63 | 100 | 0.0153 | 11 |
| 50 | 100 | 0.0107 | 9 |
| 37.5 | 100 | 0.0078 | 8 |
| 28 | 100 | 0.0015 | 2 |
| 20 | 100 | | |
| 14 | 88 | | |
| 10 | 78 | | |
| 6.3 | 68 | | |
| 5 | 62 | | |
| 3.35 | 58 | | |
| 2 | 50 | | |
| 1.18 | 44 | | |
| 0.6 | 37 | Particle density (assumed) | |
| 0.425 | 34 | 2.67 | Mg/m3 |
| 0.3 | 30 | | |
| 0.212 | 28 | | |
| 0.15 | 24 | | |
| 0.063 | 20 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 312 |

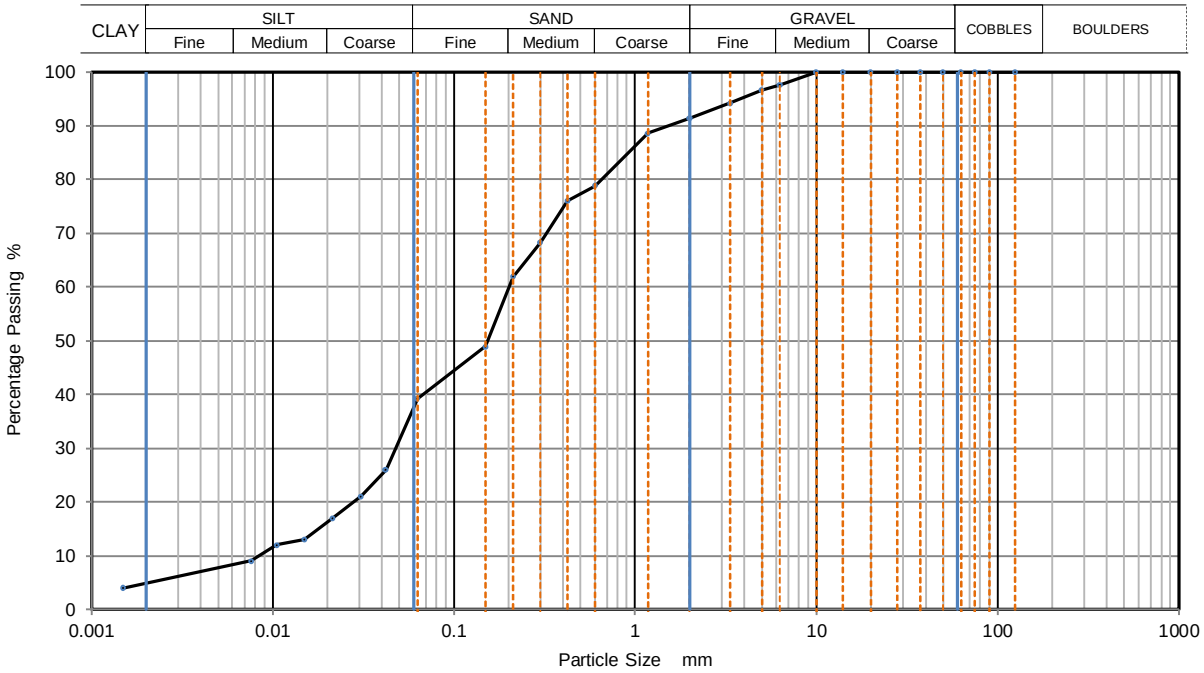
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 50 |
| Sand | 31 |
| Silt | 16 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 4.1 |
| D30 | mm | 0.286 |
| D10 | mm | 0.0132 |
| Uniformity Coefficient | | 310 |
| Curvature Coefficient | | 1.5 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030259 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 7.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030259 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 26 |
| 90 | 100 | 0.0308 | 21 |
| 75 | 100 | 0.0215 | 17 |
| 63 | 100 | 0.0150 | 13 |
| 50 | 100 | 0.0106 | 12 |
| 37.5 | 100 | 0.0076 | 9 |
| 28 | 100 | 0.0015 | 4 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 98 | | |
| 5 | 97 | | |
| 3.35 | 94 | | |
| 2 | 91 | | |
| 1.18 | 89 | | |
| 0.6 | 79 | Particle density (assumed) | |
| 0.425 | 76 | 2.67 | Mg/m3 |
| 0.3 | 68 | | |
| 0.212 | 62 | | |
| 0.15 | 49 | | |
| 0.063 | 39 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4002 |

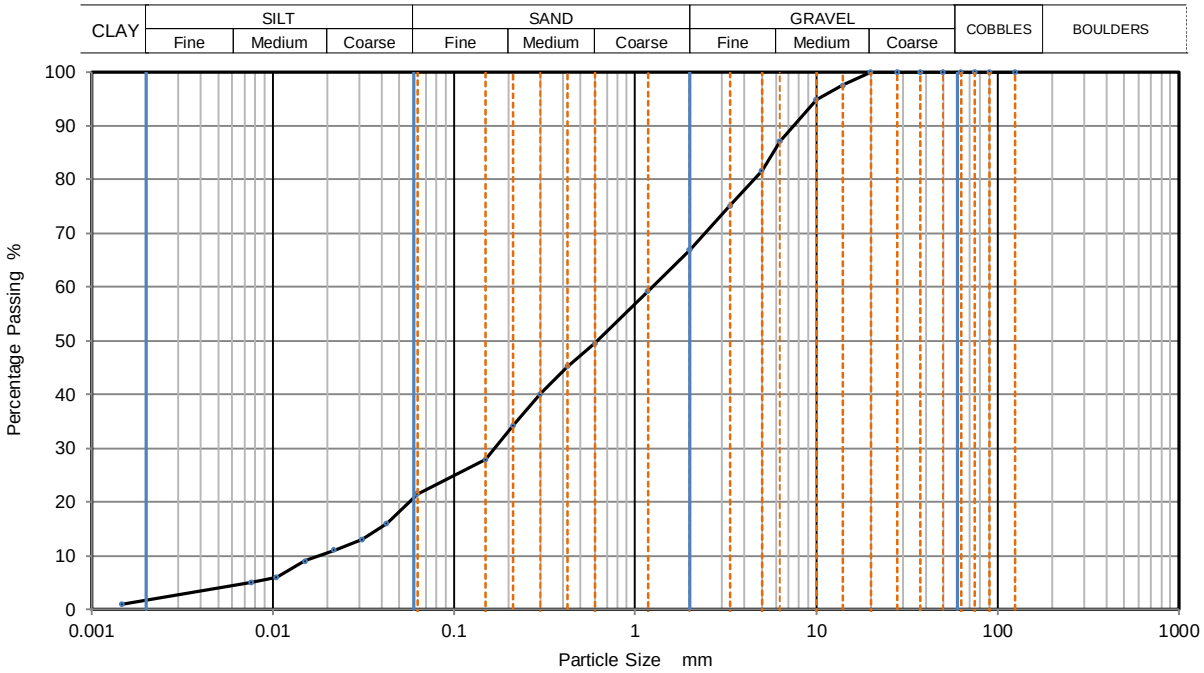
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 9 |
| Sand | 52 |
| Silt | 35 |
| Clay | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.202 |
| D30 | mm | 0.0479 |
| D10 | mm | 0.00867 |
| Uniformity Coefficient | | 23 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030265 |
| Soil Description | Grey gravelly clayey SAND | | | Depth, m | 10.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030265 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0426 | 16 |
| 90 | 100 | 0.0312 | 13 |
| 75 | 100 | 0.0218 | 11 |
| 63 | 100 | 0.0151 | 9 |
| 50 | 100 | 0.0105 | 6 |
| 37.5 | 100 | 0.0076 | 5 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 98 | | |
| 10 | 95 | | |
| 6.3 | 87 | | |
| 5 | 82 | | |
| 3.35 | 75 | | |
| 2 | 67 | | |
| 1.18 | 59 | | |
| 0.6 | 50 | Particle density (assumed) | |
| 0.425 | 45 | 2.67 | Mg/m3 |
| 0.3 | 40 | | |
| 0.212 | 34 | | |
| 0.15 | 28 | | |
| 0.063 | 22 | | |

| Dry Mass of sample, g. | 4644 |
|---|---|

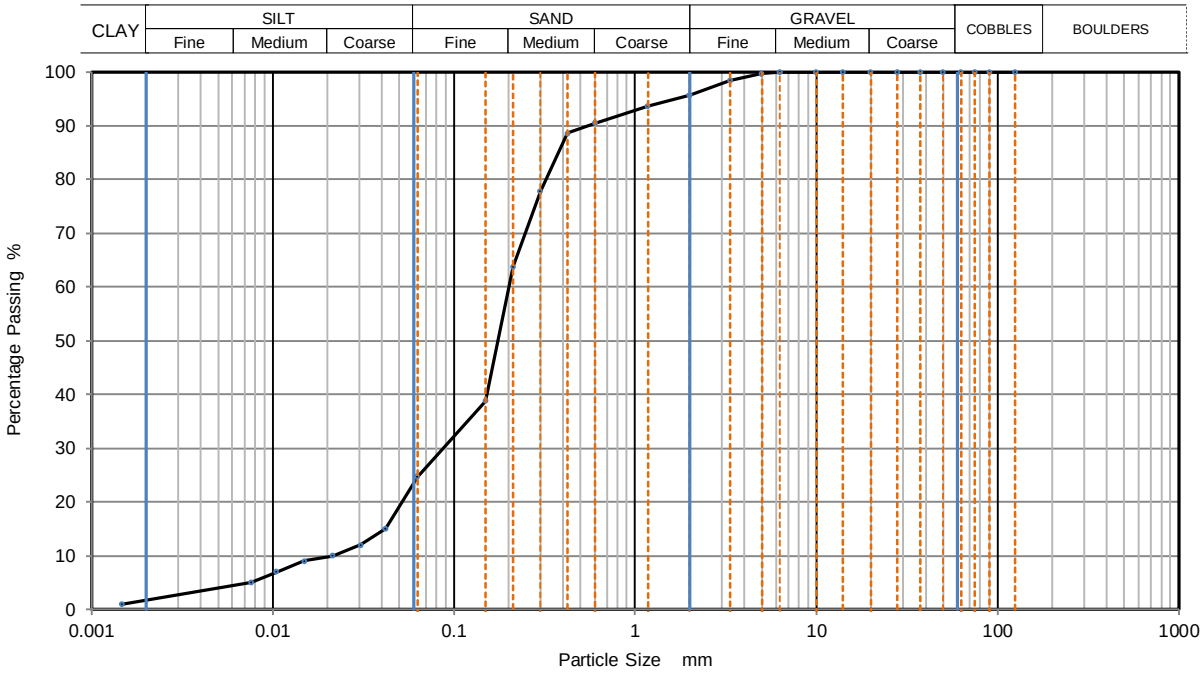
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 33 |
| Sand | 45 |
| Silt | 20 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.24 |
| D30 | mm | 0.168 |
| D10 | mm | 0.0179 |
| Uniformity Coefficient | | 69 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030270 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 13.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030270 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 15 |
| 90 | 100 | 0.0307 | 12 |
| 75 | 100 | 0.0214 | 10 |
| 63 | 100 | 0.0150 | 9 |
| 50 | 100 | 0.0105 | 7 |
| 37.5 | 100 | 0.0076 | 5 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 98 | | |
| 2 | 96 | | |
| 1.18 | 94 | | |
| 0.6 | 91 | Particle density (assumed) | |
| 0.425 | 89 | 2.67 Mg/m3 | |
| 0.3 | 78 | | |
| 0.212 | 64 | | |
| 0.15 | 39 | | |
| 0.063 | 25 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3993 |

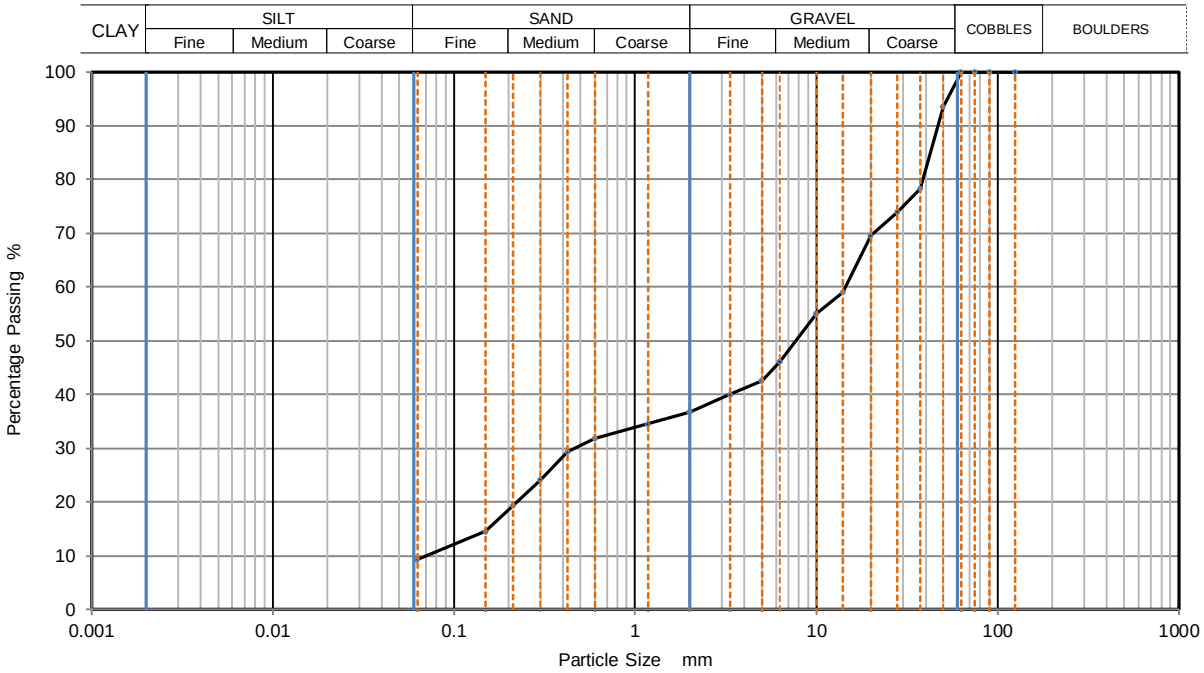
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 4 |
| Sand | 71 |
| Silt | 23 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.201 |
| D30 | mm | 0.0872 |
| D10 | mm | 0.0212 |
| Uniformity Coefficient | | 9.5 |
| Curvature Coefficient | | 1.8 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030272 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 15.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1030272 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 94 | | |
| 37.5 | 78 | | |
| 28 | 74 | | |
| 20 | 70 | | |
| 14 | 59 | | |
| 10 | 55 | | |
| 6.3 | 46 | | |
| 5 | 43 | | |
| 3.35 | 40 | | |
| 2 | 37 | | |
| 1.18 | 35 | | |
| 0.6 | 32 | | |
| 0.425 | 29 | | |
| 0.3 | 24 | | |
| 0.212 | 19 | | |
| 0.15 | 15 | | |
| 0.063 | 9 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 6311 |

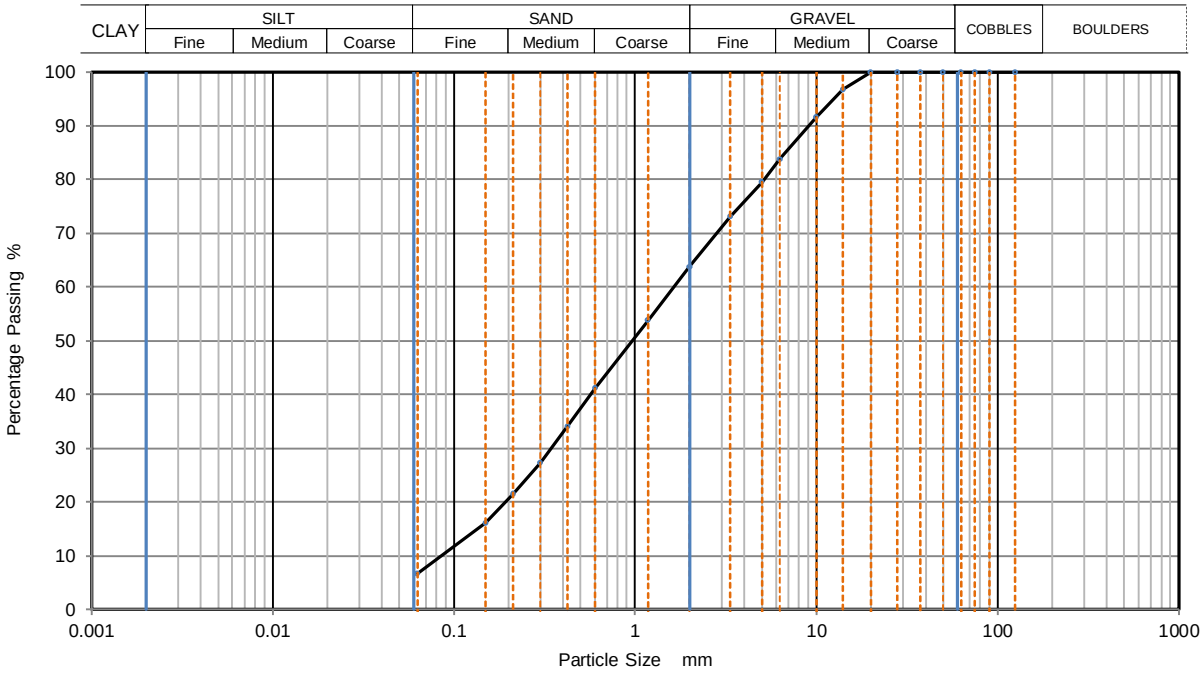
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 63 |
| Sand | 27 |
| | |
| Fines <0.063mm | 9 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 14.5 |
| D30 | mm | 0.468 |
| D10 | mm | 0.0711 |
| Uniformity Coefficient | | 200 |
| Curvature Coefficient | | 0.21 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029566 |
| Soil Description | Grey gravelly clayey SAND | | | Depth, m | 0.50 |
| Specimen Reference | 6 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1029566 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 97 | | |
| 10 | 92 | | |
| 6.3 | 84 | | |
| 5 | 80 | | |
| 3.35 | 73 | | |
| 2 | 64 | | |
| 1.18 | 54 | | |
| 0.6 | 41 | | |
| 0.425 | 34 | | |
| 0.3 | 27 | | |
| 0.212 | 22 | | |
| 0.15 | 16 | | |
| 0.063 | 7 | | |

| Dry Mass of sample, g. | 10941 |
|---|---|

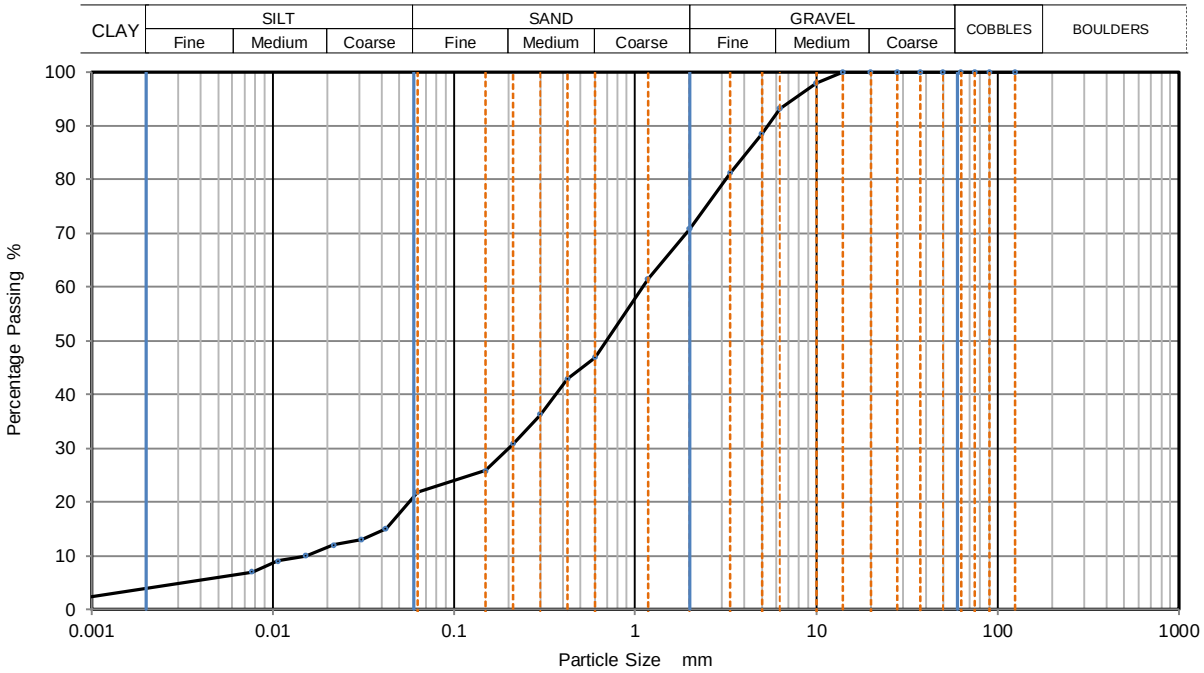
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 36 |
| Sand | 57 |
| | |
| Fines <0.063mm | 7 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.64 |
| D30 | mm | 0.345 |
| D10 | mm | 0.0853 |
| Uniformity Coefficient | | 19 |
| Curvature Coefficient | | 0.85 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029570 |
| Soil Description | Grey gravelly clayey SAND M/G | | | Depth, m | 1.20 |
| Specimen Reference | 6 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029570 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 15 |
| 90 | 100 | 0.0310 | 13 |
| 75 | 100 | 0.0217 | 12 |
| 63 | 100 | 0.0152 | 10 |
| 50 | 100 | 0.0107 | 9 |
| 37.5 | 100 | 0.0077 | 7 |
| 28 | 100 | 0.0009 | 2 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 98 | | |
| 6.3 | 93 | | |
| 5 | 89 | | |
| 3.35 | 81 | | |
| 2 | 71 | | |
| 1.18 | 62 | | |
| 0.6 | 47 | Particle density (assumed) | |
| 0.425 | 43 | 2.67 | Mg/m3 |
| 0.3 | 36 | | |
| 0.212 | 31 | | |
| 0.15 | 26 | | |
| 0.063 | 22 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4119 |

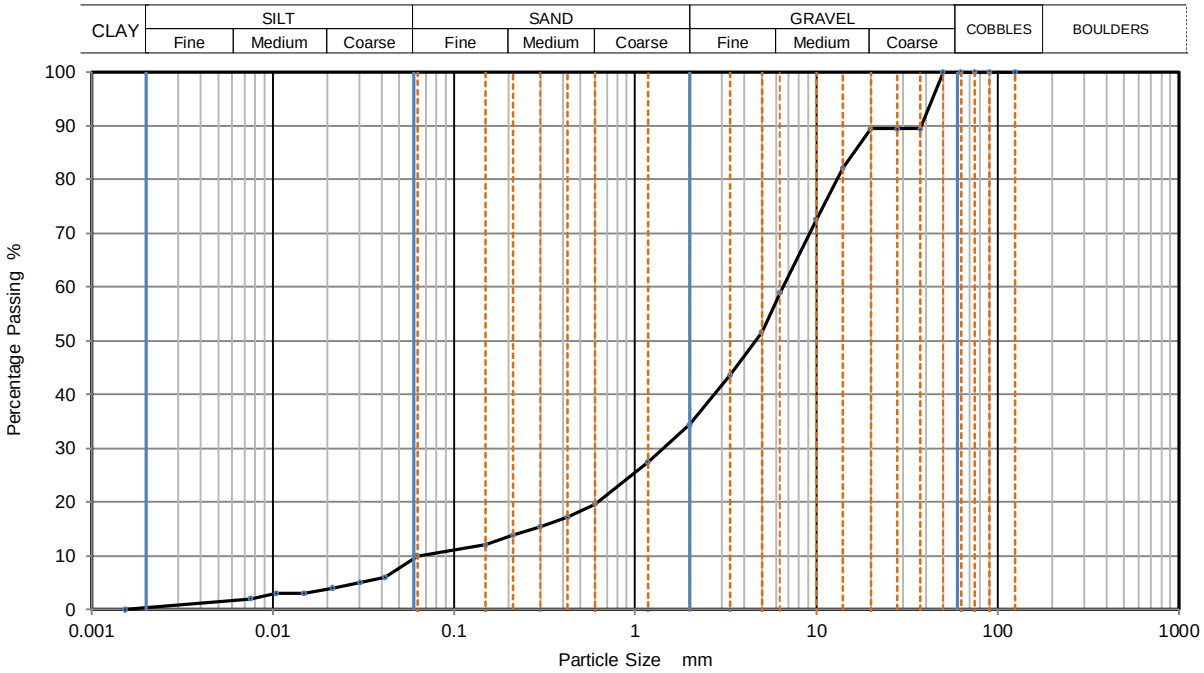
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 29 |
| Sand | 49 |
| Silt | 18 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.1 |
| D30 | mm | 0.201 |
| D10 | mm | 0.0138 |
| Uniformity Coefficient | | 80 |
| Curvature Coefficient | | 2.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | |
| Soil Description | Grey gravelly clayey SAND M/G | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | 1.2342E+13 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0417 | 6 |
| 90 | 100 | 0.0306 | 5 |
| 75 | 100 | 0.0215 | 4 |
| 63 | 100 | 0.0150 | 3 |
| 50 | 100 | 0.0105 | 3 |
| 37.5 | 89 | 0.0076 | 2 |
| 28 | 89 | 0.0015 | 0 |
| 20 | 89 | | |
| 14 | 82 | | |
| 10 | 73 | | |
| 6.3 | 59 | | |
| 5 | 52 | | |
| 3.35 | 44 | | |
| 2 | 34 | | |
| 1.18 | 27 | | |
| 0.6 | 20 | Particle density (assumed) | |
| 0.425 | 17 | 2.67 | Mg/m3 |
| 0.3 | 15 | | |
| 0.212 | 14 | | |
| 0.15 | 12 | | |
| 0.063 | 10 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 1598 |

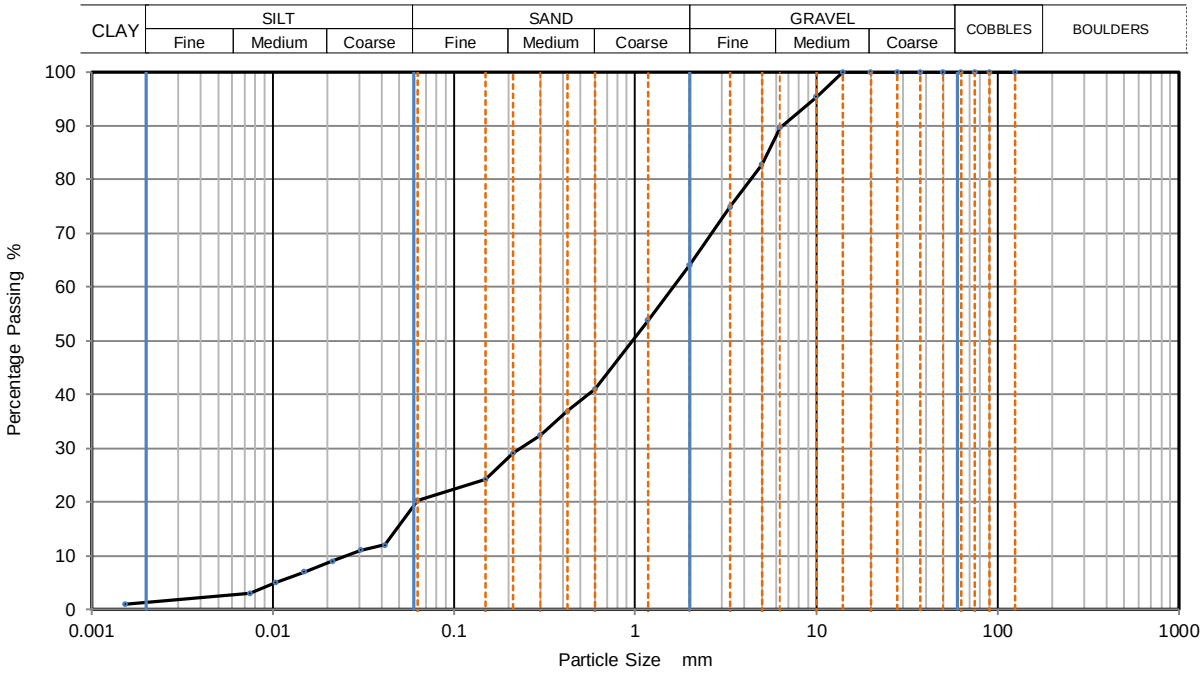
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 66 |
| Sand | 24 |
| Silt | 9 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 6.53 |
| D30 | mm | 1.44 |
| D10 | mm | 0.0628 |
| Uniformity Coefficient | | 100 |
| Curvature Coefficient | | 5 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029589 |
| Soil Description | Grey gravelly clayey SAND | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029589 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0417 | 12 |
| 90 | 100 | 0.0307 | 11 |
| 75 | 100 | 0.0215 | 9 |
| 63 | 100 | 0.0150 | 7 |
| 50 | 100 | 0.0104 | 5 |
| 37.5 | 100 | 0.0075 | 3 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 95 | | |
| 6.3 | 90 | | |
| 5 | 83 | | |
| 3.35 | 75 | | |
| 2 | 64 | | |
| 1.18 | 54 | | |
| 0.6 | 41 | Particle density (assumed) | |
| 0.425 | 37 | 2.67 | Mg/m3 |
| 0.3 | 32 | | |
| 0.212 | 29 | | |
| 0.15 | 24 | | |
| 0.063 | 20 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3145 |

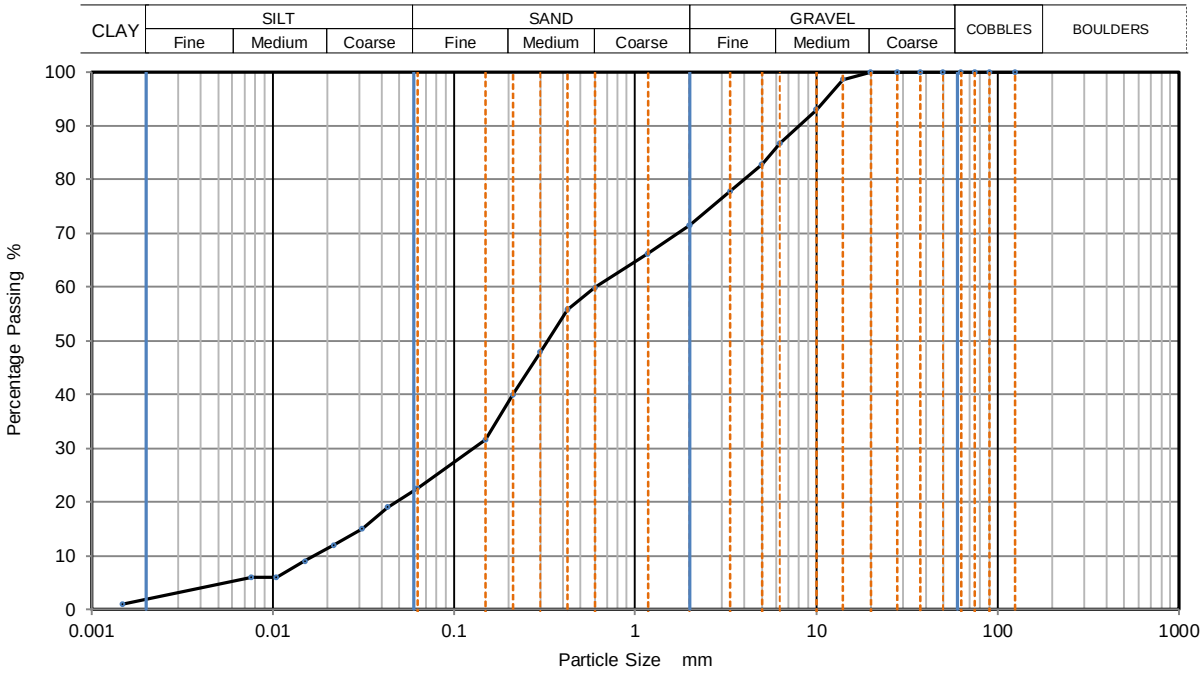
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 36 |
| Sand | 44 |
| Silt | 19 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.62 |
| D30 | mm | 0.234 |
| D10 | mm | 0.0258 |
| Uniformity Coefficient | | 63 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029595 |
| Soil Description | Grey sandy gravelly CLAY | | | Depth, m | 9.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029595 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0431 | 19 |
| 90 | 100 | 0.0313 | 15 |
| 75 | 100 | 0.0218 | 12 |
| 63 | 100 | 0.0151 | 9 |
| 50 | 100 | 0.0105 | 6 |
| 37.5 | 100 | 0.0076 | 6 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 99 | | |
| 10 | 93 | | |
| 6.3 | 87 | | |
| 5 | 83 | | |
| 3.35 | 78 | | |
| 2 | 72 | | |
| 1.18 | 66 | | |
| 0.6 | 60 | Particle density (assumed) | |
| 0.425 | 56 | 2.67 | Mg/m3 |
| 0.3 | 48 | | |
| 0.212 | 40 | | |
| 0.15 | 32 | | |
| 0.063 | 23 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 2339 |

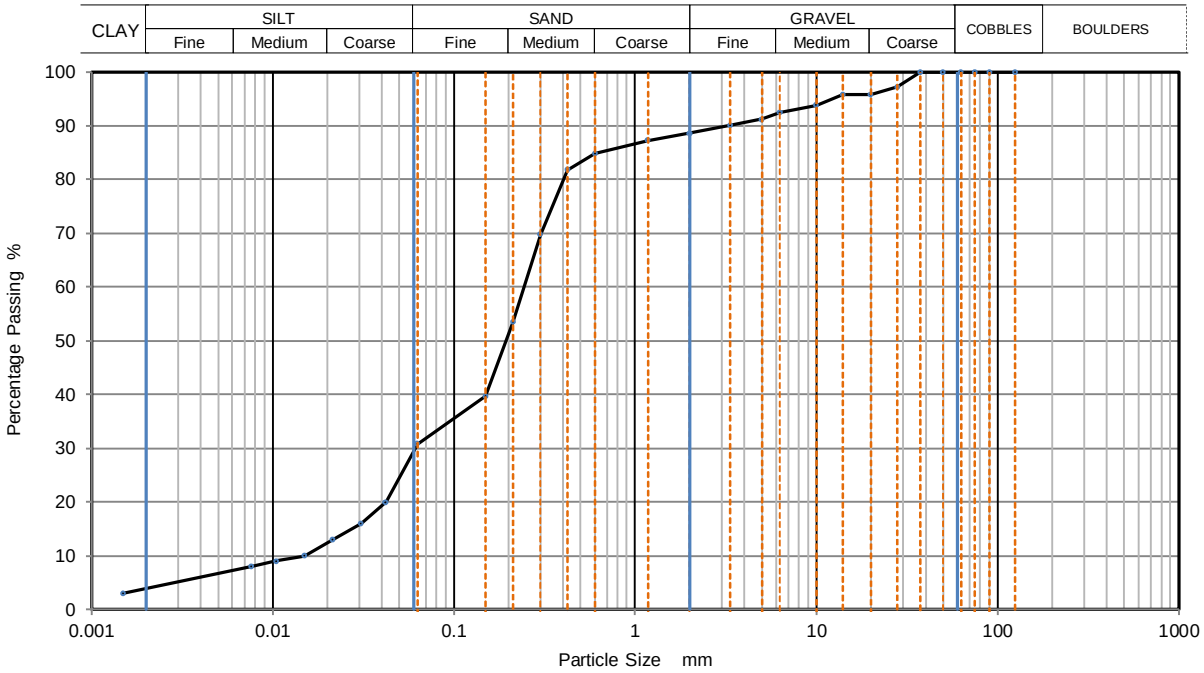
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 29 |
| Sand | 49 |
| Silt | 20 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.607 |
| D30 | mm | 0.129 |
| D10 | mm | 0.0167 |
| Uniformity Coefficient | | 36 |
| Curvature Coefficient | | 1.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029594 |
| Soil Description | Brown sandy slightly gravelly CLAY | | | Depth, m | 10.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029594 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 20 |
| 90 | 100 | 0.0308 | 16 |
| 75 | 100 | 0.0215 | 13 |
| 63 | 100 | 0.0150 | 10 |
| 50 | 100 | 0.0105 | 9 |
| 37.5 | 100 | 0.0076 | 8 |
| 28 | 97 | 0.0015 | 3 |
| 20 | 96 | | |
| 14 | 96 | | |
| 10 | 94 | | |
| 6.3 | 93 | | |
| 5 | 91 | | |
| 3.35 | 90 | | |
| 2 | 89 | | |
| 1.18 | 87 | | |
| 0.6 | 85 | Particle density (assumed) | |
| 0.425 | 82 | 2.67 | Mg/m3 |
| 0.3 | 70 | | |
| 0.212 | 54 | | |
| 0.15 | 40 | | |
| 0.063 | 31 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3996 |

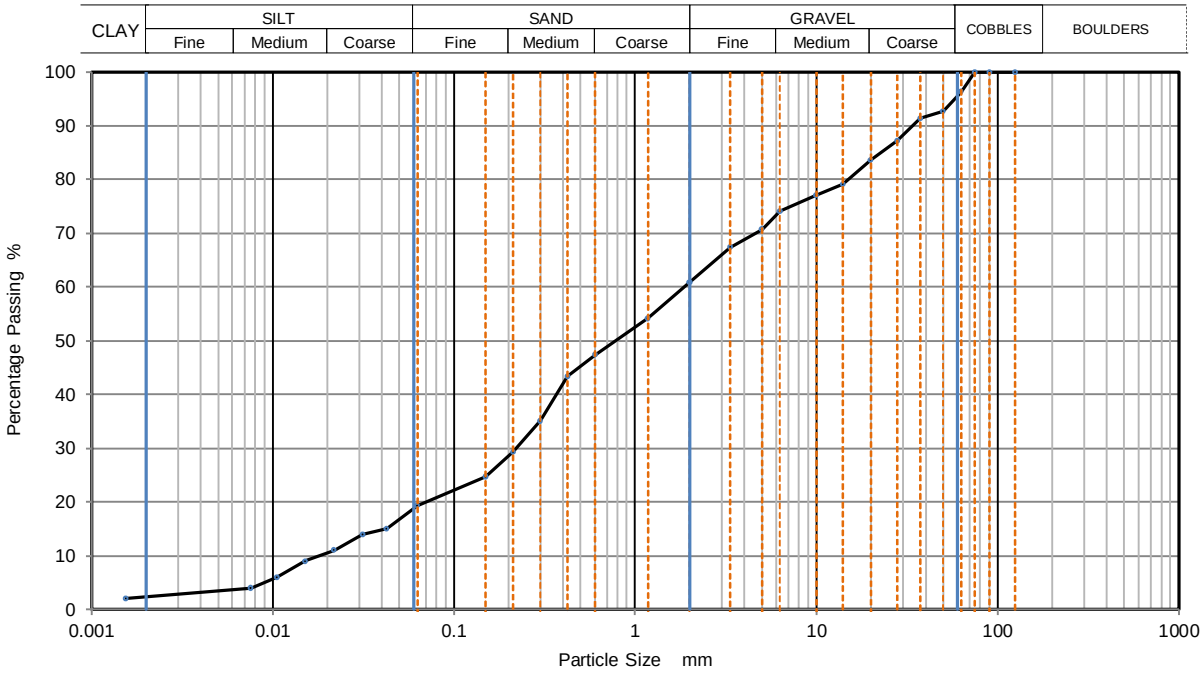
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 11 |
| Sand | 58 |
| Silt | 27 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.243 |
| D30 | mm | 0.061 |
| D10 | mm | 0.0137 |
| Uniformity Coefficient | | 18 |
| Curvature Coefficient | | 1.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020718 |
| Soil Description | Brown gravelly clayey SAND | | | Depth, m | 1.20 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020718 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 15 |
| 90 | 100 | 0.0314 | 14 |
| 75 | 100 | 0.0218 | 11 |
| 63 | 96 | 0.0152 | 9 |
| 50 | 93 | 0.0105 | 6 |
| 37.5 | 91 | 0.0076 | 4 |
| 28 | 87 | 0.0016 | 2 |
| 20 | 84 | | |
| 14 | 79 | | |
| 10 | 77 | | |
| 6.3 | 74 | | |
| 5 | 71 | | |
| 3.35 | 67 | | |
| 2 | 61 | | |
| 1.18 | 54 | | |
| 0.6 | 47 | Particle density (assumed) | |
| 0.425 | 43 | 2.67 | Mg/m3 |
| 0.3 | 35 | | |
| 0.212 | 29 | | |
| 0.15 | 25 | | |
| 0.063 | 19 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 12026 |

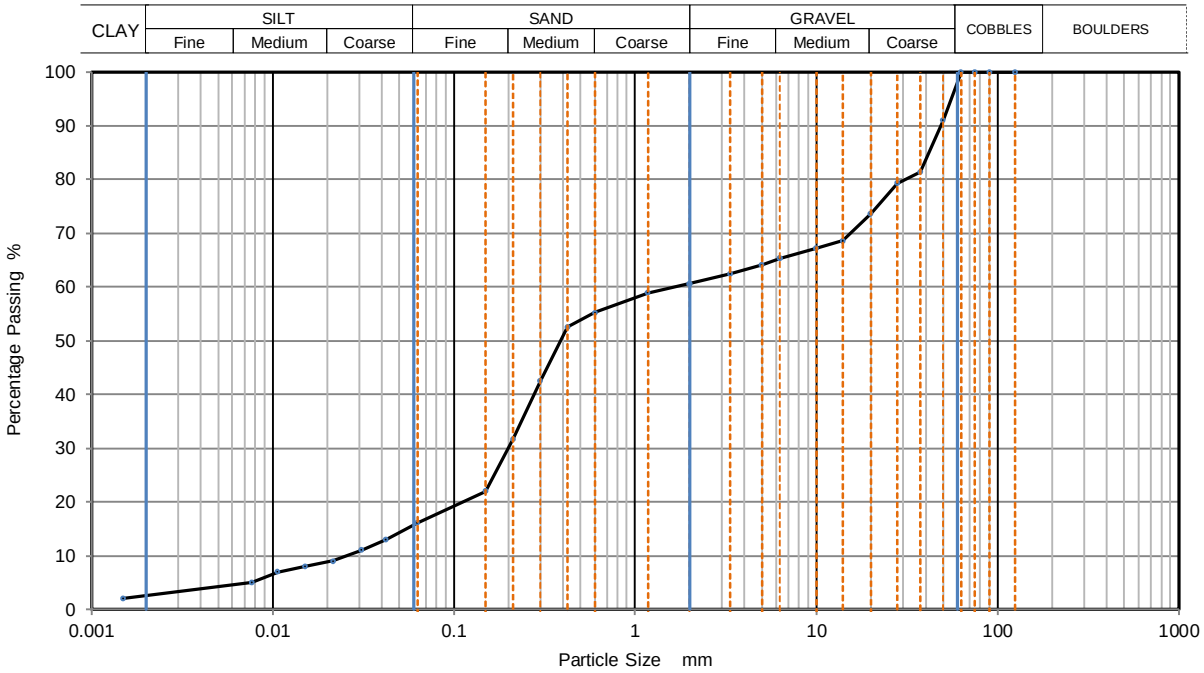
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 4 |
| Gravel | 36 |
| Sand | 42 |
| Silt | 17 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.87 |
| D30 | mm | 0.221 |
| D10 | mm | 0.0185 |
| Uniformity Coefficient | | 100 |
| Curvature Coefficient | | 1.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020723 |
| Soil Description | Brown gravelly clayey SAND | | | Depth, m | 3.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020723 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0423 | 13 |
| 90 | 100 | 0.0309 | 11 |
| 75 | 100 | 0.0216 | 9 |
| 63 | 100 | 0.0151 | 8 |
| 50 | 91 | 0.0107 | 7 |
| 37.5 | 81 | 0.0077 | 5 |
| 28 | 79 | 0.0015 | 2 |
| 20 | 74 | | |
| 14 | 69 | | |
| 10 | 67 | | |
| 6.3 | 65 | | |
| 5 | 64 | | |
| 3.35 | 62 | | |
| 2 | 61 | | |
| 1.18 | 59 | | |
| 0.6 | 55 | Particle density (assumed) | |
| 0.425 | 53 | 2.67 | Mg/m3 |
| 0.3 | 43 | | |
| 0.212 | 32 | | |
| 0.15 | 22 | | |
| 0.063 | 16 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 6392 |

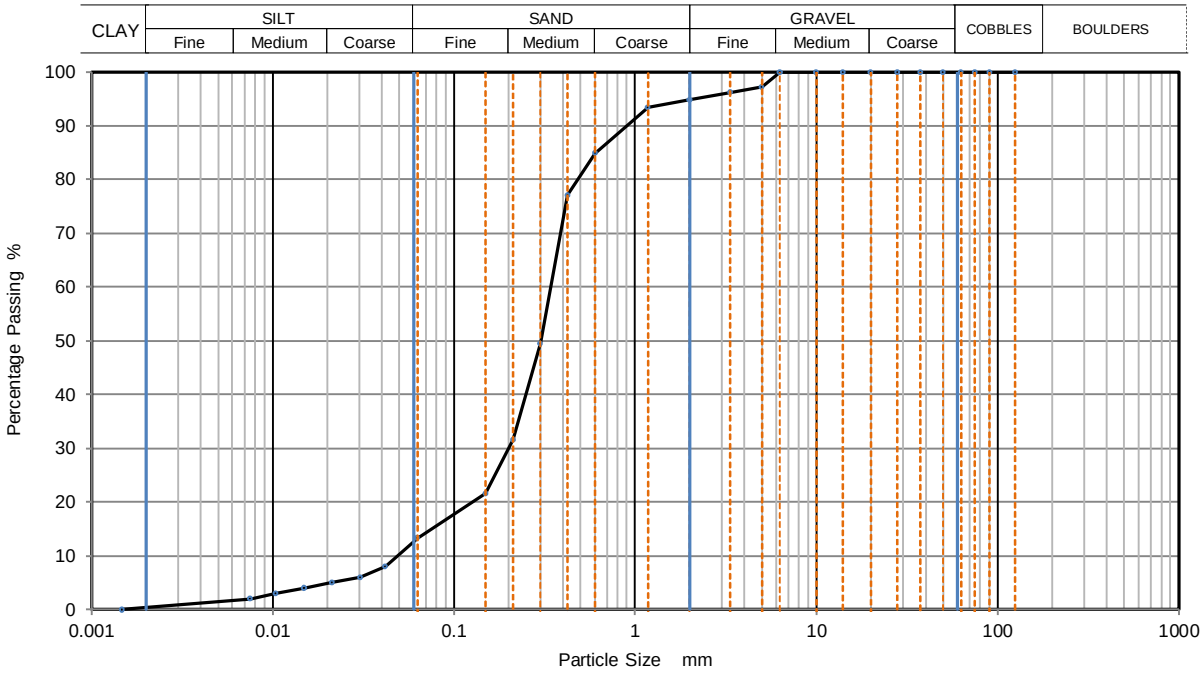
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 39 |
| Sand | 45 |
| Silt | 14 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.65 |
| D30 | mm | 0.2 |
| D10 | mm | 0.0274 |
| Uniformity Coefficient | | 60 |
| Curvature Coefficient | | 0.88 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020725 |
| Soil Description | Brown SAND | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | D |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020725 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0418 | 8 |
| 90 | 100 | 0.0306 | 6 |
| 75 | 100 | 0.0212 | 5 |
| 63 | 100 | 0.0149 | 4 |
| 50 | 100 | 0.0104 | 3 |
| 37.5 | 100 | 0.0075 | 2 |
| 28 | 100 | 0.0015 | 0 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 97 | | |
| 3.35 | 96 | | |
| 2 | 95 | | |
| 1.18 | 93 | | |
| 0.6 | 85 | Particle density (assumed) | |
| 0.425 | 77 | 2.67 | Mg/m3 |
| 0.3 | 50 | | |
| 0.212 | 32 | | |
| 0.15 | 22 | | |
| 0.063 | 13 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 386 |

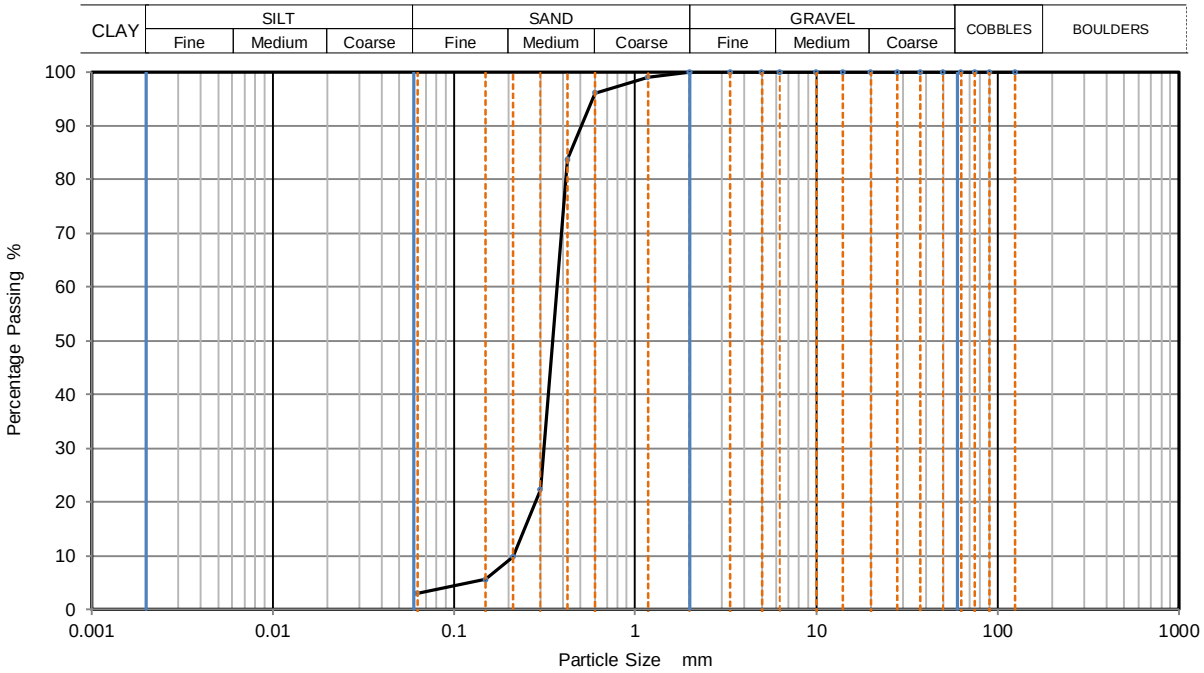
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 5 |
| Sand | 82 |
| Silt | 13 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.343 |
| D30 | mm | 0.201 |
| D10 | mm | 0.049 |
| Uniformity Coefficient | | 7 |
| Curvature Coefficient | | 2.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020729 |
| Soil Description | Brown SAND | | | Depth, m | 5.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1020729 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 99 | | |
| 0.6 | 96 | | |
| 0.425 | 84 | | |
| 0.3 | 22 | | |
| 0.212 | 10 | | |
| 0.15 | 6 | | |
| 0.063 | 3 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 2931 |

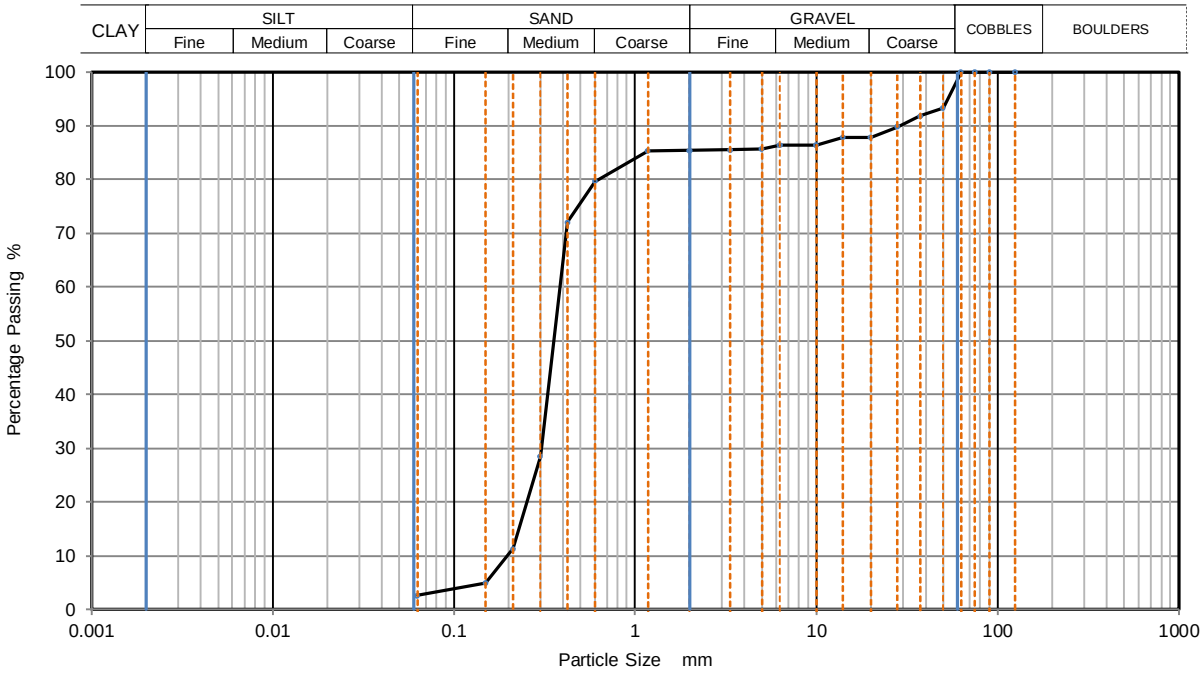
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 0 |
| Sand | 97 |
| | |
| Fines <0.063mm | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.372 |
| D30 | mm | 0.313 |
| D10 | mm | 0.213 |
| Uniformity Coefficient | | 1.7 |
| Curvature Coefficient | | 1.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020732 |
| Soil Description | Brown gravelly SAND | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1020732 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 93 | | |
| 37.5 | 92 | | |
| 28 | 90 | | |
| 20 | 88 | | |
| 14 | 88 | | |
| 10 | 86 | | |
| 6.3 | 86 | | |
| 5 | 86 | | |
| 3.35 | 86 | | |
| 2 | 85 | | |
| 1.18 | 85 | | |
| 0.6 | 80 | | |
| 0.425 | 72 | | |
| 0.3 | 29 | | |
| 0.212 | 11 | | |
| 0.15 | 5 | | |
| 0.063 | 3 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5488 |

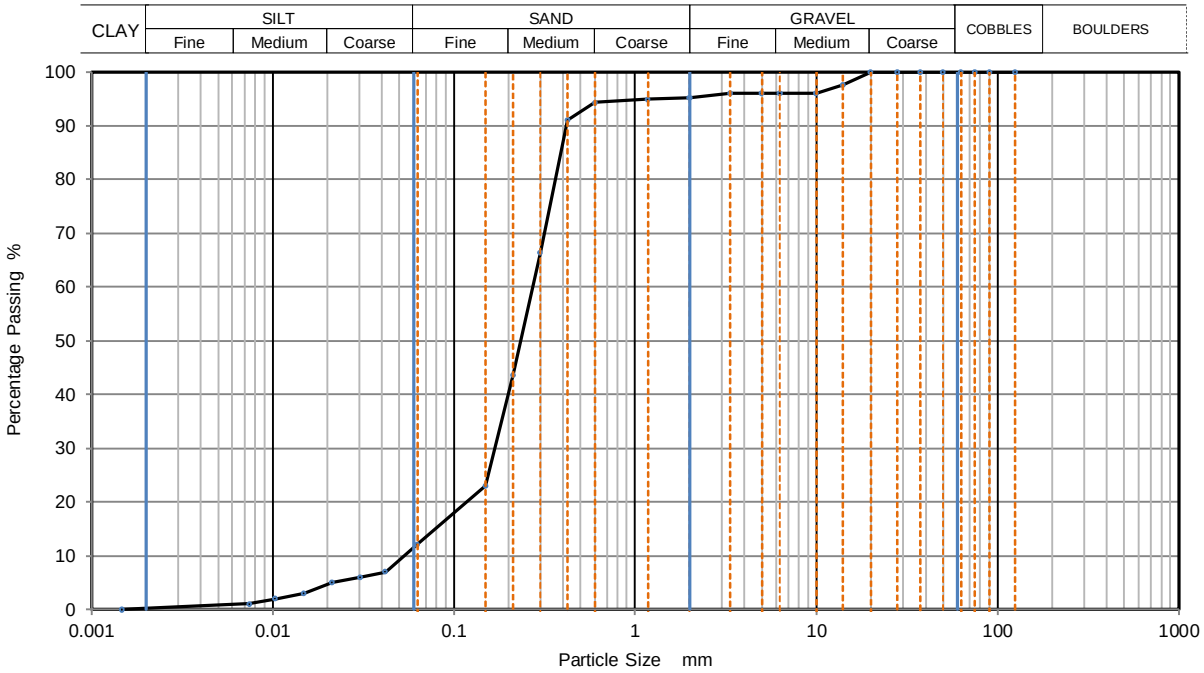
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 15 |
| Sand | 83 |
| | |
| Fines <0.063mm | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.386 |
| D30 | mm | 0.304 |
| D10 | mm | 0.198 |
| Uniformity Coefficient | | 2 |
| Curvature Coefficient | | 1.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020735 |
| Soil Description | Brown gravelly silty SAND | | | Depth, m | 7.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020735 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0418 | 7 |
| 90 | 100 | 0.0306 | 6 |
| 75 | 100 | 0.0213 | 5 |
| 63 | 100 | 0.0149 | 3 |
| 50 | 100 | 0.0104 | 2 |
| 37.5 | 100 | 0.0075 | 1 |
| 28 | 100 | 0.0015 | 0 |
| 20 | 100 | | |
| 14 | 98 | | |
| 10 | 96 | | |
| 6.3 | 96 | | |
| 5 | 96 | | |
| 3.35 | 96 | | |
| 2 | 95 | | |
| 1.18 | 95 | | |
| 0.6 | 94 | Particle density (assumed) | |
| 0.425 | 91 | 2.67 | Mg/m3 |
| 0.3 | 66 | | |
| 0.212 | 44 | | |
| 0.15 | 23 | | |
| 0.063 | 12 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4944 |

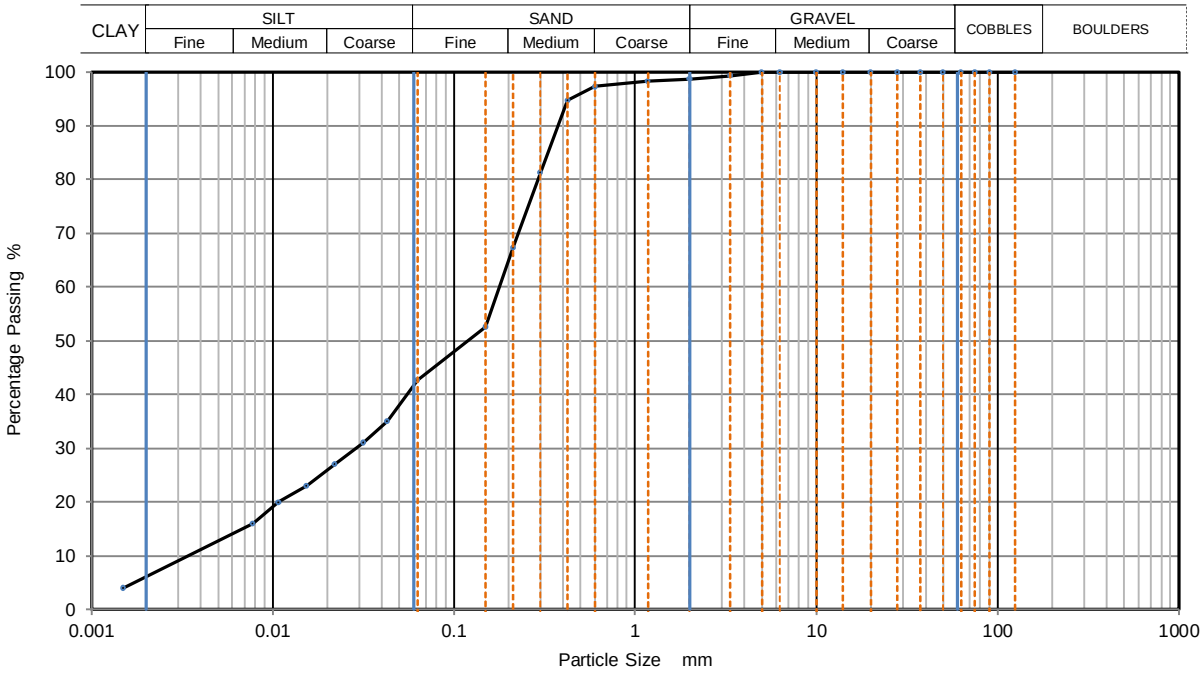
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 5 |
| Sand | 83 |
| Silt | 12 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.272 |
| D30 | mm | 0.169 |
| D10 | mm | 0.0527 |
| Uniformity Coefficient | | 5.2 |
| Curvature Coefficient | | 2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020738 |
| Soil Description | Brown silty gravelly SAND | | | Depth, m | 9.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020738 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0430 | 35 |
| 90 | 100 | 0.0316 | 31 |
| 75 | 100 | 0.0221 | 27 |
| 63 | 100 | 0.0154 | 23 |
| 50 | 100 | 0.0108 | 20 |
| 37.5 | 100 | 0.0078 | 16 |
| 28 | 100 | 0.0015 | 4 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 99 | | |
| 2 | 99 | | |
| 1.18 | 98 | | |
| 0.6 | 97 | Particle density (assumed) | |
| 0.425 | 95 | 2.67 | Mg/m3 |
| 0.3 | 81 | | |
| 0.212 | 67 | | |
| 0.15 | 53 | | |
| 0.063 | 43 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3251 |

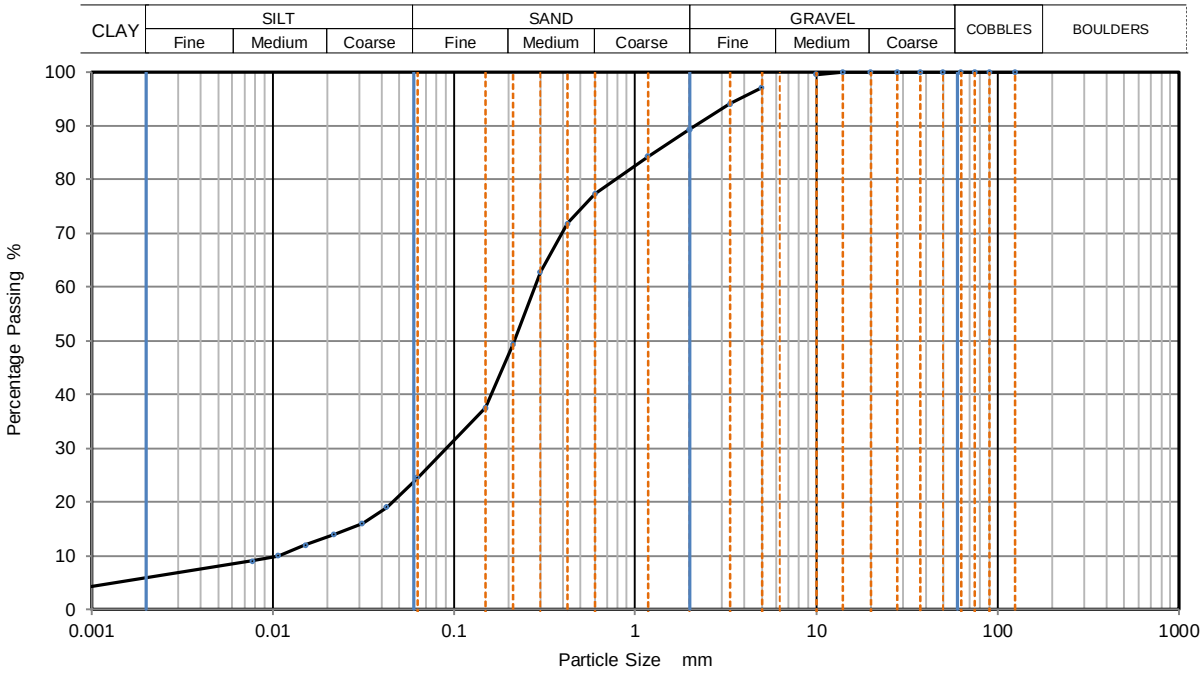
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 1 |
| Sand | 56 |
| Silt | 37 |
| Clay | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.178 |
| D30 | mm | 0.0289 |
| D10 | mm | 0.00336 |
| Uniformity Coefficient | | 53 |
| Curvature Coefficient | | 1.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031262 |
| Soil Description | Brown gravelly clayey SAND | | | Depth, m | 1.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031262 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 19 |
| 90 | 100 | 0.0313 | 16 |
| 75 | 100 | 0.0218 | 14 |
| 63 | 100 | 0.0152 | 12 |
| 50 | 100 | 0.0107 | 10 |
| 37.5 | 100 | 0.0077 | 9 |
| 28 | 100 | 0.0009 | 4 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| | | | |
| 5 | 97 | | |
| 3.35 | 94 | | |
| 2 | 89 | | |
| 1.18 | 84 | | |
| 0.6 | 77 | Particle density (assumed) | |
| 0.425 | 72 | 2.67 | Mg/m3 |
| 0.3 | 63 | | |
| 0.212 | 49 | | |
| 0.15 | 38 | | |
| 0.063 | 25 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 16155 |

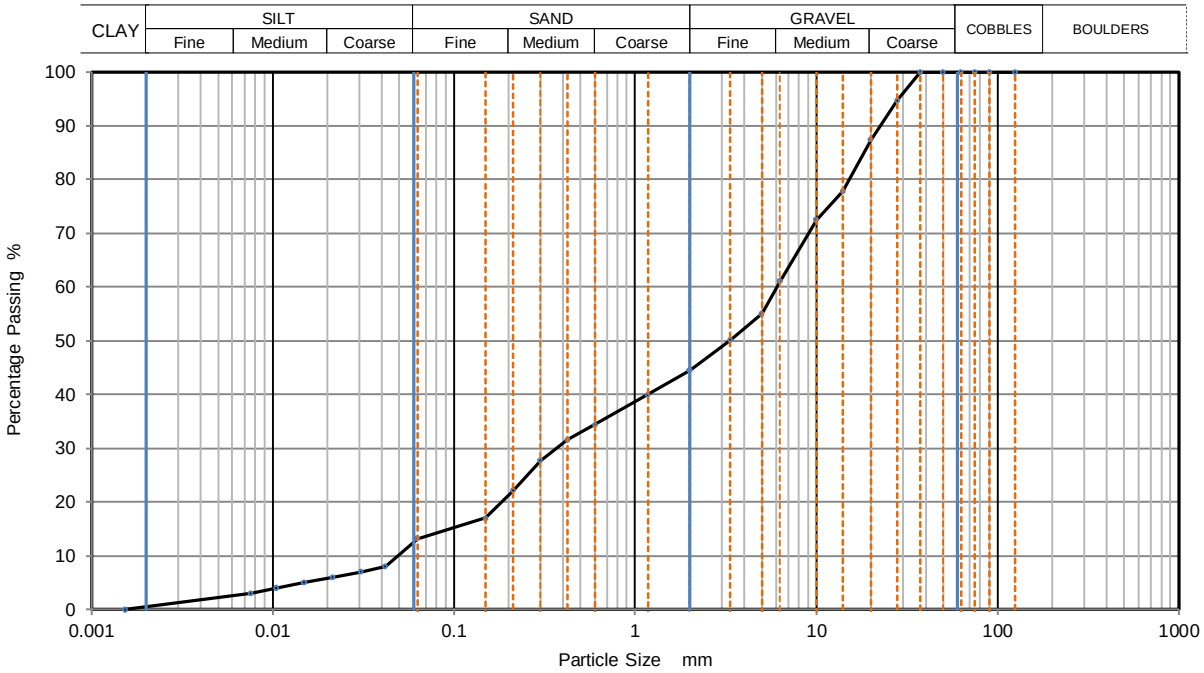
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 11 |
| Sand | 65 |
| Silt | 19 |
| Clay | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.279 |
| D30 | mm | 0.0908 |
| D10 | mm | 0.0105 |
| Uniformity Coefficient | | 27 |
| Curvature Coefficient | | 2.8 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031263 |
| Soil Description | | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031263 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0419 | 8 |
| 90 | 100 | 0.0307 | 7 |
| 75 | 100 | 0.0215 | 6 |
| 63 | 100 | 0.0150 | 5 |
| 50 | 100 | 0.0105 | 4 |
| 37.5 | 100 | 0.0076 | 3 |
| 28 | 95 | 0.0015 | 0 |
| 20 | 87 | | |
| 14 | 78 | | |
| 10 | 73 | | |
| 6.3 | 61 | | |
| 5 | 55 | | |
| 3.35 | 50 | | |
| 2 | 45 | | |
| 1.18 | 40 | | |
| 0.6 | 34 | Particle density (assumed) | |
| 0.425 | 32 | 2.67 | Mg/m3 |
| 0.3 | 28 | | |
| 0.212 | 22 | | |
| 0.15 | 17 | | |
| 0.063 | 13 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 9990 |

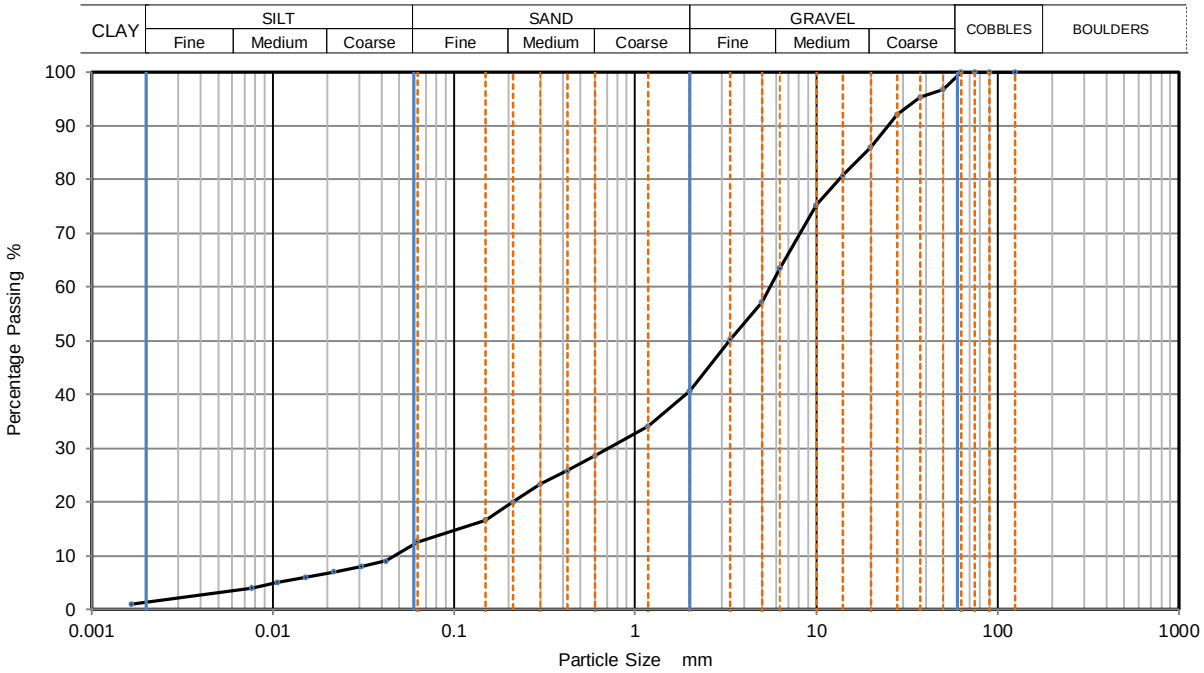
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 56 |
| Sand | 31 |
| Silt | 12 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 6.04 |
| D30 | mm | 0.368 |
| D10 | mm | 0.0479 |
| Uniformity Coefficient | | 130 |
| Curvature Coefficient | | 0.47 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TP305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031274 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 1.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031274 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0422 | 9 |
| 90 | 100 | 0.0310 | 8 |
| 75 | 100 | 0.0217 | 7 |
| 63 | 100 | 0.0152 | 6 |
| 50 | 97 | 0.0106 | 5 |
| 37.5 | 95 | 0.0077 | 4 |
| 28 | 92 | 0.0017 | 1 |
| 20 | 86 | | |
| 14 | 81 | | |
| 10 | 75 | | |
| 6.3 | 64 | | |
| 5 | 57 | | |
| 3.35 | 50 | | |
| 2 | 41 | | |
| 1.18 | 34 | | |
| 0.6 | 29 | Particle density (assumed) | |
| 0.425 | 26 | 2.67 | Mg/m3 |
| 0.3 | 23 | | |
| 0.212 | 20 | | |
| 0.15 | 17 | | |
| 0.063 | 13 | | |

| Dry Mass of sample, g. | 12667 |
|---|---|

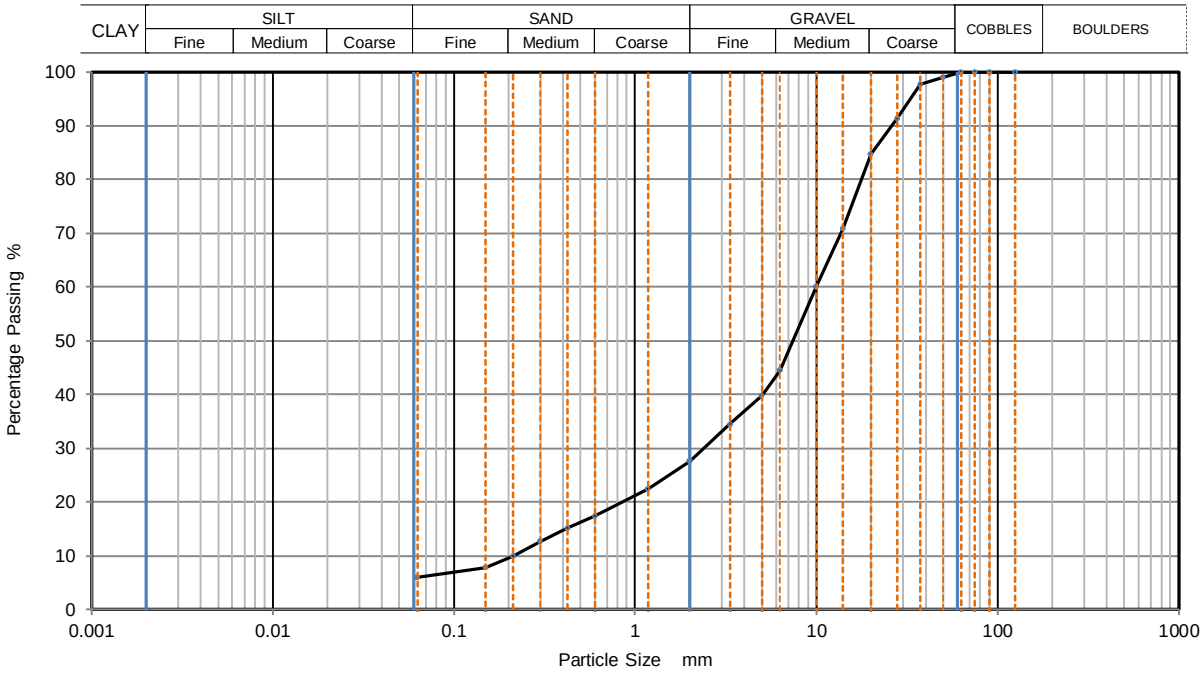
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 59 |
| Sand | 28 |
| Silt | 11 |
| Clay | 2 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 5.54 |
| D30 | mm | 0.711 |
| D10 | mm | 0.0478 |
| Uniformity Coefficient | | 120 |
| Curvature Coefficient | | 1.9 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031276 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031276 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 99 | | |
| 37.5 | 98 | | |
| 28 | 91 | | |
| 20 | 85 | | |
| 14 | 71 | | |
| 10 | 60 | | |
| 6.3 | 45 | | |
| 5 | 40 | | |
| 3.35 | 35 | | |
| 2 | 28 | | |
| 1.18 | 22 | | |
| 0.6 | 17 | | |
| 0.425 | 15 | | |
| 0.3 | 13 | | |
| 0.212 | 10 | | |
| 0.15 | 8 | | |
| 0.063 | 6 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 9099 |

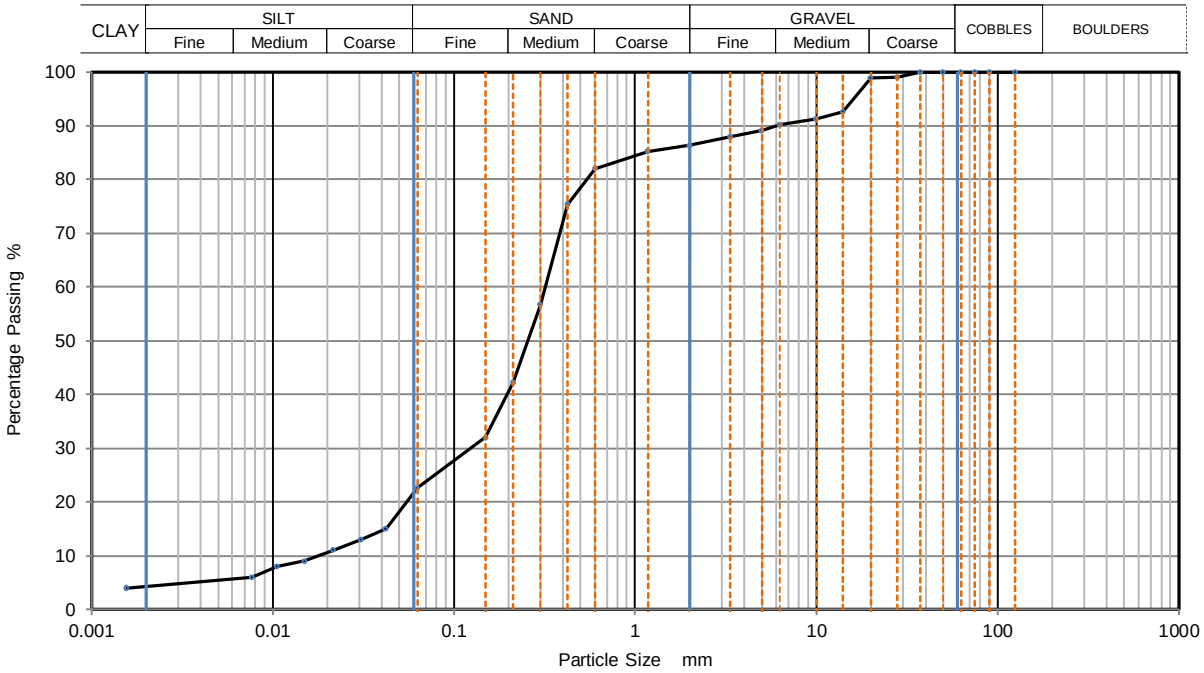
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 72 |
| Sand | 22 |
| | |
| Fines <0.063mm | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 9.97 |
| D30 | mm | 2.39 |
| D10 | mm | 0.215 |
| Uniformity Coefficient | | 46 |
| Curvature Coefficient | | 2.7 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP306 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031281 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 2.40 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031281 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 15 |
| 90 | 100 | 0.0309 | 13 |
| 75 | 100 | 0.0216 | 11 |
| 63 | 100 | 0.0151 | 9 |
| 50 | 100 | 0.0106 | 8 |
| 37.5 | 100 | 0.0077 | 6 |
| 28 | 99 | 0.0016 | 4 |
| 20 | 99 | | |
| 14 | 93 | | |
| 10 | 91 | | |
| 6.3 | 90 | | |
| 5 | 89 | | |
| 3.35 | 88 | | |
| 2 | 86 | | |
| 1.18 | 85 | | |
| 0.6 | 82 | Particle density (assumed) | |
| 0.425 | 75 | 2.67 | Mg/m3 |
| 0.3 | 57 | | |
| 0.212 | 42 | | |
| 0.15 | 32 | | |
| 0.063 | 23 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 12619 |

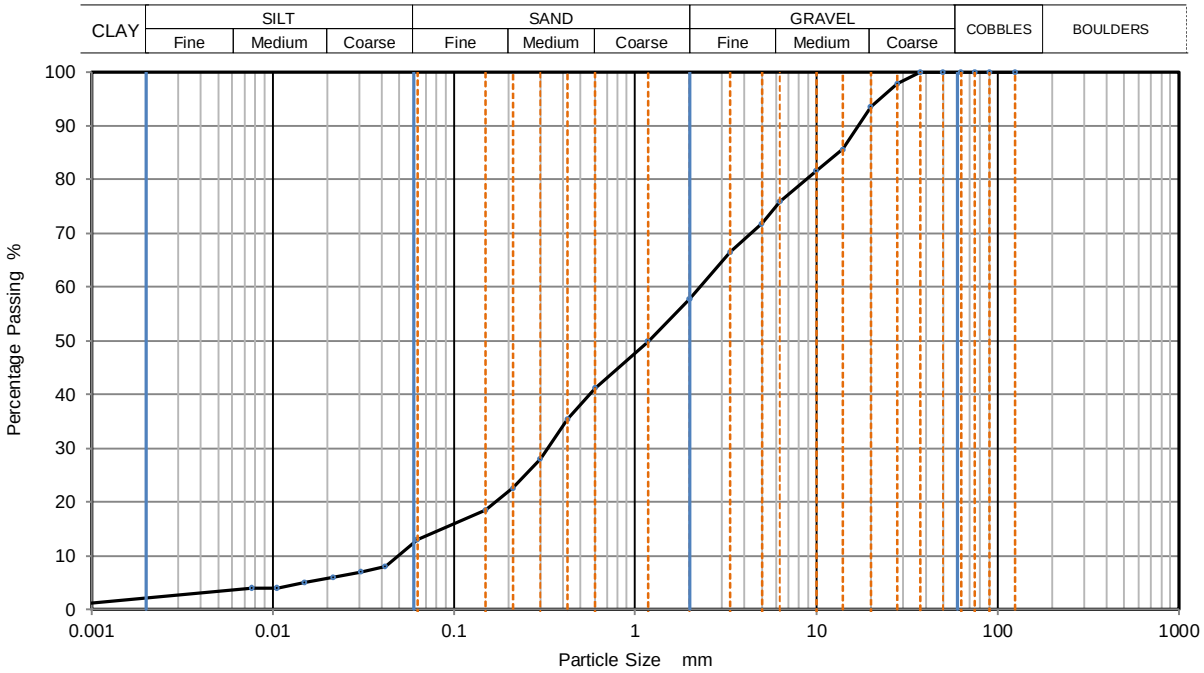
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 14 |
| Sand | 64 |
| Silt | 19 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.319 |
| D30 | mm | 0.125 |
| D10 | mm | 0.0186 |
| Uniformity Coefficient | | 17 |
| Curvature Coefficient | | 2.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP307 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031283 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 1.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031283 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0419 | 8 |
| 90 | 100 | 0.0307 | 7 |
| 75 | 100 | 0.0216 | 6 |
| 63 | 100 | 0.0151 | 5 |
| 50 | 100 | 0.0106 | 4 |
| 37.5 | 100 | 0.0077 | 4 |
| 28 | 98 | 0.0009 | 1 |
| 20 | 94 | | |
| 14 | 86 | | |
| 10 | 82 | | |
| 6.3 | 76 | | |
| 5 | 72 | | |
| 3.35 | 67 | | |
| 2 | 58 | | |
| 1.18 | 50 | | |
| 0.6 | 41 | Particle density (assumed) | |
| 0.425 | 35 | 2.67 | Mg/m3 |
| 0.3 | 28 | | |
| 0.212 | 23 | | |
| 0.15 | 19 | | |
| 0.063 | 13 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 11590 |

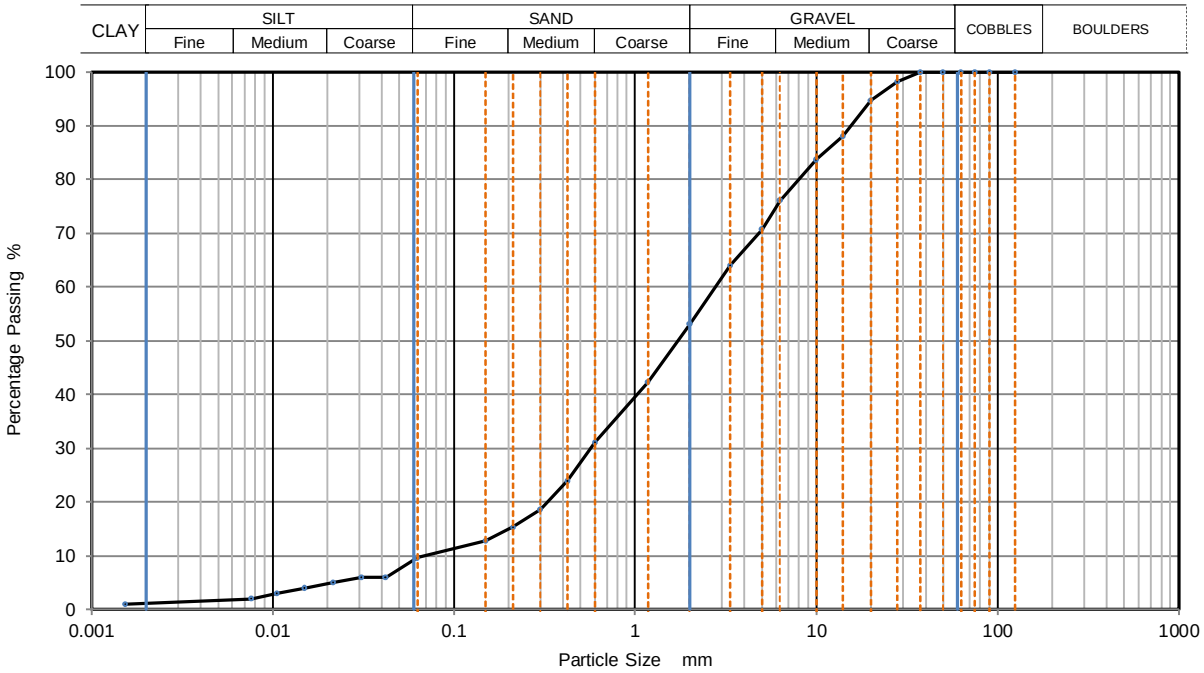
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 42 |
| Sand | 45 |
| Silt | 11 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.28 |
| D30 | mm | 0.329 |
| D10 | mm | 0.0489 |
| Uniformity Coefficient | | 47 |
| Curvature Coefficient | | 0.97 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP307 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031285 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 2.80 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031285 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 6 |
| 90 | 100 | 0.0310 | 6 |
| 75 | 100 | 0.0217 | 5 |
| 63 | 100 | 0.0151 | 4 |
| 50 | 100 | 0.0106 | 3 |
| 37.5 | 100 | 0.0076 | 2 |
| 28 | 98 | 0.0015 | 1 |
| 20 | 95 | | |
| 14 | 88 | | |
| 10 | 84 | | |
| 6.3 | 76 | | |
| 5 | 71 | | |
| 3.35 | 64 | | |
| 2 | 53 | | |
| 1.18 | 42 | | |
| 0.6 | 31 | Particle density (assumed) | |
| 0.425 | 24 | 2.67 | Mg/m3 |
| 0.3 | 19 | | |
| 0.212 | 15 | | |
| 0.15 | 13 | | |
| 0.063 | 10 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 7993 |

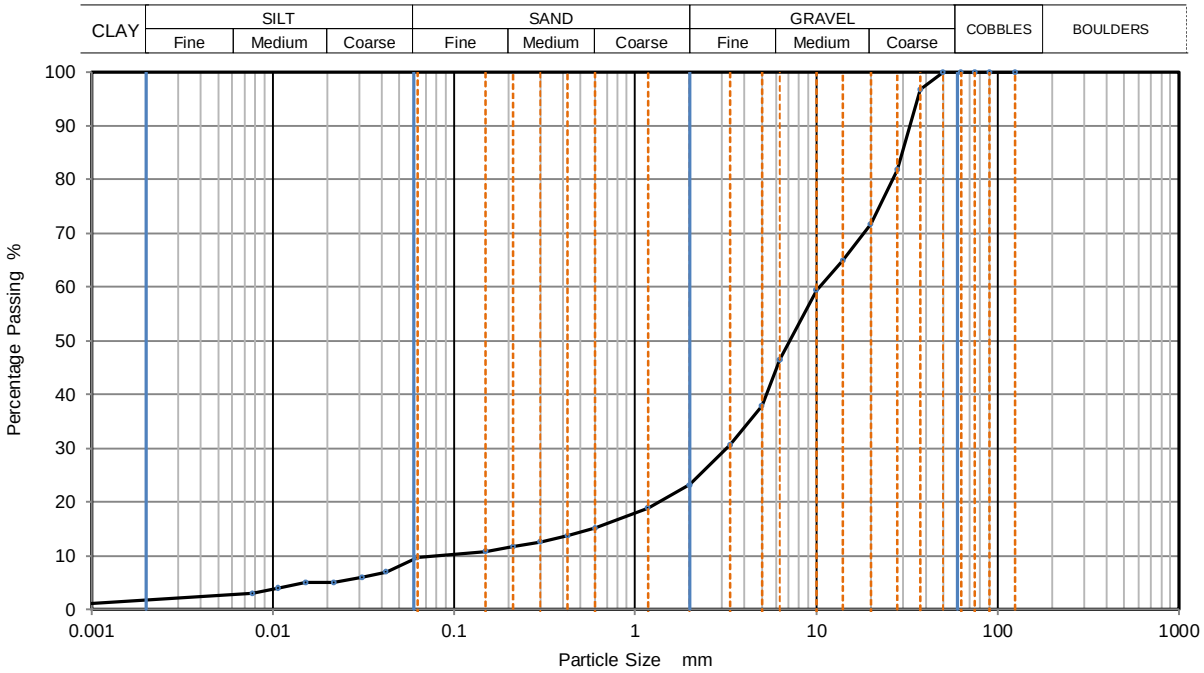
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 47 |
| Sand | 44 |
| Silt | 9 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.77 |
| D30 | mm | 0.569 |
| D10 | mm | 0.0708 |
| Uniformity Coefficient | | 39 |
| Curvature Coefficient | | 1.7 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TP308 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031266 |
| Soil Description | Grey sandy clayey GRAVEL M/G | | | Depth, m | 0.60 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031266 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0424 | 7 |
| 90 | 100 | 0.0311 | 6 |
| 75 | 100 | 0.0217 | 5 |
| 63 | 100 | 0.0152 | 5 |
| 50 | 100 | 0.0107 | 4 |
| 37.5 | 97 | 0.0077 | 3 |
| 28 | 82 | 0.0009 | 1 |
| 20 | 72 | | |
| 14 | 65 | | |
| 10 | 59 | | |
| 6.3 | 47 | | |
| 5 | 38 | | |
| 3.35 | 31 | | |
| 2 | 23 | | |
| 1.18 | 19 | | |
| 0.6 | 15 | Particle density (assumed) | |
| 0.425 | 14 | 2.67 | Mg/m3 |
| 0.3 | 13 | | |
| 0.212 | 12 | | |
| 0.15 | 11 | | |
| 0.063 | 10 | | |

| Dry Mass of sample, g. | 17008 |
|---|---|

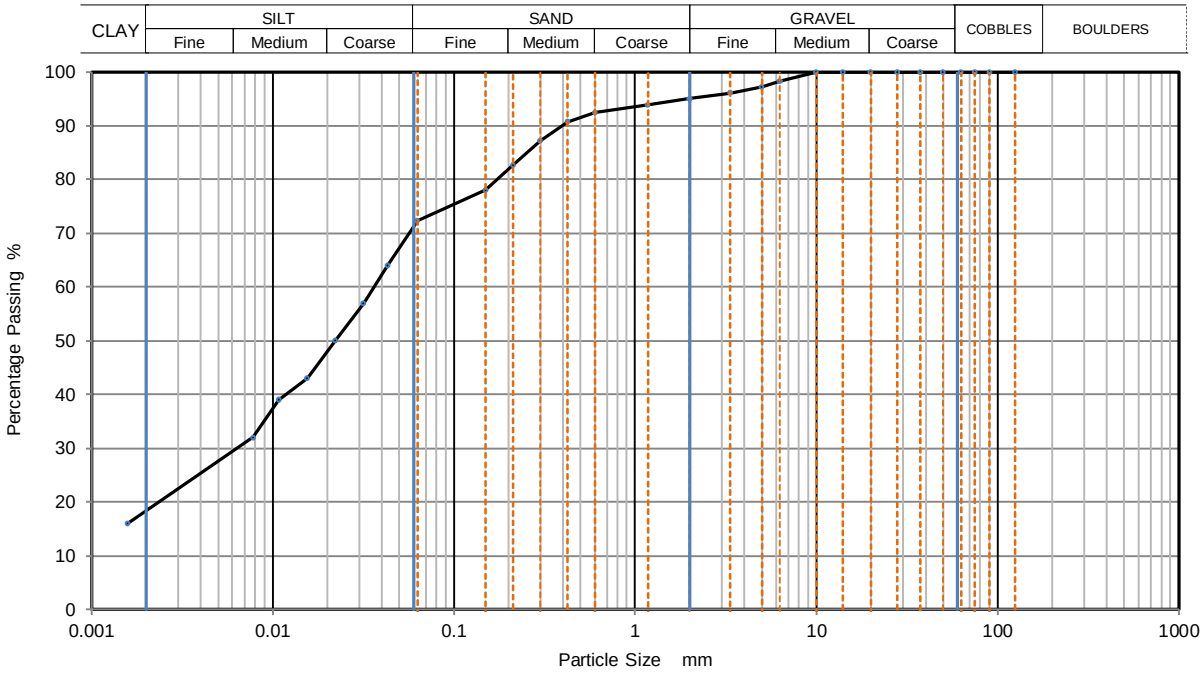
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 77 |
| Sand | 14 |
| Silt | 8 |
| Clay | 2 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 10.3 |
| D30 | mm | 3.21 |
| D10 | mm | 0.0811 |
| Uniformity Coefficient | | 130 |
| Curvature Coefficient | | 12 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP308 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031267 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 2.00 |
| Specimen Reference | 3 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031267 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0432 | 64 |
| 90 | 100 | 0.0318 | 57 |
| 75 | 100 | 0.0222 | 50 |
| 63 | 100 | 0.0155 | 43 |
| 50 | 100 | 0.0109 | 39 |
| 37.5 | 100 | 0.0078 | 32 |
| 28 | 100 | 0.0016 | 16 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 98 | | |
| 5 | 97 | | |
| 3.35 | 96 | | |
| 2 | 95 | | |
| 1.18 | 94 | | |
| 0.6 | 92 | Particle density (assumed) | |
| 0.425 | 91 | 2.67 | Mg/m3 |
| 0.3 | 87 | | |
| 0.212 | 83 | | |
| 0.15 | 78 | | |
| 0.063 | 72 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5130 |

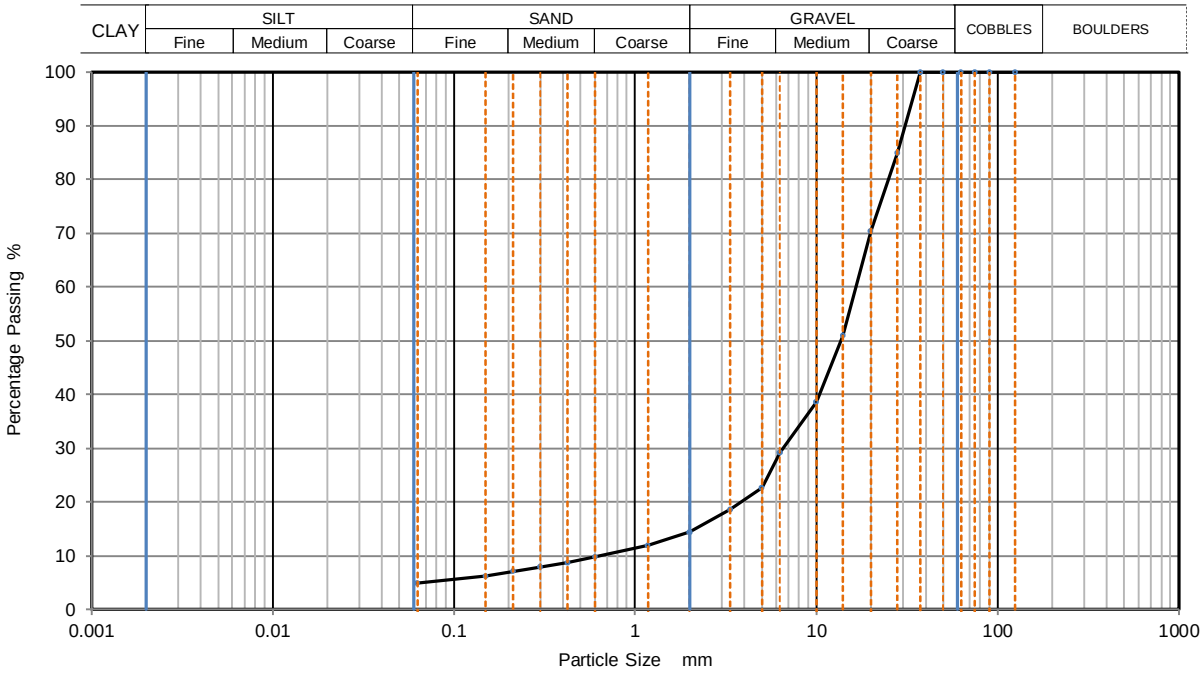
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 5 |
| Sand | 23 |
| Silt | 54 |
| Clay | 18 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0366 |
| D30 | mm | 0.00651 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP309 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031286 |
| Soil Description | Grey sandy clayey GRAVEL M/G | | | Depth, m | 0.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031286 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 85 | | |
| 20 | 70 | | |
| 14 | 51 | | |
| 10 | 39 | | |
| 6.3 | 29 | | |
| 5 | 23 | | |
| 3.35 | 19 | | |
| 2 | 14 | | |
| 1.18 | 12 | | |
| 0.6 | 10 | | |
| 0.425 | 9 | | |
| 0.3 | 8 | | |
| 0.212 | 7 | | |
| 0.15 | 6 | | |
| 0.063 | 5 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 13812 |

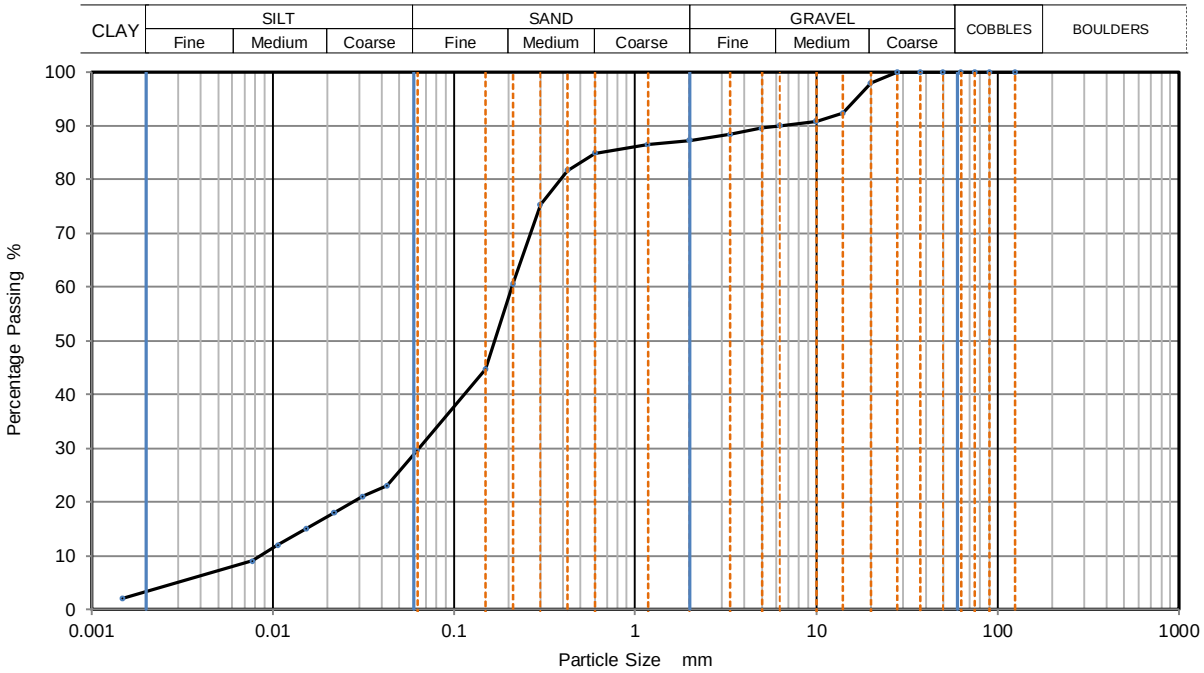
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 86 |
| Sand | 10 |
| | |
| Fines <0.063mm | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 16.5 |
| D30 | mm | 6.55 |
| D10 | mm | 0.638 |
| Uniformity Coefficient | | 26 |
| Curvature Coefficient | | 4.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP309 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031288 |
| Soil Description | Brown silty gravelly SAND | | | Depth, m | 2.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031288 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 23 |
| 90 | 100 | 0.0315 | 21 |
| 75 | 100 | 0.0220 | 18 |
| 63 | 100 | 0.0153 | 15 |
| 50 | 100 | 0.0107 | 12 |
| 37.5 | 100 | 0.0077 | 9 |
| 28 | 100 | 0.0015 | 2 |
| 20 | 98 | | |
| 14 | 92 | | |
| 10 | 91 | | |
| 6.3 | 90 | | |
| 5 | 90 | | |
| 3.35 | 88 | | |
| 2 | 87 | | |
| 1.18 | 87 | | |
| 0.6 | 85 | Particle density (assumed) | |
| 0.425 | 82 | 2.67 | Mg/m3 |
| 0.3 | 75 | | |
| 0.212 | 61 | | |
| 0.15 | 45 | | |
| 0.063 | 30 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5684 |

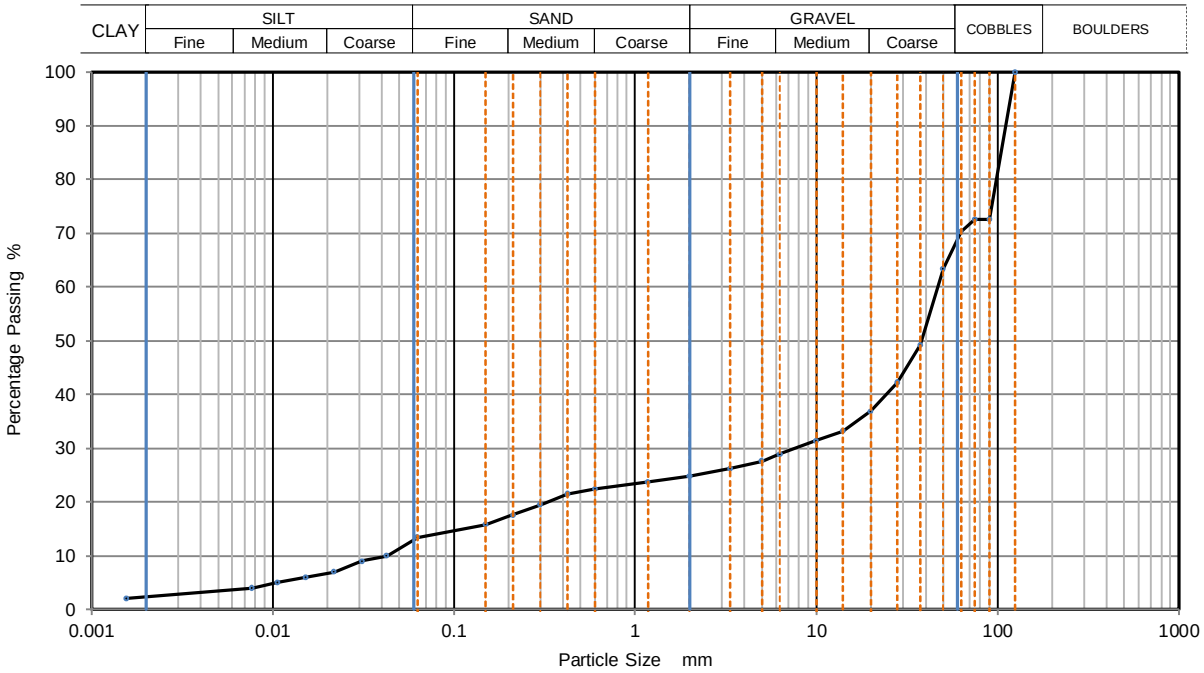
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 13 |
| Sand | 58 |
| Silt | 26 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.209 |
| D30 | mm | 0.0644 |
| D10 | mm | 0.00829 |
| Uniformity Coefficient | | 25 |
| Curvature Coefficient | | 2.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP310 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031270 |
| Soil Description | Brown sandy very gravelly CLAY with cobbles M/G | | | Depth, m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031270 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 10 |
| 90 | 73 | 0.0313 | 9 |
| 75 | 73 | 0.0218 | 7 |
| 63 | 70 | 0.0152 | 6 |
| 50 | 63 | 0.0106 | 5 |
| 37.5 | 49 | 0.0077 | 4 |
| 28 | 42 | 0.0016 | 2 |
| 20 | 37 | | |
| 14 | 33 | | |
| 10 | 31 | | |
| 6.3 | 29 | | |
| 5 | 28 | | |
| 3.35 | 26 | | |
| 2 | 25 | | |
| 1.18 | 24 | | |
| 0.6 | 22 | Particle density (assumed) | |
| 0.425 | 22 | 2.67 | Mg/m3 |
| 0.3 | 20 | | |
| 0.212 | 18 | | |
| 0.15 | 16 | | |
| 0.063 | 13 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 13932 |

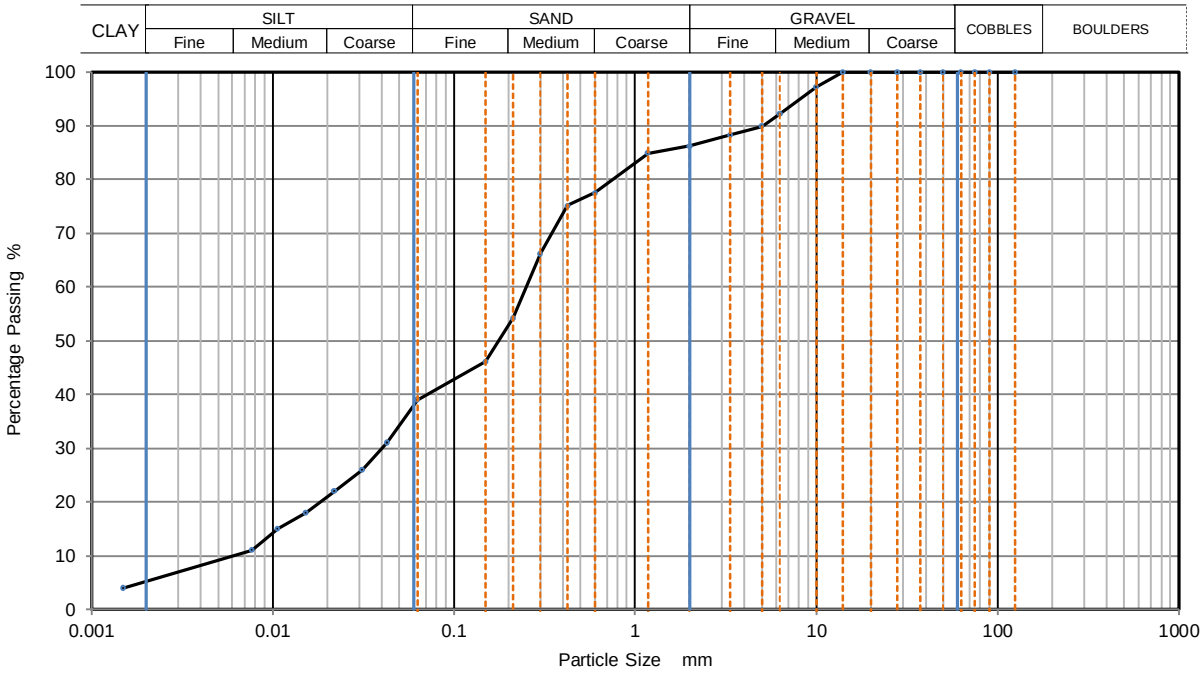
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 30 |
| Gravel | 45 |
| Sand | 11 |
| Silt | 12 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | 125 |
| D60 | mm | 46.7 |
| D30 | mm | 7.69 |
| D10 | mm | 0.04 |
| Uniformity Coefficient | | 1200 |
| Curvature Coefficient | | 32 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP310 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031273 |
| Soil Description | Grey + brown sandy gravelly slightly organic CLAY | | | Depth, m | 2.60 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031273 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 31 |
| 90 | 100 | 0.0313 | 26 |
| 75 | 100 | 0.0219 | 22 |
| 63 | 100 | 0.0153 | 18 |
| 50 | 100 | 0.0107 | 15 |
| 37.5 | 100 | 0.0077 | 11 |
| 28 | 100 | 0.0015 | 4 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 97 | | |
| 6.3 | 92 | | |
| 5 | 90 | | |
| 3.35 | 88 | | |
| 2 | 86 | | |
| 1.18 | 85 | | |
| 0.6 | 78 | Particle density (assumed) | |
| 0.425 | 75 | 2.67 | Mg/m3 |
| 0.3 | 66 | | |
| 0.212 | 54 | | |
| 0.15 | 46 | | |
| 0.063 | 39 | | |

| Dry Mass of sample, g. | 4498 |
|---|---|

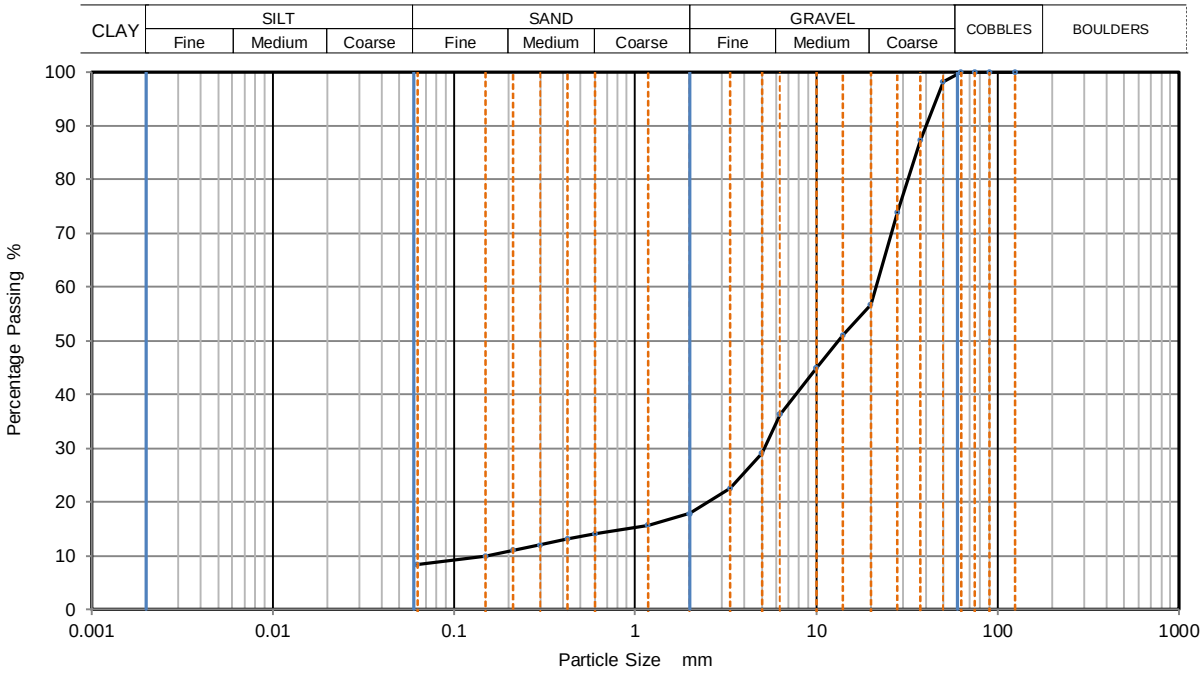
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 14 |
| Sand | 47 |
| Silt | 34 |
| Clay | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.251 |
| D30 | mm | 0.0409 |
| D10 | mm | 0.00608 |
| Uniformity Coefficient | | 41 |
| Curvature Coefficient | | 1.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TT301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031256 |
| Soil Description | Brown sandy clayey GRAVEL M/G | | | Depth, m | 1.20 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031256 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 98 | | |
| 37.5 | 87 | | |
| 28 | 74 | | |
| 20 | 57 | | |
| 14 | 51 | | |
| 10 | 45 | | |
| 6.3 | 36 | | |
| 5 | 29 | | |
| 3.35 | 23 | | |
| 2 | 18 | | |
| 1.18 | 16 | | |
| 0.6 | 14 | | |
| 0.425 | 13 | | |
| 0.3 | 12 | | |
| 0.212 | 11 | | |
| 0.15 | 10 | | |
| 0.063 | 8 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 16677 |

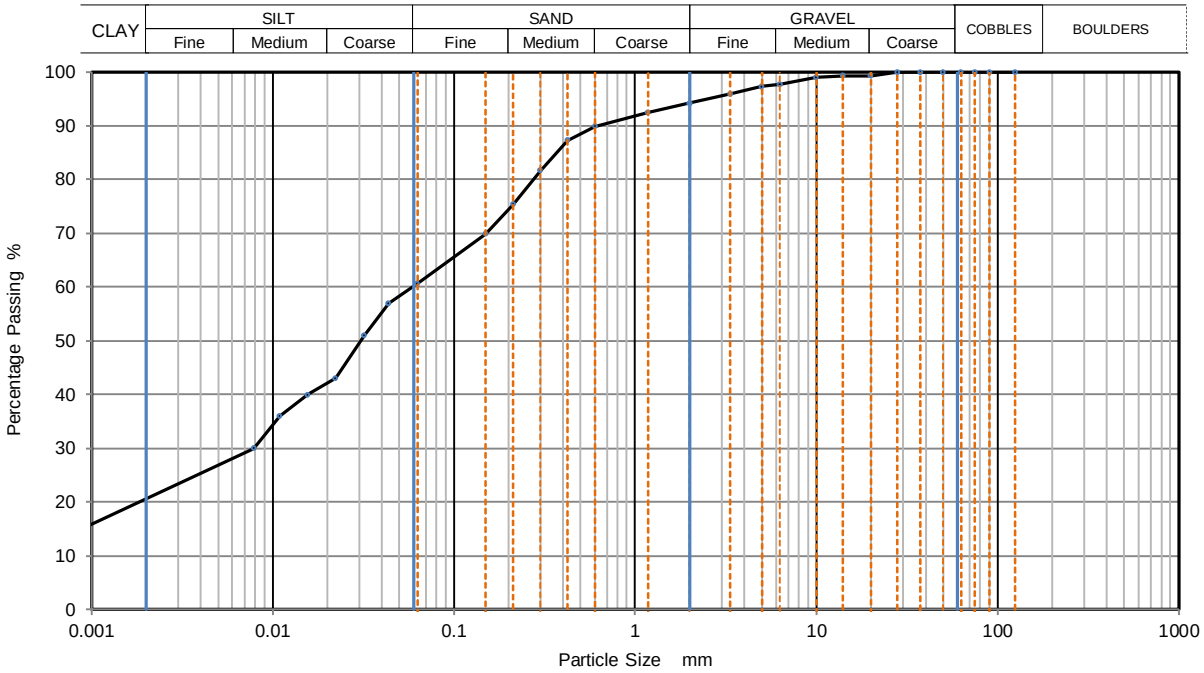
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 82 |
| Sand | 9 |
| | |
| Fines <0.063mm | 8 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 21.3 |
| D30 | mm | 5.15 |
| D10 | mm | 0.153 |
| Uniformity Coefficient | | 140 |
| Curvature Coefficient | | 8.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TT301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031257 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 2.20 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031257 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0436 | 57 |
| 90 | 100 | 0.0320 | 51 |
| 75 | 100 | 0.0223 | 43 |
| 63 | 100 | 0.0156 | 40 |
| 50 | 100 | 0.0110 | 36 |
| 37.5 | 100 | 0.0079 | 30 |
| 28 | 100 | 0.0009 | 15 |
| 20 | 99 | | |
| 14 | 99 | | |
| 10 | 99 | | |
| 6.3 | 98 | | |
| 5 | 97 | | |
| 3.35 | 96 | | |
| 2 | 94 | | |
| 1.18 | 93 | | |
| 0.6 | 90 | Particle density (assumed) | |
| 0.425 | 87 | 2.67 | Mg/m3 |
| 0.3 | 82 | | |
| 0.212 | 75 | | |
| 0.15 | 70 | | |
| 0.063 | 61 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 16725 |

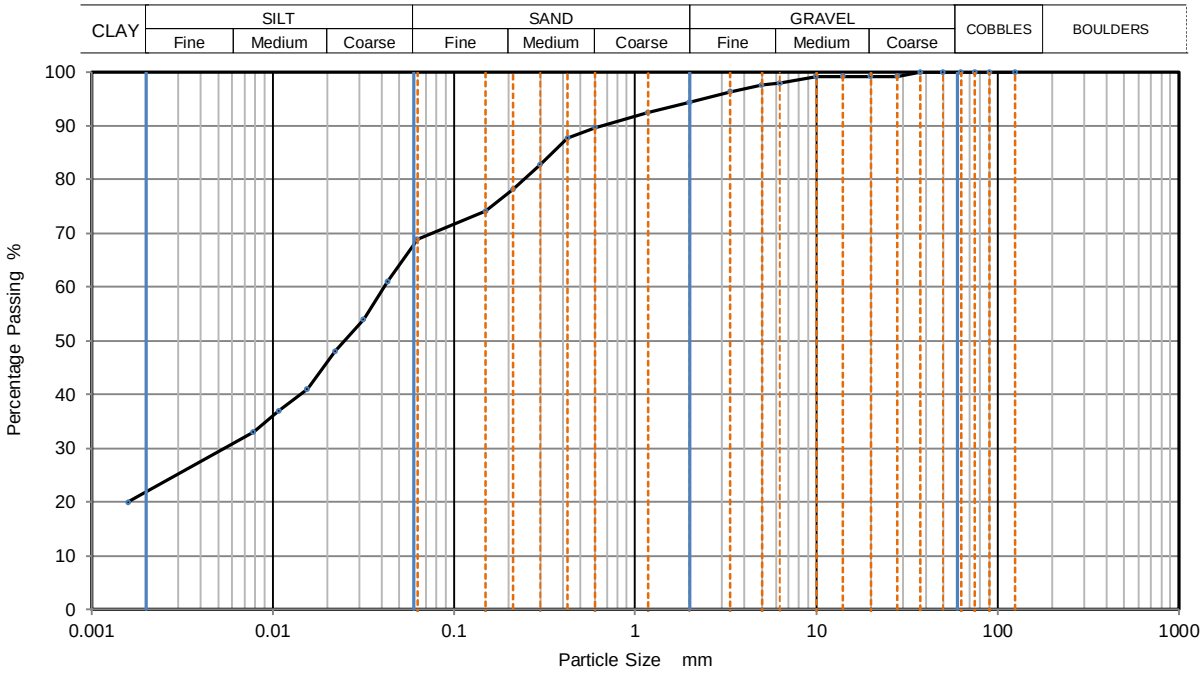
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 6 |
| Sand | 34 |
| Silt | 40 |
| Clay | 21 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0596 |
| D30 | mm | 0.00767 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TT303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031254 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth, m | 0.50 |
| Specimen Reference | 3 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031254 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0432 | 61 |
| 90 | 100 | 0.0318 | 54 |
| 75 | 100 | 0.0222 | 48 |
| 63 | 100 | 0.0155 | 41 |
| 50 | 100 | 0.0109 | 37 |
| 37.5 | 100 | 0.0079 | 33 |
| 28 | 99 | 0.0016 | 20 |
| 20 | 99 | | |
| 14 | 99 | | |
| 10 | 99 | | |
| 6.3 | 98 | | |
| 5 | 98 | | |
| 3.35 | 96 | | |
| 2 | 94 | | |
| 1.18 | 92 | | |
| 0.6 | 90 | Particle density (assumed) | |
| 0.425 | 88 | 2.67 | Mg/m3 |
| 0.3 | 83 | | |
| 0.212 | 78 | | |
| 0.15 | 74 | | |
| 0.063 | 69 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4544 |

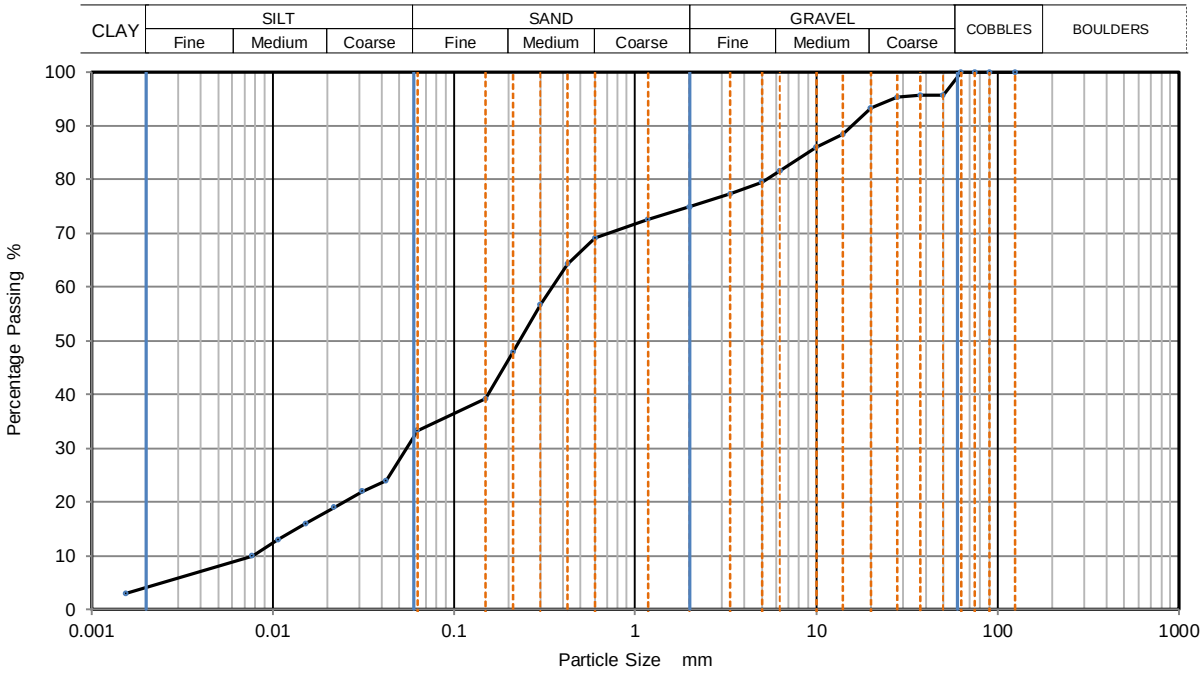
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 6 |
| Sand | 26 |
| Silt | 48 |
| Clay | 21 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0414 |
| D30 | mm | 0.00571 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TT303A |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031253 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth, m | 1.00 |
| Specimen Reference | 3 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031253 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 24 |
| 90 | 100 | 0.0313 | 22 |
| 75 | 100 | 0.0218 | 19 |
| 63 | 100 | 0.0152 | 16 |
| 50 | 96 | 0.0107 | 13 |
| 37.5 | 96 | 0.0077 | 10 |
| 28 | 95 | 0.0016 | 3 |
| 20 | 93 | | |
| 14 | 88 | | |
| 10 | 86 | | |
| 6.3 | 82 | | |
| 5 | 80 | | |
| 3.35 | 77 | | |
| 2 | 75 | | |
| 1.18 | 73 | | |
| 0.6 | 69 | Particle density (assumed) | |
| 0.425 | 64 | 2.67 | Mg/m3 |
| 0.3 | 57 | | |
| 0.212 | 48 | | |
| 0.15 | 39 | | |
| 0.063 | 33 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5287 |

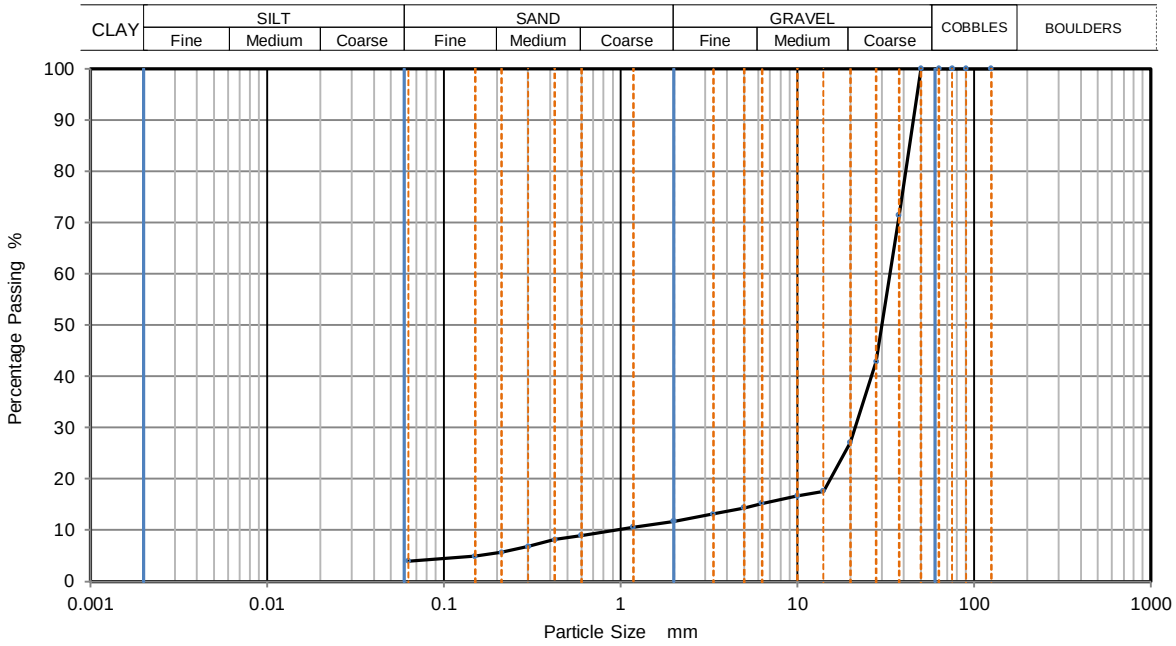
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 25 |
| Sand | 42 |
| Silt | 29 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.349 |
| D30 | mm | 0.0545 |
| D10 | mm | 0.00715 |
| Uniformity Coefficient | | 49 |
| Curvature Coefficient | | 1.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BAL01 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1034026 |
| Soil Description | Brown clayey sandy GRAVEL | | | Depth, m | 0.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1034026 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 71 | | |
| 28 | 43 | | |
| 20 | 27 | | |
| 14 | 18 | | |
| 10 | 17 | | |
| 6.3 | 15 | | |
| 5 | 14 | | |
| 3.35 | 13 | | |
| 2 | 12 | | |
| 1.18 | 11 | | |
| 0.6 | 9 | | |
| 0.425 | 8 | | |
| 0.3 | 7 | | |
| 0.212 | 6 | | |
| 0.15 | 5 | | |
| 0.063 | 4 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 16623 |

| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 88 |
| Sand | 8 |
| | |
| Fines <0.063mm | 4 |

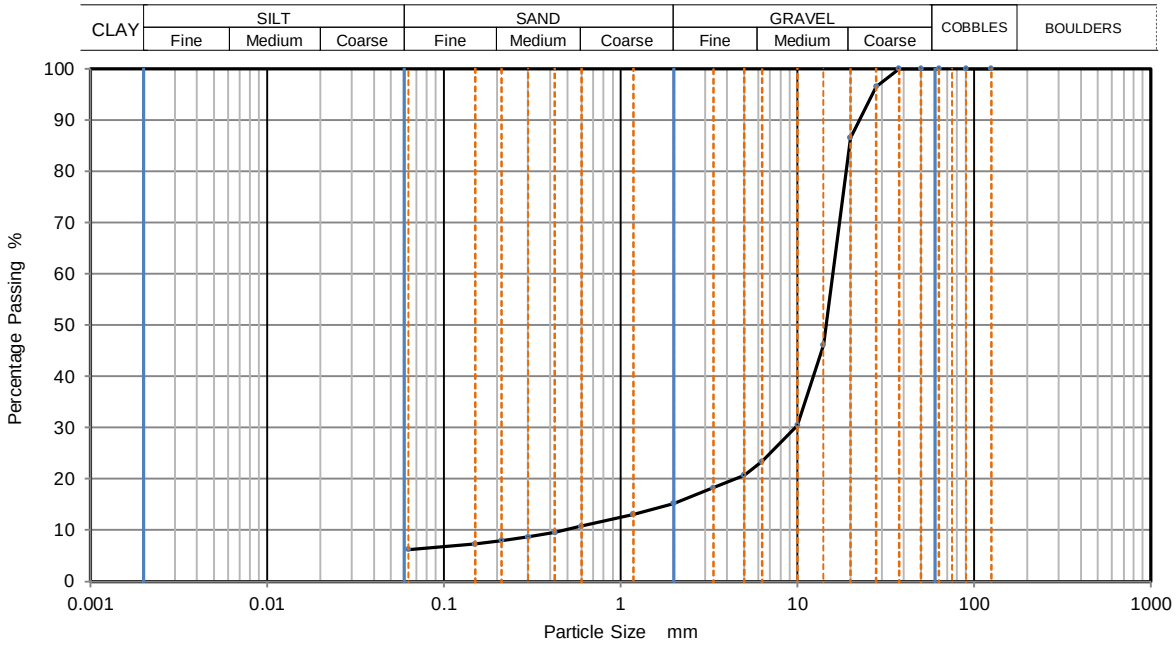
| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 33.4 |
| D30 | mm | 21.3 |
| D10 | mm | 0.915 |
| Uniformity Coefficient | | 36 |
| Curvature Coefficient | | 15 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

9.25

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BAL02 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1034027 |
| Soil Description | Brown clayey sandy GRAVEL | | | Depth, m | 0.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1034027 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| | | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 97 | | |
| 20 | 87 | | |
| 14 | 46 | | |
| 10 | 31 | | |
| 6.3 | 23 | | |
| 5 | 21 | | |
| 3.35 | 18 | | |
| 2 | 15 | | |
| 1.18 | 13 | | |
| 0.6 | 11 | | |
| 0.425 | 10 | | |
| 0.3 | 9 | | |
| 0.212 | 8 | | |
| 0.15 | 7 | | |
| 0.063 | 6 | | |

| Dry Mass of sample, g. | 12832 |
|---|---|

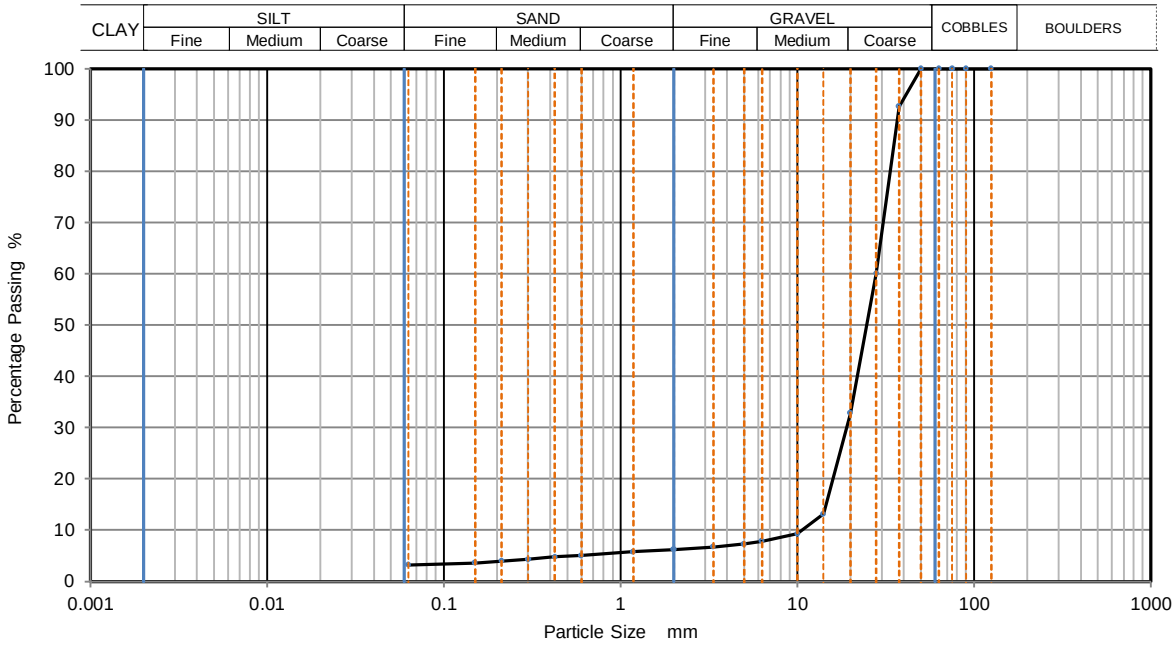
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 85 |
| Sand | 9 |
| | |
| Fines <0.063mm | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 15.8 |
| D30 | mm | 9.65 |
| D10 | mm | 0.477 |
| Uniformity Coefficient | | 33 |
| Curvature Coefficient | | 12 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BAL03 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1034028 |
| Soil Description | Brown clayey sandy GRAVEL | | | Depth, m | 0.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1034028 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 93 | | |
| 28 | 60 | | |
| 20 | 33 | | |
| 14 | 13 | | |
| 10 | 9 | | |
| 6.3 | 8 | | |
| 5 | 7 | | |
| 3.35 | 7 | | |
| 2 | 6 | | |
| 1.18 | 6 | | |
| 0.6 | 5 | | |
| 0.425 | 5 | | |
| 0.3 | 4 | | |
| 0.212 | 4 | | |
| 0.15 | 4 | | |
| 0.063 | 3 | | |

| Dry Mass of sample, g. | 14418 |
|---|---|

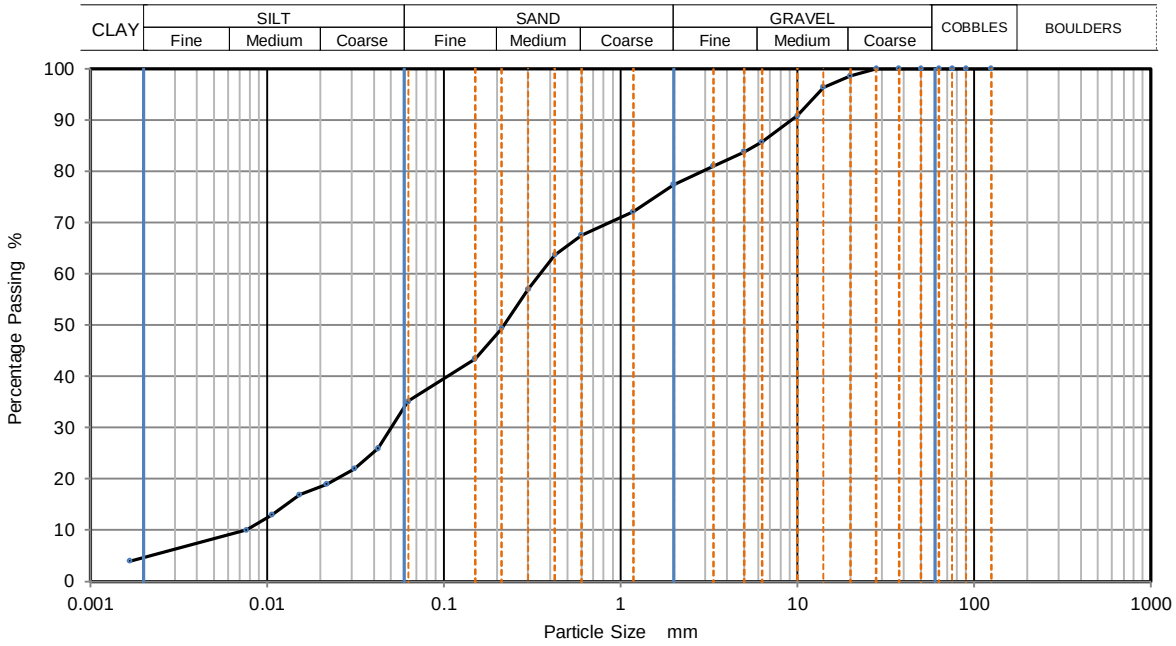
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 94 |
| Sand | 3 |
| | |
| Fines <0.063mm | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 28 |
| D30 | mm | 19 |
| D10 | mm | 10.5 |
| Uniformity Coefficient | | 2.7 |
| Curvature Coefficient | | 1.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030278 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth, m | 0.50 |
| Specimen Reference | 6 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030278 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0424 | 26 |
| 90 | 100 | 0.0311 | 22 |
| 75 | 100 | 0.0217 | 19 |
| 63 | 100 | 0.0152 | 17 |
| 50 | 100 | 0.0106 | 13 |
| 37.5 | 100 | 0.0077 | 10 |
| 28 | 100 | 0.0017 | 4 |
| 20 | 99 | | |
| 14 | 96 | | |
| 10 | 91 | | |
| 6.3 | 86 | | |
| 5 | 84 | | |
| 3.35 | 81 | | |
| 2 | 77 | | |
| 1.18 | 72 | | |
| 0.6 | 68 | Particle density (assumed) | |
| 0.425 | 64 | 2.67 | Mg/m3 |
| 0.3 | 57 | | |
| 0.212 | 49 | | |
| 0.15 | 43 | | |
| 0.063 | 35 | | |

| Dry Mass of sample, g. | 11750 |
|---|---|

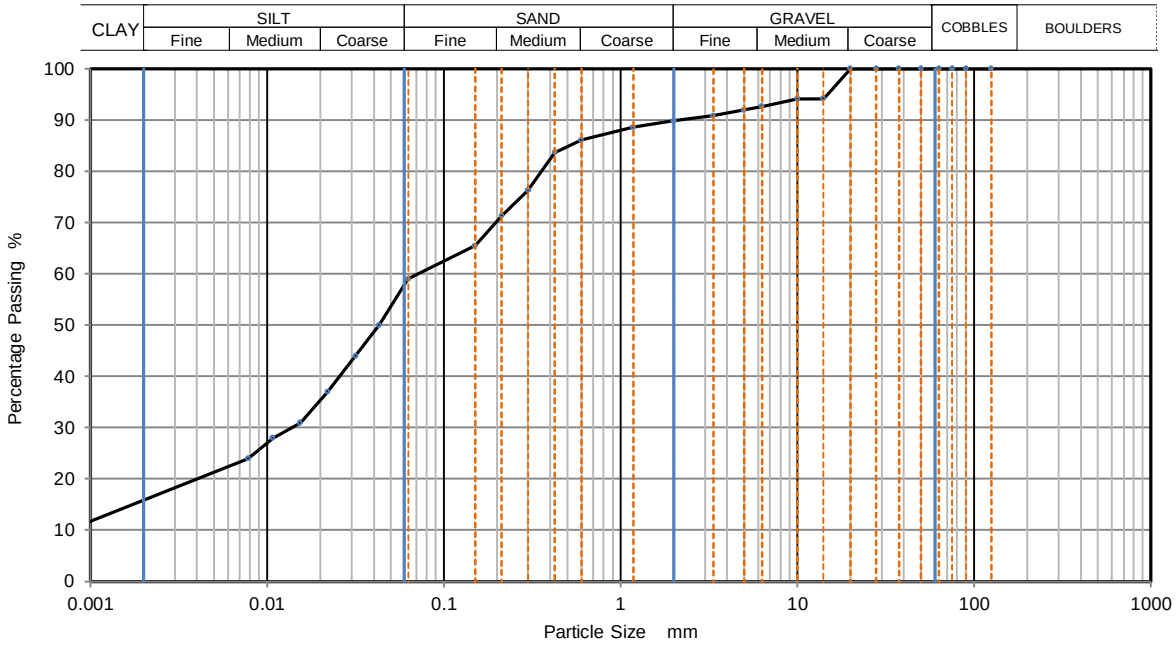
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 23 |
| Sand | 42 |
| Silt | 30 |
| Clay | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.351 |
| D30 | mm | 0.0509 |
| D10 | mm | 0.00758 |
| Uniformity Coefficient | | 46 |
| Curvature Coefficient | | 0.97 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033054 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 3.00 |
| Specimen Reference | 6 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033054 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0431 | 50 |
| 90 | 100 | 0.0316 | 44 |
| 75 | 100 | 0.0220 | 37 |
| 63 | 100 | 0.0154 | 31 |
| 50 | 100 | 0.0108 | 28 |
| 37.5 | 100 | 0.0078 | 24 |
| 28 | 100 | 0.0009 | 11 |
| 20 | 100 | | |
| 14 | 94 | | |
| 10 | 94 | | |
| 6.3 | 93 | | |
| 5 | 92 | | |
| 3.35 | 91 | | |
| 2 | 90 | | |
| 1.18 | 89 | | |
| 0.6 | 86 | Particle density (assumed) | |
| 0.425 | 84 | 2.67 Mg/m3 | |
| 0.3 | 76 | | |
| 0.212 | 71 | | |
| 0.15 | 66 | | |
| 0.063 | 59 | | |

| Dry Mass of sample, g. | 5133 |
|---|---|

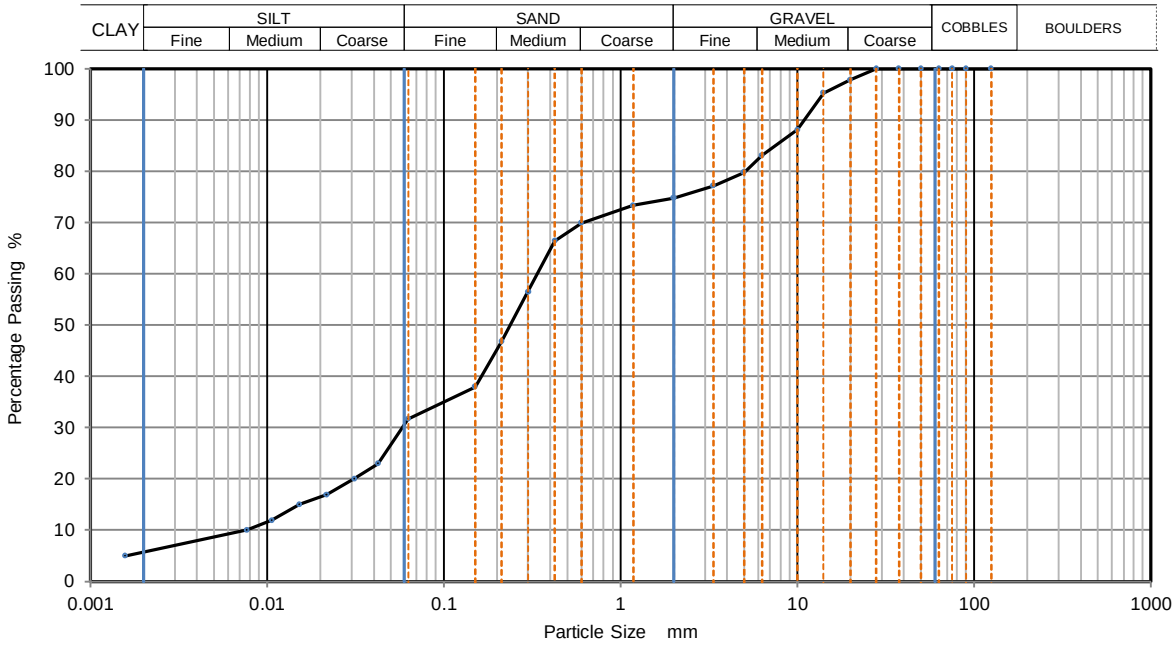
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 10 |
| Sand | 31 |
| Silt | 43 |
| Clay | 16 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0723 |
| D30 | mm | 0.0135 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033056 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033056 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0424 | 23 |
| 90 | 100 | 0.0311 | 20 |
| 75 | 100 | 0.0217 | 17 |
| 63 | 100 | 0.0152 | 15 |
| 50 | 100 | 0.0106 | 12 |
| 37.5 | 100 | 0.0077 | 10 |
| 28 | 100 | 0.0016 | 5 |
| 20 | 98 | | |
| 14 | 95 | | |
| 10 | 88 | | |
| 6.3 | 83 | | |
| 5 | 80 | | |
| 3.35 | 77 | | |
| 2 | 75 | | |
| 1.18 | 73 | | |
| 0.6 | 70 | Particle density (assumed) | |
| 0.425 | 66 | 2.67 Mg/m3 | |
| 0.3 | 57 | | |
| 0.212 | 47 | | |
| 0.15 | 38 | | |
| 0.063 | 32 | | |

| Dry Mass of sample, g. | 5516 |
|---|---|

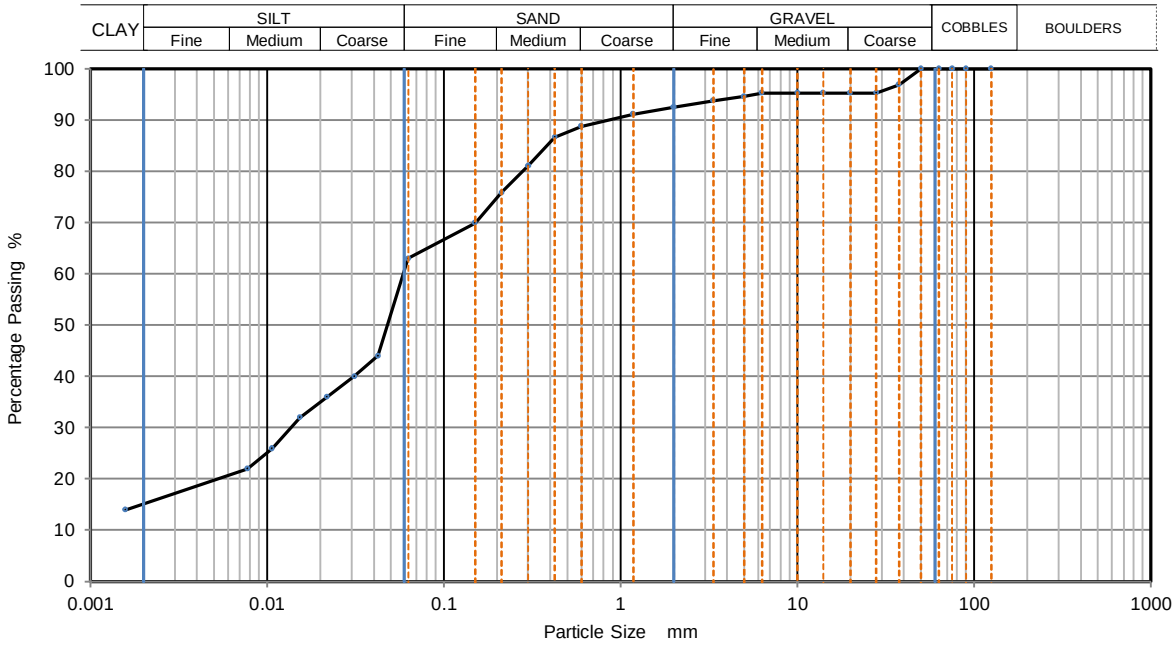
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 25 |
| Sand | 43 |
| Silt | 26 |
| Clay | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.34 |
| D30 | mm | 0.0583 |
| D10 | mm | 0.00776 |
| Uniformity Coefficient | | 44 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033061 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033061 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0422 | 44 |
| 90 | 100 | 0.0311 | 40 |
| 75 | 100 | 0.0218 | 36 |
| 63 | 100 | 0.0153 | 32 |
| 50 | 100 | 0.0107 | 26 |
| 37.5 | 97 | 0.0077 | 22 |
| 28 | 95 | 0.0016 | 14 |
| 20 | 95 | | |
| 14 | 95 | | |
| 10 | 95 | | |
| 6.3 | 95 | | |
| 5 | 95 | | |
| 3.35 | 94 | | |
| 2 | 93 | | |
| 1.18 | 91 | | |
| 0.6 | 89 | Particle density (assumed) | |
| 0.425 | 87 | 2.67 Mg/m3 | |
| 0.3 | 81 | | |
| 0.212 | 76 | | |
| 0.15 | 70 | | |
| 0.063 | 63 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4436 |

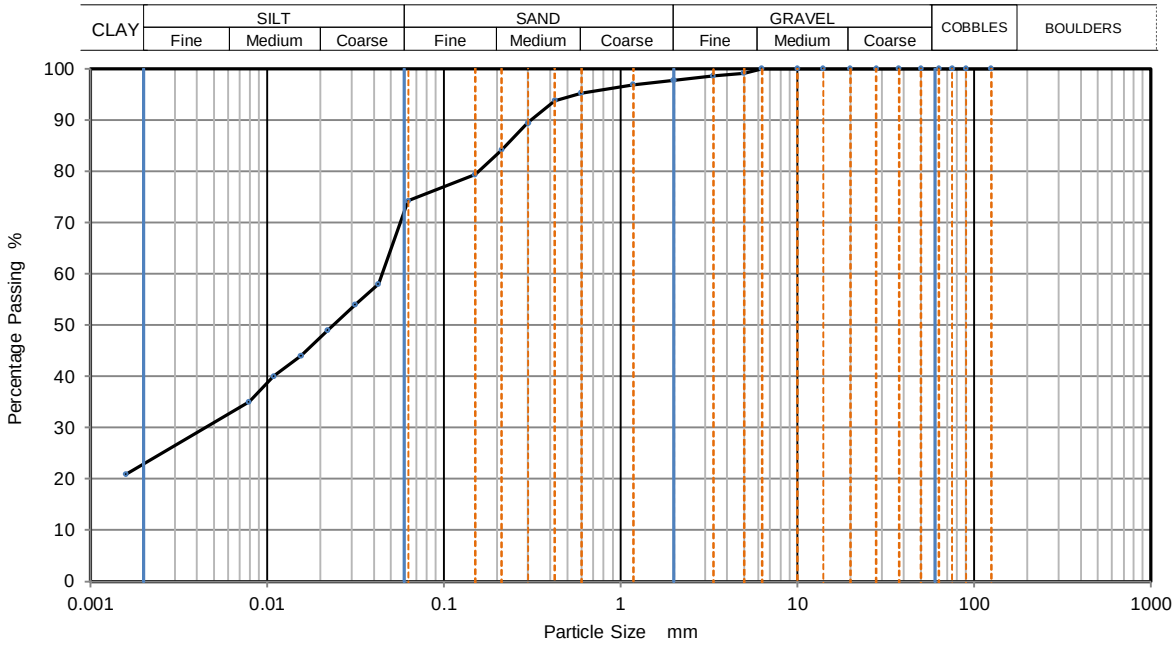
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 8 |
| Sand | 30 |
| Silt | 48 |
| Clay | 15 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0591 |
| D30 | mm | 0.0134 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033064 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 7.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033064 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 58 |
| 90 | 100 | 0.0315 | 54 |
| 75 | 100 | 0.0221 | 49 |
| 63 | 100 | 0.0155 | 44 |
| 50 | 100 | 0.0109 | 40 |
| 37.5 | 100 | 0.0079 | 35 |
| 28 | 100 | 0.0016 | 21 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 99 | | |
| 3.35 | 99 | | |
| 2 | 98 | | |
| 1.18 | 97 | | |
| 0.6 | 95 | Particle density (assumed) | |
| 0.425 | 94 | 2.67 | Mg/m3 |
| 0.3 | 89 | | |
| 0.212 | 84 | | |
| 0.15 | 79 | | |
| 0.063 | 74 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4413 |

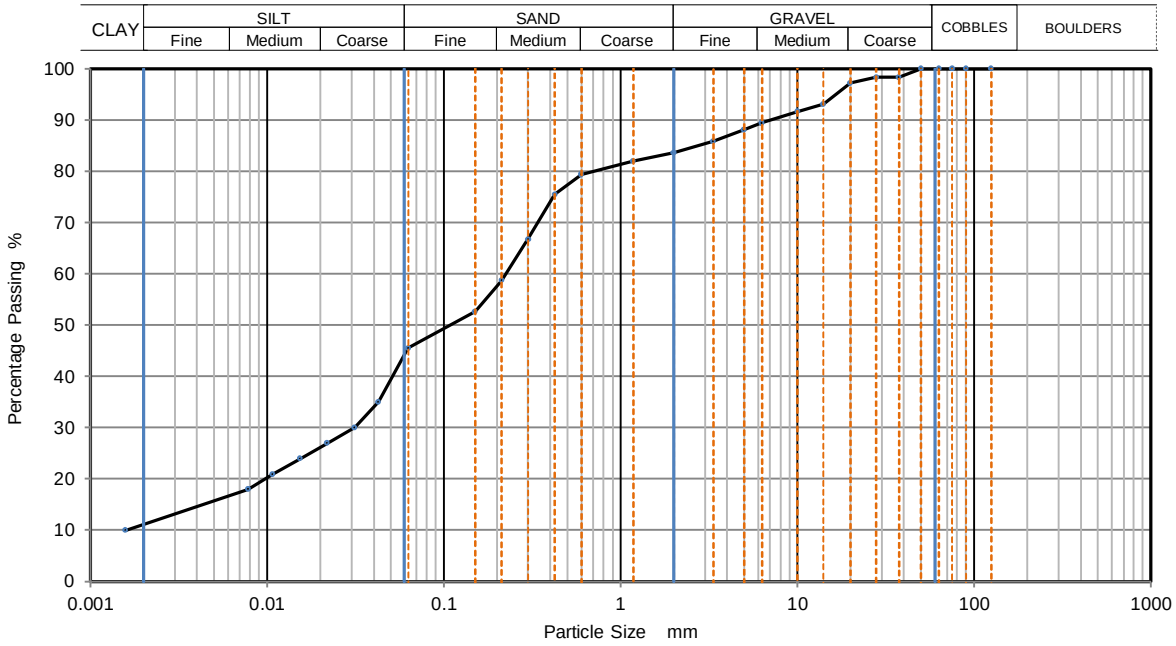
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 2 |
| Sand | 24 |
| Silt | 51 |
| Clay | 23 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0444 |
| D30 | mm | 0.00442 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033070 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 10.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033070 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 35 |
| 90 | 100 | 0.0313 | 30 |
| 75 | 100 | 0.0219 | 27 |
| 63 | 100 | 0.0154 | 24 |
| 50 | 100 | 0.0108 | 21 |
| 37.5 | 98 | 0.0078 | 18 |
| 28 | 98 | 0.0016 | 10 |
| 20 | 97 | | |
| 14 | 93 | | |
| 10 | 92 | | |
| 6.3 | 89 | | |
| 5 | 88 | | |
| 3.35 | 86 | | |
| 2 | 84 | | |
| 1.18 | 82 | | |
| 0.6 | 79 | Particle density (assumed) | |
| 0.425 | 76 | 2.67 Mg/m3 | |
| 0.3 | 67 | | |
| 0.212 | 59 | | |
| 0.15 | 53 | | |
| 0.063 | 46 | | |

| Dry Mass of sample, g. | 5989 |
|---|---|

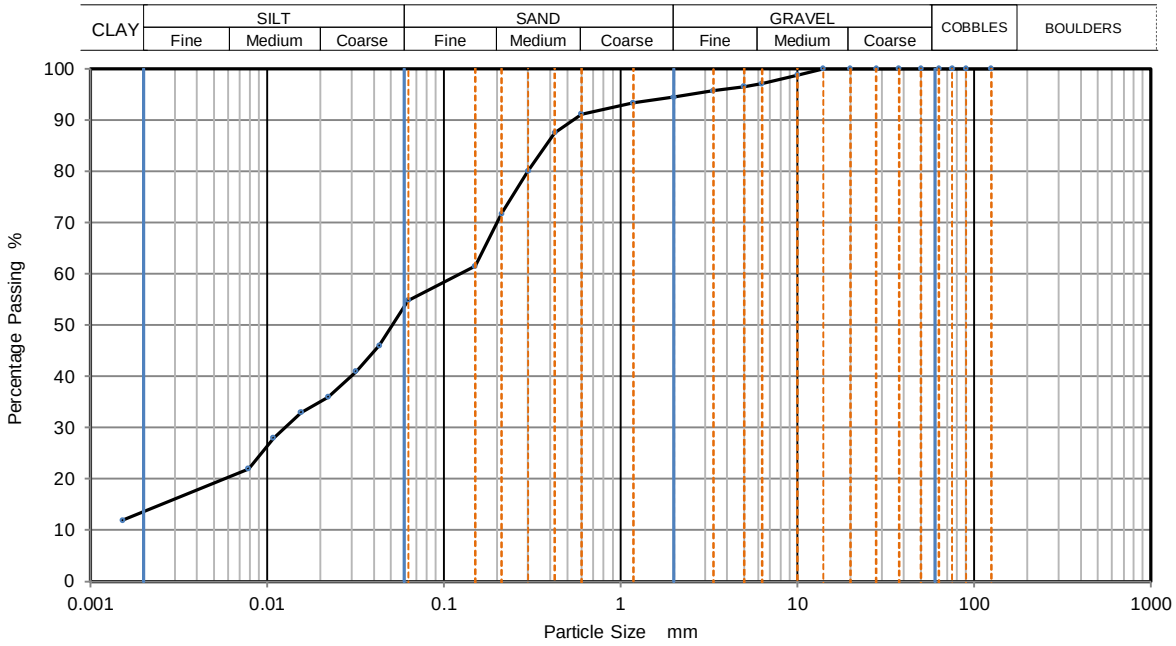
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 16 |
| Sand | 38 |
| Silt | 34 |
| Clay | 11 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.224 |
| D30 | mm | 0.0317 |
| D10 | mm | 0.00161 |
| Uniformity Coefficient | | 140 |
| Curvature Coefficient | | 2.8 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033073 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 12.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033073 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0431 | 46 |
| 90 | 100 | 0.0317 | 41 |
| 75 | 100 | 0.0222 | 36 |
| 63 | 100 | 0.0155 | 33 |
| 50 | 100 | 0.0108 | 28 |
| 37.5 | 100 | 0.0078 | 22 |
| 28 | 100 | 0.0015 | 12 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 99 | | |
| 6.3 | 97 | | |
| 5 | 97 | | |
| 3.35 | 96 | | |
| 2 | 94 | | |
| 1.18 | 93 | | |
| 0.6 | 91 | Particle density (assumed) | |
| 0.425 | 88 | 2.67 Mg/m3 | |
| 0.3 | 80 | | |
| 0.212 | 72 | | |
| 0.15 | 62 | | |
| 0.063 | 55 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5237 |

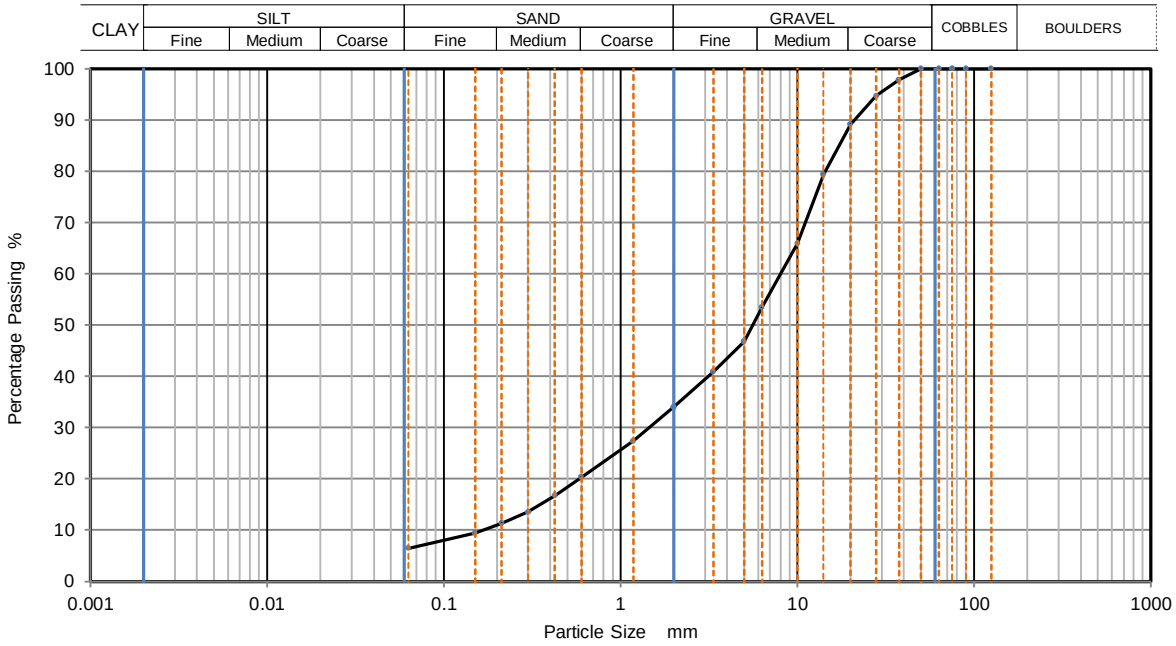
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 6 |
| Sand | 40 |
| Silt | 41 |
| Clay | 14 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.123 |
| D30 | mm | 0.0129 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020685 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 1.20 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1020685 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 98 | | |
| 28 | 95 | | |
| 20 | 89 | | |
| 14 | 79 | | |
| 10 | 66 | | |
| 6.3 | 54 | | |
| 5 | 47 | | |
| 3.35 | 41 | | |
| 2 | 34 | | |
| 1.18 | 27 | | |
| 0.6 | 20 | | |
| 0.425 | 17 | | |
| 0.3 | 14 | | |
| 0.212 | 11 | | |
| 0.15 | 10 | | |
| 0.063 | 7 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 7096 |

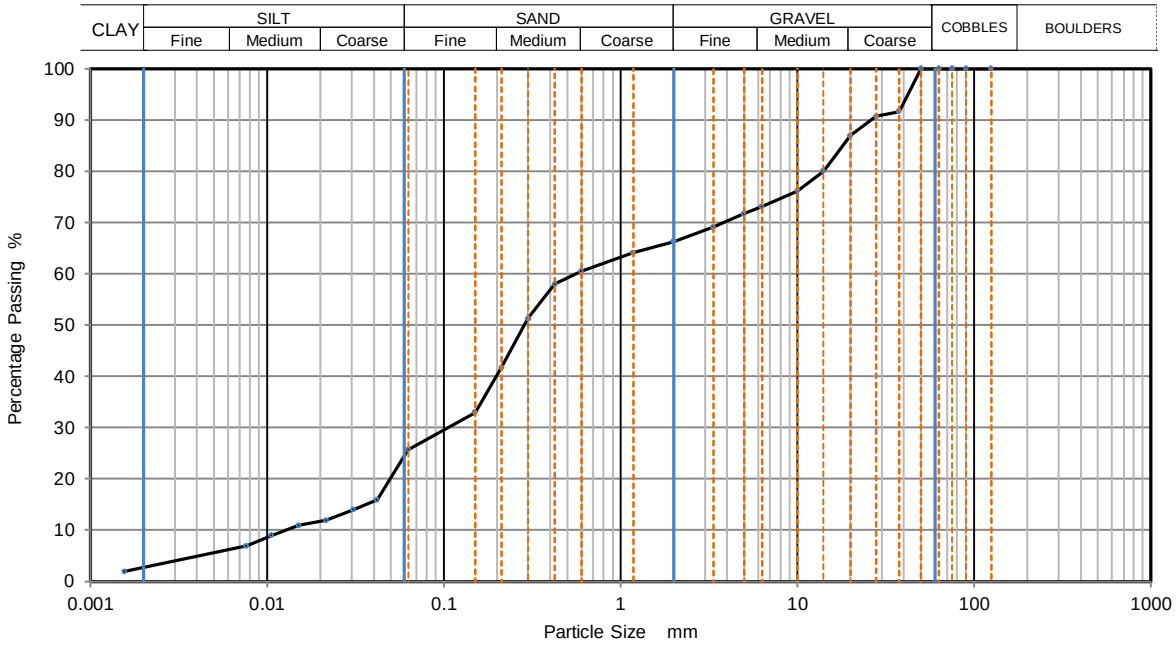
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 66 |
| Sand | 28 |
| | |
| Fines <0.063mm | 7 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 8.02 |
| D30 | mm | 1.45 |
| D10 | mm | 0.166 |
| Uniformity Coefficient | | 48 |
| Curvature Coefficient | | 1.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020687 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020687 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0419 | 16 |
| 90 | 100 | 0.0307 | 14 |
| 75 | 100 | 0.0216 | 12 |
| 63 | 100 | 0.0151 | 11 |
| 50 | 100 | 0.0106 | 9 |
| 37.5 | 92 | 0.0077 | 7 |
| 28 | 91 | 0.0016 | 2 |
| 20 | 87 | | |
| 14 | 80 | | |
| 10 | 76 | | |
| 6.3 | 73 | | |
| 5 | 72 | | |
| 3.35 | 69 | | |
| 2 | 66 | | |
| 1.18 | 64 | | |
| 0.6 | 61 | Particle density (assumed) | |
| 0.425 | 58 | 2.67 | Mg/m3 |
| 0.3 | 51 | | |
| 0.212 | 42 | | |
| 0.15 | 33 | | |
| 0.063 | 26 | | |

| Dry Mass of sample, g. | 5801 |
|---|---|

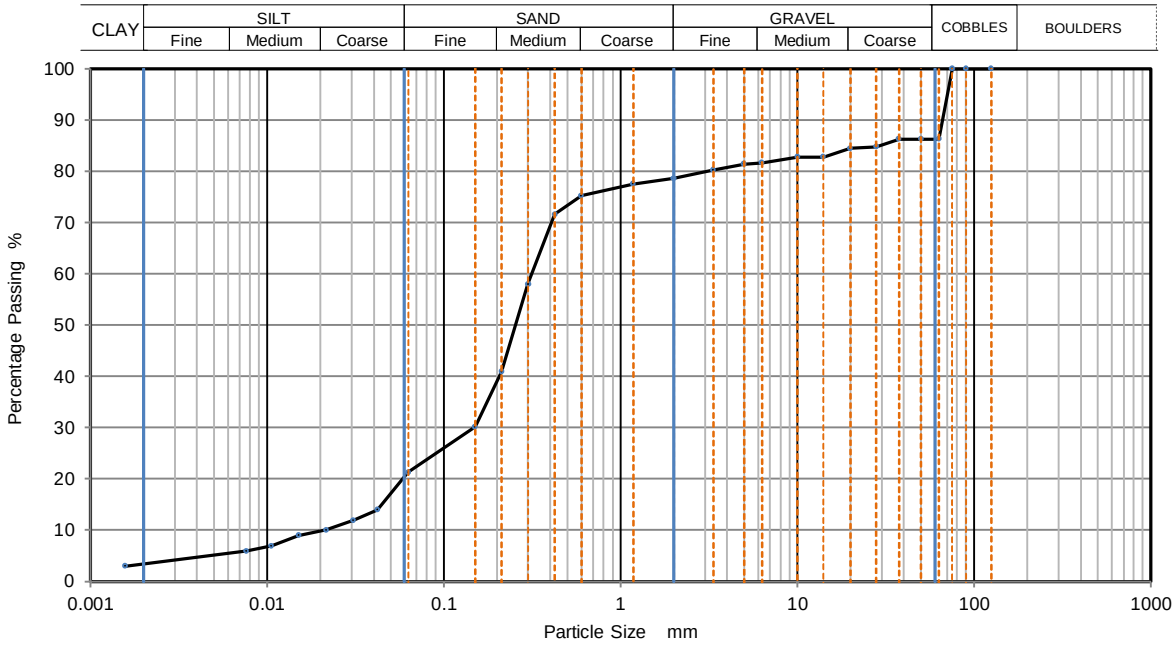
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 34 |
| Sand | 41 |
| Silt | 23 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.562 |
| D30 | mm | 0.105 |
| D10 | mm | 0.0132 |
| Uniformity Coefficient | | 43 |
| Curvature Coefficient | | 1.5 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020690 |
| Soil Description | Brown sandy gravelly CLAY/SILT | | | Depth, m | 3.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020690 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 14 |
| 90 | 100 | 0.0309 | 12 |
| 75 | 100 | 0.0216 | 10 |
| 63 | 86 | 0.0151 | 9 |
| 50 | 86 | 0.0106 | 7 |
| 37.5 | 86 | 0.0077 | 6 |
| 28 | 85 | 0.0016 | 3 |
| 20 | 85 | | |
| 14 | 83 | | |
| 10 | 83 | | |
| 6.3 | 82 | | |
| 5 | 81 | | |
| 3.35 | 80 | | |
| 2 | 79 | | |
| 1.18 | 78 | | |
| 0.6 | 75 | Particle density (assumed) | |
| 0.425 | 72 | 2.67 | Mg/m3 |
| 0.3 | 58 | | |
| 0.212 | 41 | | |
| 0.15 | 30 | | |
| 0.063 | 21 | | |

| Dry Mass of sample, g. | 3020 |
|---|---|

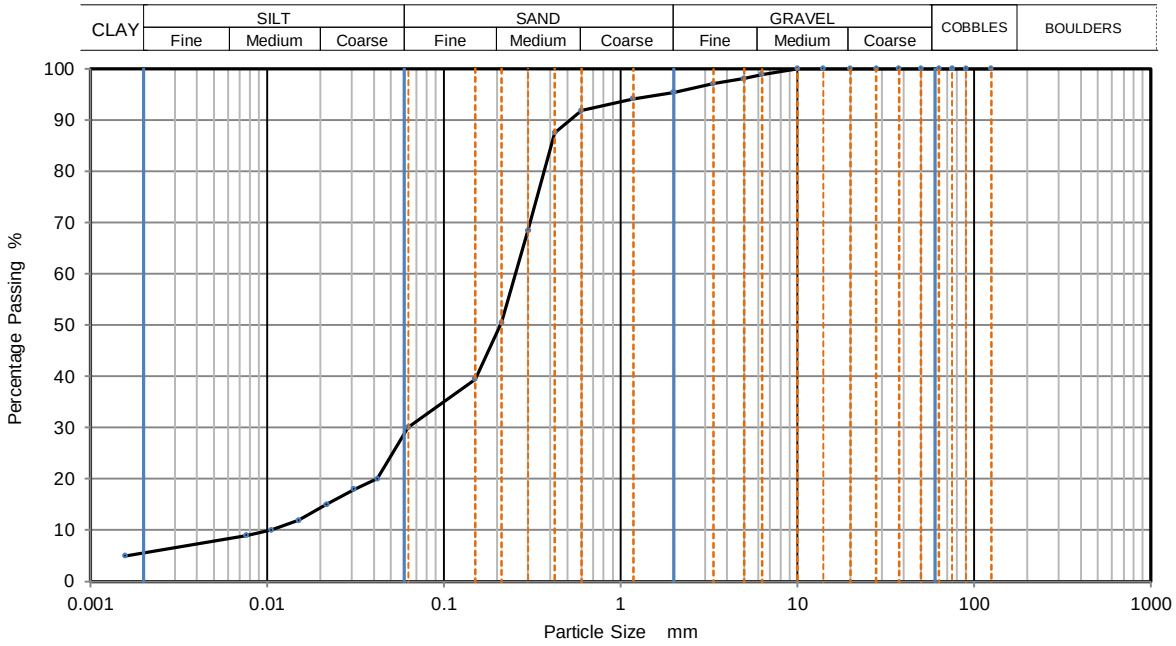
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 14 |
| Gravel | 8 |
| Sand | 57 |
| Silt | 18 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.315 |
| D30 | mm | 0.148 |
| D10 | mm | 0.0214 |
| Uniformity Coefficient | | 15 |
| Curvature Coefficient | | 3.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020692 |
| Soil Description | Brown silty gravelly SAND | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020692 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 20 |
| 90 | 100 | 0.0310 | 18 |
| 75 | 100 | 0.0217 | 15 |
| 63 | 100 | 0.0151 | 12 |
| 50 | 100 | 0.0106 | 10 |
| 37.5 | 100 | 0.0077 | 9 |
| 28 | 100 | 0.0016 | 5 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 99 | | |
| 5 | 98 | | |
| 3.35 | 97 | | |
| 2 | 95 | | |
| 1.18 | 94 | | |
| 0.6 | 92 | Particle density (assumed) | |
| 0.425 | 88 | 2.67 | Mg/m3 |
| 0.3 | 68 | | |
| 0.212 | 51 | | |
| 0.15 | 40 | | |
| 0.063 | 30 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3530 |

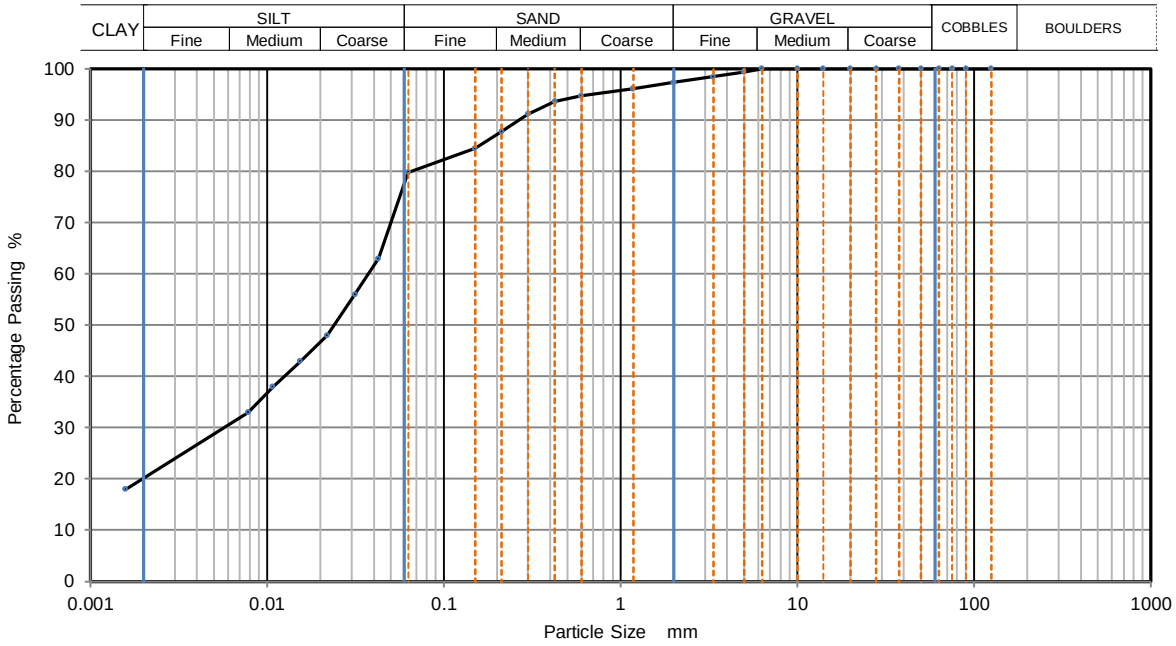
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 5 |
| Sand | 65 |
| Silt | 25 |
| Clay | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.255 |
| D30 | mm | 0.0628 |
| D10 | mm | 0.00974 |
| Uniformity Coefficient | | 26 |
| Curvature Coefficient | | 1.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020697 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020697 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 63 |
| 90 | 100 | 0.0314 | 56 |
| 75 | 100 | 0.0219 | 48 |
| 63 | 100 | 0.0154 | 43 |
| 50 | 100 | 0.0108 | 38 |
| 37.5 | 100 | 0.0078 | 33 |
| 28 | 100 | 0.0016 | 18 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 99 | | |
| 3.35 | 98 | | |
| 2 | 97 | | |
| 1.18 | 96 | | |
| 0.6 | 95 | Particle density (assumed) | |
| 0.425 | 94 | 2.67 | Mg/m3 |
| 0.3 | 91 | | |
| 0.212 | 88 | | |
| 0.15 | 85 | | |
| 0.063 | 80 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5221 |

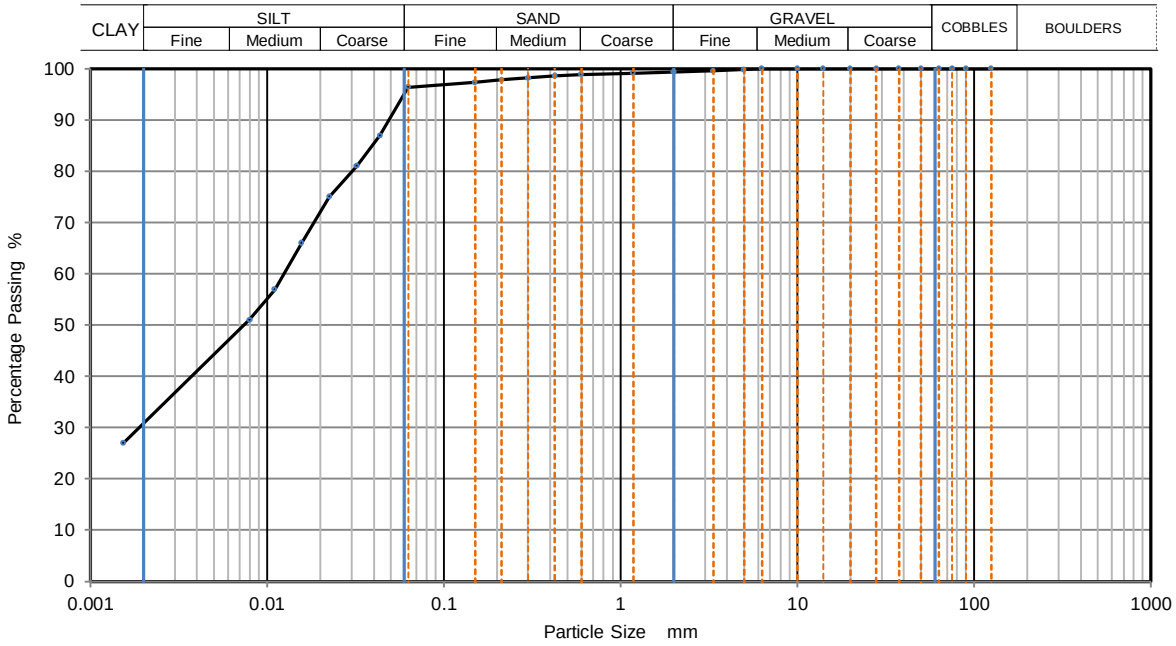
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 3 |
| Sand | 18 |
| Silt | 60 |
| Clay | 20 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0376 |
| D30 | mm | 0.00579 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020708 |
| Soil Description | Brown slightly gravelly sandy CLAY | | | Depth, m | 12.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020708 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0435 | 87 |
| 90 | 100 | 0.0321 | 81 |
| 75 | 100 | 0.0225 | 75 |
| 63 | 100 | 0.0157 | 66 |
| 50 | 100 | 0.0110 | 57 |
| 37.5 | 100 | 0.0080 | 51 |
| 28 | 100 | 0.0015 | 27 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 99 | | |
| 1.18 | 99 | | |
| 0.6 | 99 | Particle density (assumed) | |
| 0.425 | 99 | 2.67 | Mg/m3 |
| 0.3 | 98 | | |
| 0.212 | 98 | | |
| 0.15 | 97 | | |
| 0.063 | 96 | | |

| Dry Mass of sample, g. | 5937 |
|---|---|

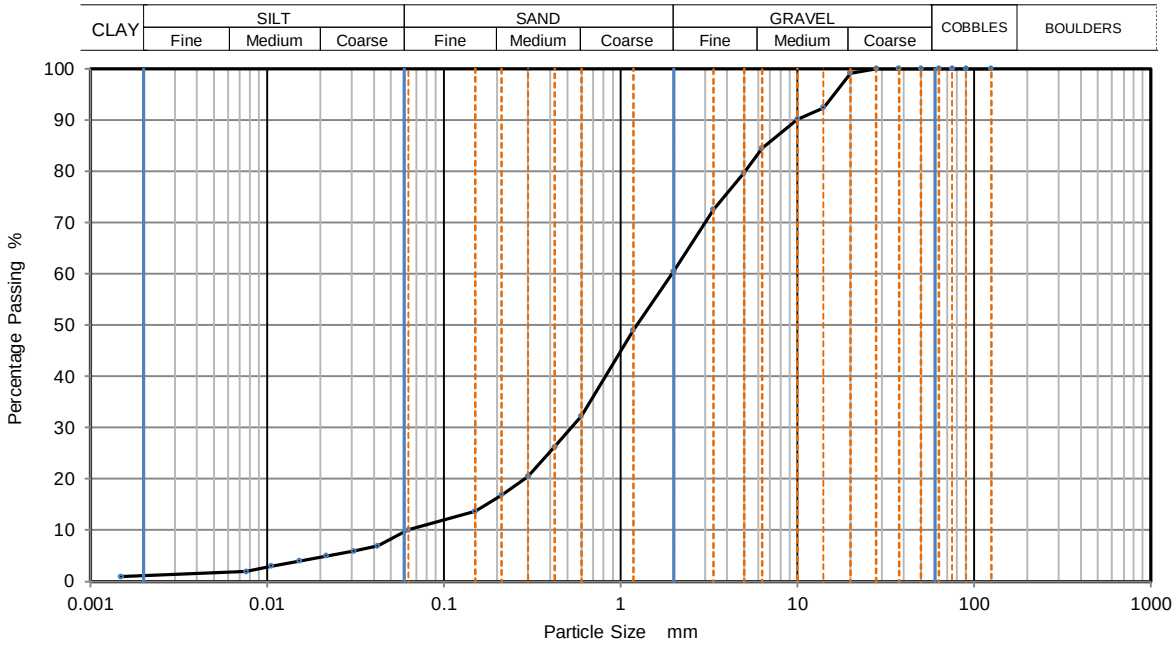
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 1 |
| Sand | 3 |
| Silt | 65 |
| Clay | 31 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0123 |
| D30 | mm | 0.00187 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020644 |
| Soil Description | Grey gravelly clayey SAND M/G | | | Depth, m | 0.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020644 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 7 |
| 90 | 100 | 0.0311 | 6 |
| 75 | 100 | 0.0216 | 5 |
| 63 | 100 | 0.0152 | 4 |
| 50 | 100 | 0.0106 | 3 |
| 37.5 | 100 | 0.0076 | 2 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 99 | | |
| 14 | 92 | | |
| 10 | 90 | | |
| 6.3 | 85 | | |
| 5 | 80 | | |
| 3.35 | 73 | | |
| 2 | 61 | | |
| 1.18 | 49 | | |
| 0.6 | 32 | Particle density (assumed) | |
| 0.425 | 26 | 2.67 Mg/m3 | |
| 0.3 | 21 | | |
| 0.212 | 17 | | |
| 0.15 | 14 | | |
| 0.063 | 10 | | |

| Dry Mass of sample, g. | 3115 |
|---|---|

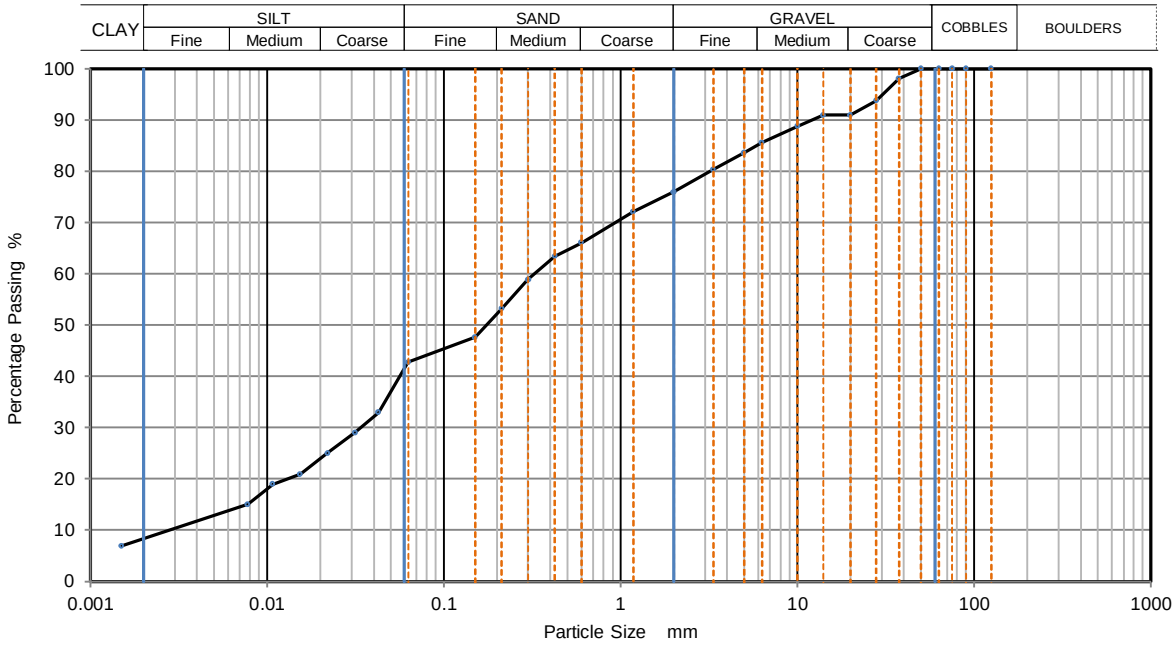
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 40 |
| Sand | 51 |
| Silt | 9 |
| Clay | 1 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.95 |
| D30 | mm | 0.526 |
| D10 | mm | 0.0631 |
| Uniformity Coefficient | | 31 |
| Curvature Coefficient | | 2.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020652 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020652 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 33 |
| 90 | 100 | 0.0315 | 29 |
| 75 | 100 | 0.0220 | 25 |
| 63 | 100 | 0.0153 | 21 |
| 50 | 100 | 0.0108 | 19 |
| 37.5 | 98 | 0.0078 | 15 |
| 28 | 94 | 0.0015 | 7 |
| 20 | 91 | | |
| 14 | 91 | | |
| 10 | 89 | | |
| 6.3 | 86 | | |
| 5 | 84 | | |
| 3.35 | 80 | | |
| 2 | 76 | | |
| 1.18 | 72 | | |
| 0.6 | 66 | Particle density (assumed) | |
| 0.425 | 63 | 2.67 | Mg/m3 |
| 0.3 | 59 | | |
| 0.212 | 53 | | |
| 0.15 | 48 | | |
| 0.063 | 43 | | |

| Dry Mass of sample, g. | 3829 |
|---|---|

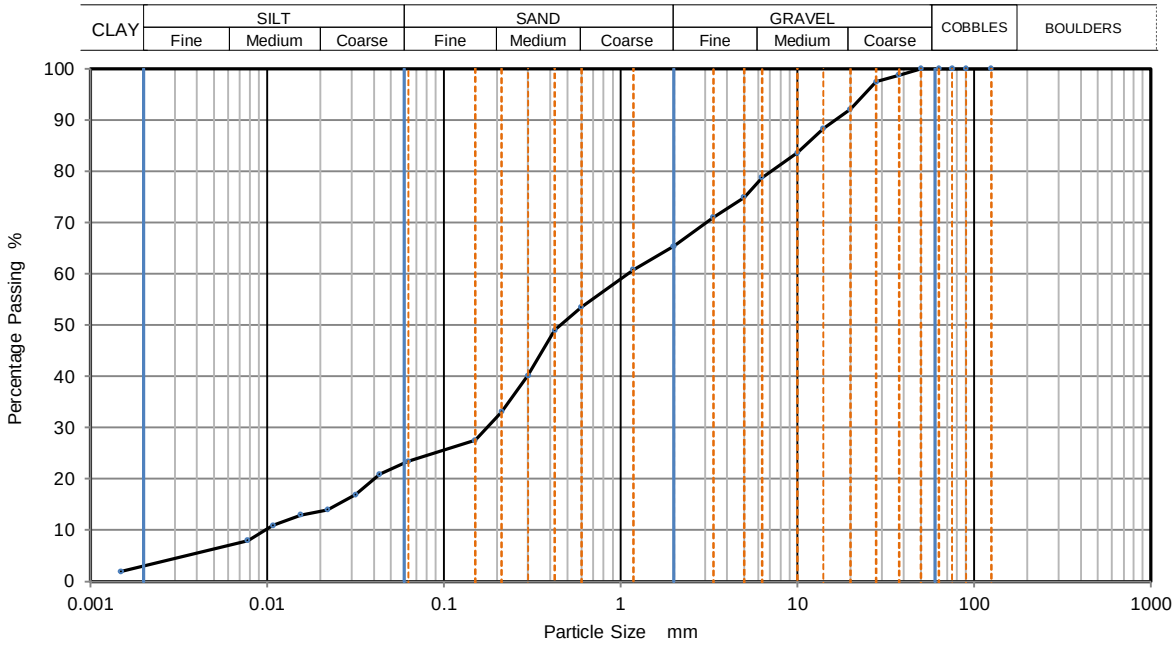
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 24 |
| Sand | 33 |
| Silt | 35 |
| Clay | 8 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.327 |
| D30 | mm | 0.0332 |
| D10 | mm | 0.00299 |
| Uniformity Coefficient | | 110 |
| Curvature Coefficient | | 1.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020659 |
| Soil Description | Brownish grey sandy clayey GRAVEL | | | Depth, m | 5.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020659 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0433 | 21 |
| 90 | 100 | 0.0316 | 17 |
| 75 | 100 | 0.0220 | 14 |
| 63 | 100 | 0.0155 | 13 |
| 50 | 100 | 0.0108 | 11 |
| 37.5 | 99 | 0.0078 | 8 |
| 28 | 97 | 0.0015 | 2 |
| 20 | 92 | | |
| 14 | 88 | | |
| 10 | 84 | | |
| 6.3 | 79 | | |
| 5 | 75 | | |
| 3.35 | 71 | | |
| 2 | 65 | | |
| 1.18 | 61 | | |
| 0.6 | 54 | Particle density (assumed) | |
| 0.425 | 49 | 2.67 Mg/m3 | |
| 0.3 | 40 | | |
| 0.212 | 33 | | |
| 0.15 | 28 | | |
| 0.063 | 24 | | |

| Dry Mass of sample, g. | 5991 |
|---|---|

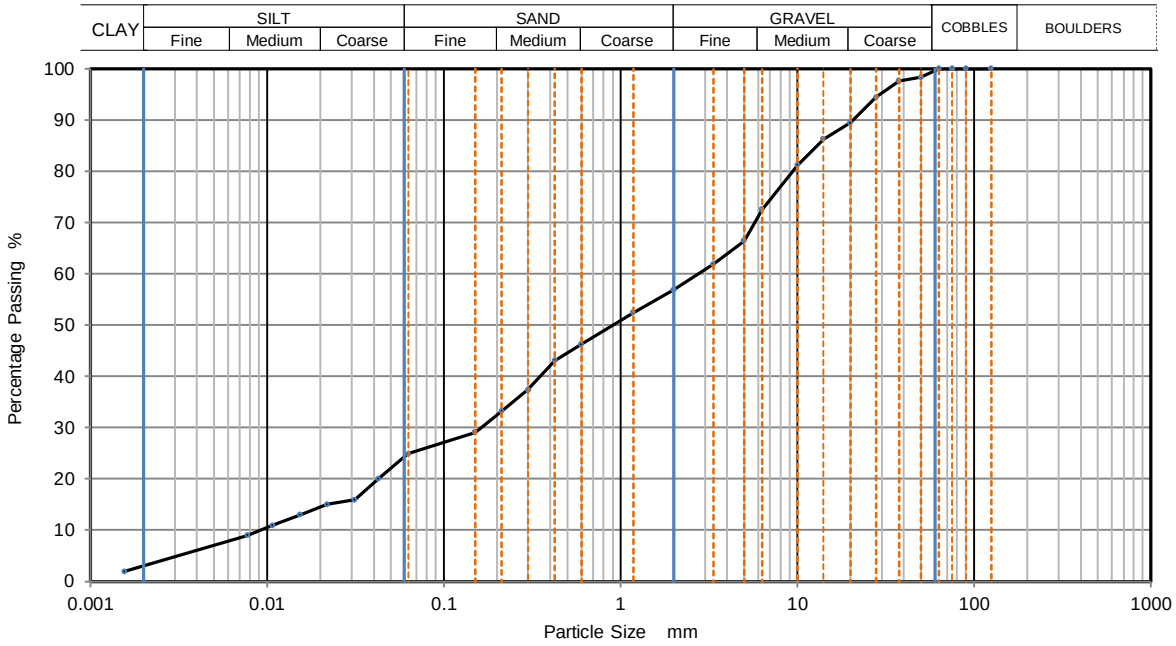
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 35 |
| Sand | 42 |
| Silt | 20 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.09 |
| D30 | mm | 0.175 |
| D10 | mm | 0.00963 |
| Uniformity Coefficient | | 110 |
| Curvature Coefficient | | 2.9 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020662 |
| Soil Description | | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020662 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 20 |
| 90 | 100 | 0.0313 | 16 |
| 75 | 100 | 0.0219 | 15 |
| 63 | 100 | 0.0153 | 13 |
| 50 | 98 | 0.0107 | 11 |
| 37.5 | 98 | 0.0077 | 9 |
| 28 | 95 | 0.0016 | 2 |
| 20 | 89 | | |
| 14 | 86 | | |
| 10 | 81 | | |
| 6.3 | 73 | | |
| 5 | 66 | | |
| 3.35 | 62 | | |
| 2 | 57 | | |
| 1.18 | 52 | | |
| 0.6 | 46 | Particle density (assumed) | |
| 0.425 | 43 | 2.67 | Mg/m3 |
| 0.3 | 37 | | |
| 0.212 | 33 | | |
| 0.15 | 29 | | |
| 0.063 | 25 | | |

| Dry Mass of sample, g. | 11149 |
|---|---|

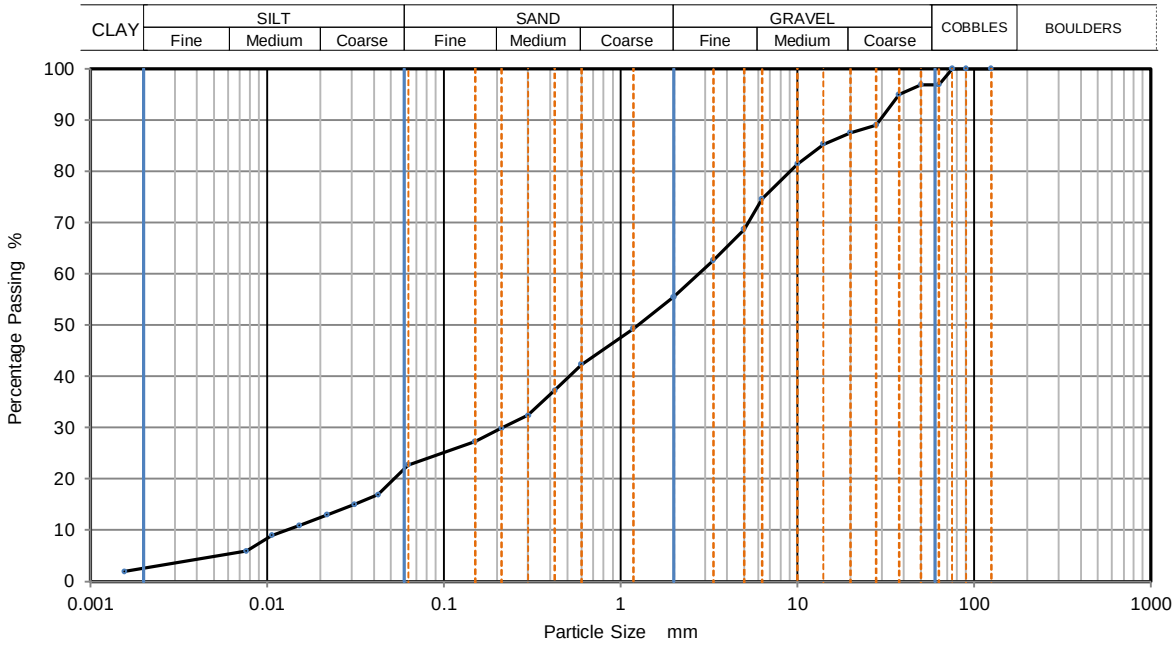
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 43 |
| Sand | 32 |
| Silt | 22 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.76 |
| D30 | mm | 0.162 |
| D10 | mm | 0.00938 |
| Uniformity Coefficient | | 290 |
| Curvature Coefficient | | 1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020665 |
| Soil Description | Grey gravelly clayey SAND | | | Depth, m | 7.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020665 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0426 | 17 |
| 90 | 100 | 0.0313 | 15 |
| 75 | 100 | 0.0218 | 13 |
| 63 | 97 | 0.0152 | 11 |
| 50 | 97 | 0.0106 | 9 |
| 37.5 | 95 | 0.0077 | 6 |
| 28 | 89 | 0.0016 | 2 |
| 20 | 88 | | |
| 14 | 85 | | |
| 10 | 81 | | |
| 6.3 | 75 | | |
| 5 | 69 | | |
| 3.35 | 63 | | |
| 2 | 56 | | |
| 1.18 | 49 | | |
| 0.6 | 42 | Particle density (assumed) | |
| 0.425 | 37 | 2.67 | Mg/m3 |
| 0.3 | 32 | | |
| 0.212 | 30 | | |
| 0.15 | 27 | | |
| 0.063 | 23 | | |

| Dry Mass of sample, g. | 10814 |
|---|---|

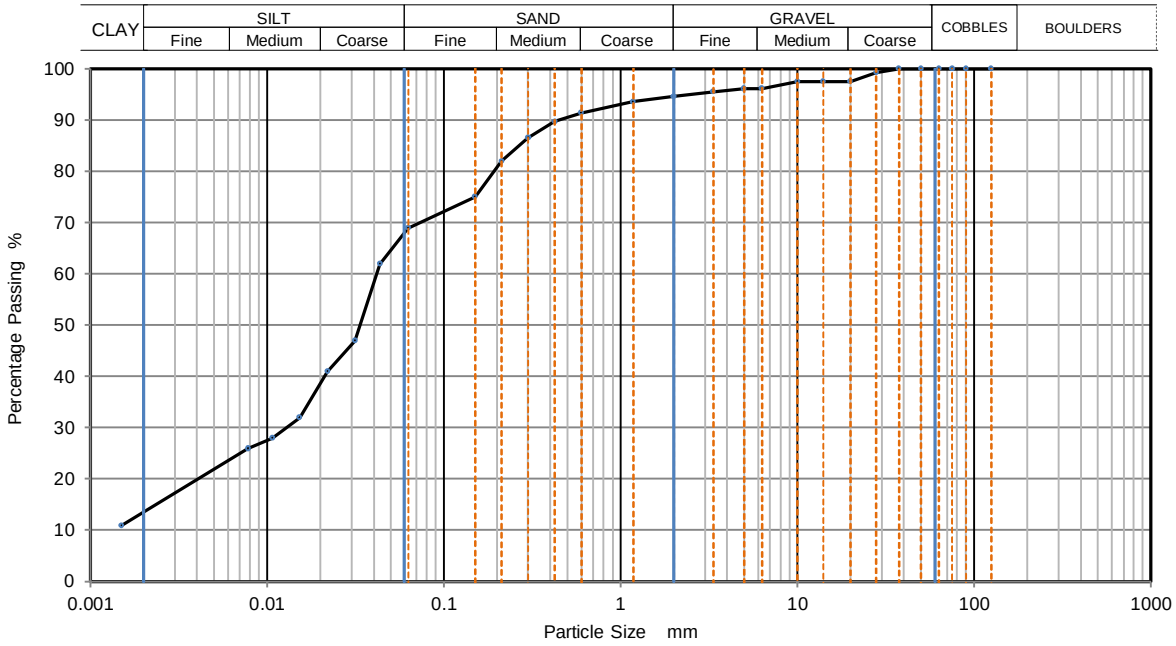
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 3 |
| Gravel | 41 |
| Sand | 33 |
| Silt | 20 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.76 |
| D30 | mm | 0.214 |
| D10 | mm | 0.0133 |
| Uniformity Coefficient | | 210 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1028968 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 9.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1028968 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0435 | 62 |
| 90 | 100 | 0.0315 | 47 |
| 75 | 100 | 0.0220 | 41 |
| 63 | 100 | 0.0153 | 32 |
| 50 | 100 | 0.0107 | 28 |
| 37.5 | 100 | 0.0078 | 26 |
| 28 | 99 | 0.0015 | 11 |
| 20 | 98 | | |
| 14 | 98 | | |
| 10 | 98 | | |
| 6.3 | 96 | | |
| 5 | 96 | | |
| 3.35 | 96 | | |
| 2 | 95 | | |
| 1.18 | 94 | | |
| 0.6 | 91 | Particle density (assumed) | |
| 0.425 | 90 | 2.67 | Mg/m3 |
| 0.3 | 87 | | |
| 0.212 | 82 | | |
| 0.15 | 75 | | |
| 0.063 | 69 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4378 |

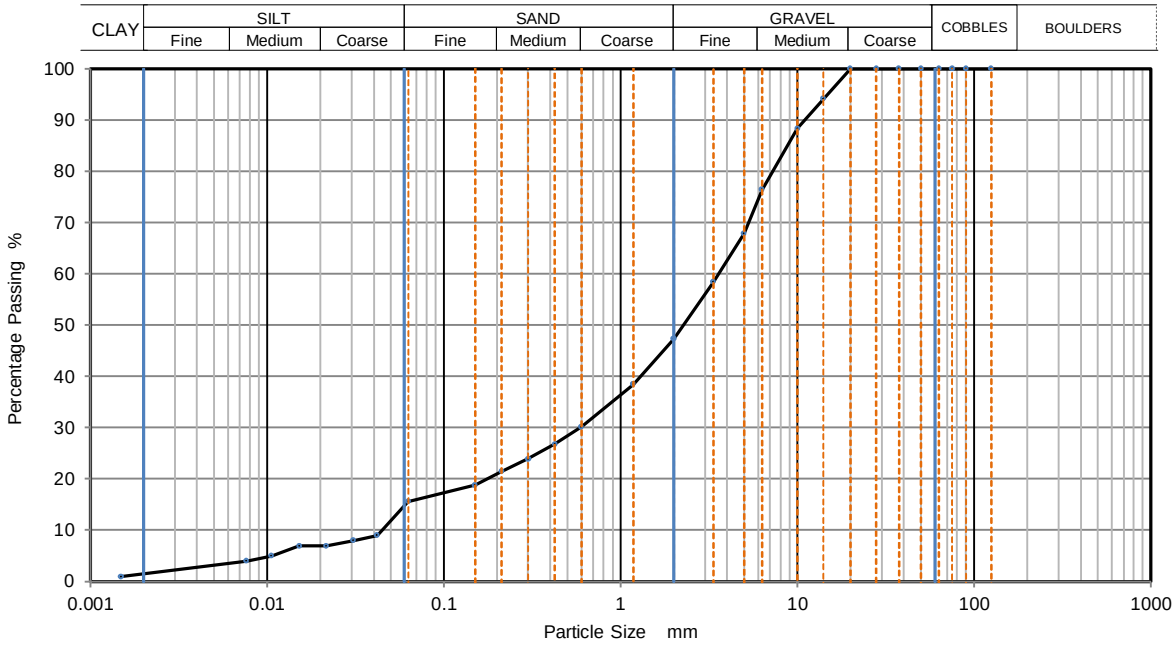
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 5 |
| Sand | 26 |
| Silt | 56 |
| Clay | 13 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0413 |
| D30 | mm | 0.0127 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020674 |
| Soil Description | Grey clayey SAND + GRAVEL M/G | | | Depth, m | 1.20 |
| Specimen Reference | 6 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020674 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0418 | 9 |
| 90 | 100 | 0.0308 | 8 |
| 75 | 100 | 0.0216 | 7 |
| 63 | 100 | 0.0152 | 7 |
| 50 | 100 | 0.0106 | 5 |
| 37.5 | 100 | 0.0076 | 4 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 94 | | |
| 10 | 88 | | |
| 6.3 | 76 | | |
| 5 | 68 | | |
| 3.35 | 58 | | |
| 2 | 47 | | |
| 1.18 | 39 | | |
| 0.6 | 30 | Particle density (assumed) | |
| 0.425 | 27 | 2.67 | Mg/m3 |
| 0.3 | 24 | | |
| 0.212 | 22 | | |
| 0.15 | 19 | | |
| 0.063 | 16 | | |

| Dry Mass of sample, g. | 1483 |
|---|---|

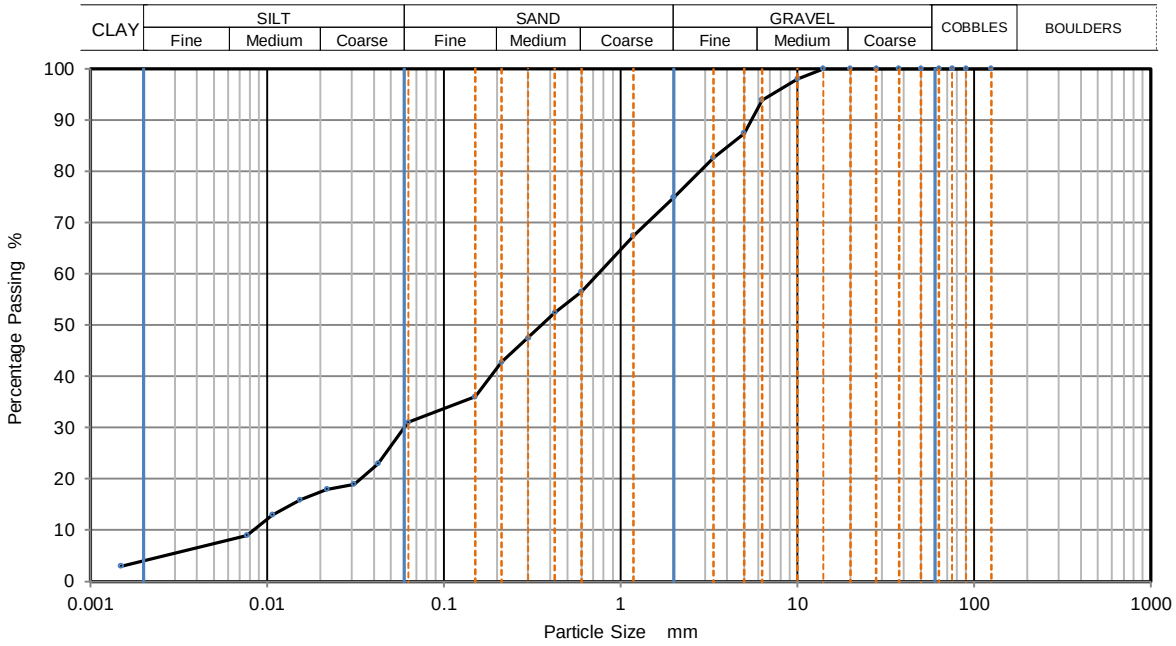
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 53 |
| Sand | 32 |
| Silt | 14 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 3.58 |
| D30 | mm | 0.586 |
| D10 | mm | 0.0435 |
| Uniformity Coefficient | | 82 |
| Curvature Coefficient | | 2.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020677 |
| Soil Description | Grey sandy gravelly CLAY M/G | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020677 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 23 |
| 90 | 100 | 0.0311 | 19 |
| 75 | 100 | 0.0219 | 18 |
| 63 | 100 | 0.0153 | 16 |
| 50 | 100 | 0.0107 | 13 |
| 37.5 | 100 | 0.0077 | 9 |
| 28 | 100 | 0.0015 | 3 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 98 | | |
| 6.3 | 94 | | |
| 5 | 87 | | |
| 3.35 | 83 | | |
| 2 | 75 | | |
| 1.18 | 67 | | |
| 0.6 | 57 | Particle density (assumed) | |
| 0.425 | 52 | 2.67 | Mg/m3 |
| 0.3 | 48 | | |
| 0.212 | 43 | | |
| 0.15 | 36 | | |
| 0.063 | 31 | | |

| Dry Mass of sample, g. | 2883 |
|---|---|

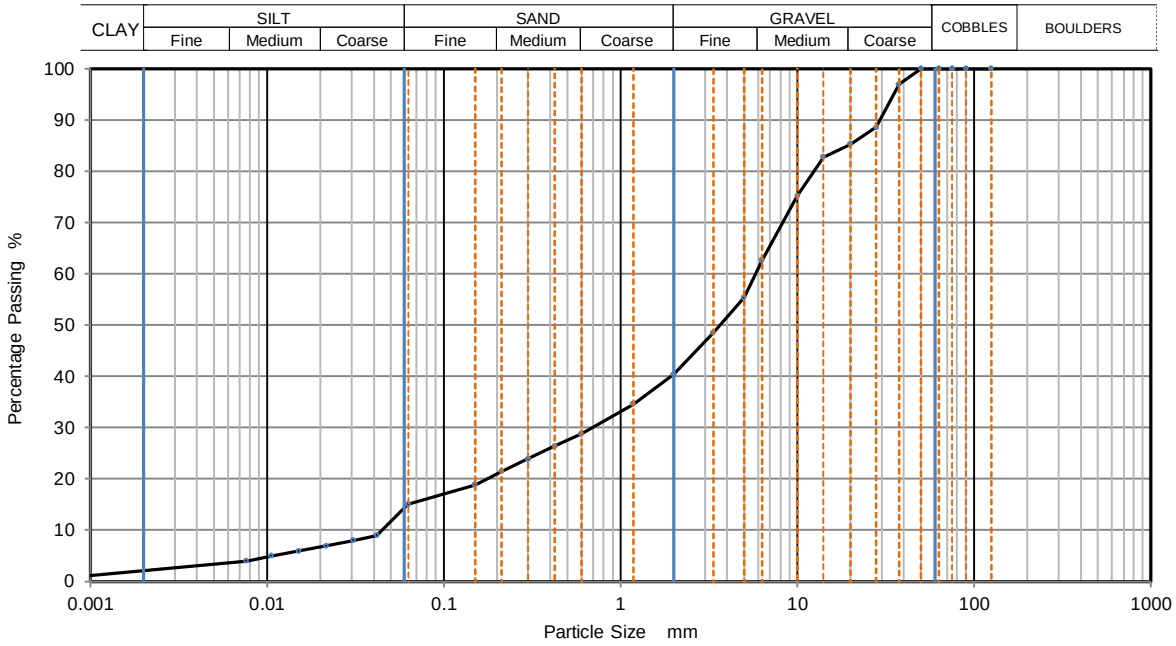
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 25 |
| Sand | 44 |
| Silt | 27 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.745 |
| D30 | mm | 0.0599 |
| D10 | mm | 0.00848 |
| Uniformity Coefficient | | 88 |
| Curvature Coefficient | | 0.57 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020683 |
| Soil Description | Grey sandy gravelly CLAY | | | Depth, m | 4.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020683 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0417 | 9 |
| 90 | 100 | 0.0307 | 8 |
| 75 | 100 | 0.0216 | 7 |
| 63 | 100 | 0.0151 | 6 |
| 50 | 100 | 0.0106 | 5 |
| 37.5 | 97 | 0.0077 | 4 |
| 28 | 89 | 0.0009 | 1 |
| 20 | 85 | | |
| 14 | 83 | | |
| 10 | 75 | | |
| 6.3 | 63 | | |
| 5 | 55 | | |
| 3.35 | 49 | | |
| 2 | 40 | | |
| 1.18 | 35 | | |
| 0.6 | 29 | Particle density (assumed) | |
| 0.425 | 26 | 2.67 | Mg/m3 |
| 0.3 | 24 | | |
| 0.212 | 22 | | |
| 0.15 | 19 | | |
| 0.063 | 15 | | |

| Dry Mass of sample, g. | 8012 |
|---|---|

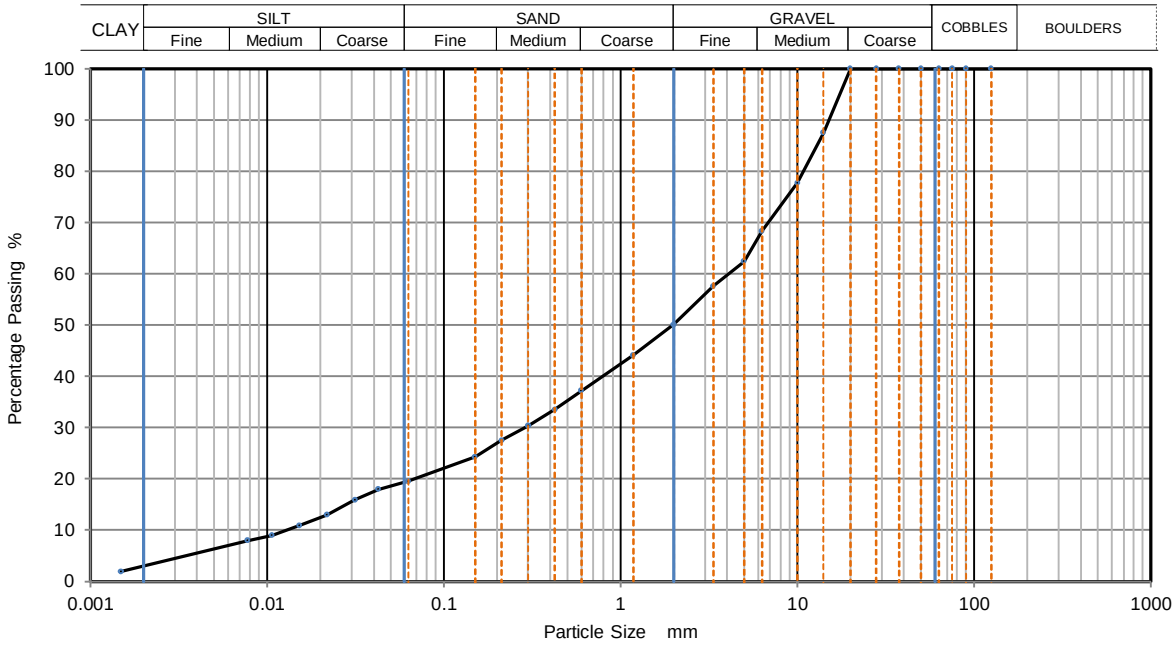
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 60 |
| Sand | 25 |
| Silt | 13 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 5.8 |
| D30 | mm | 0.694 |
| D10 | mm | 0.0443 |
| Uniformity Coefficient | | 130 |
| Curvature Coefficient | | 1.9 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030252 |
| Soil Description | Grey sandy gravelly CLAY | | | Depth, m | 5.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | D |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030252 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 18 |
| 90 | 100 | 0.0315 | 16 |
| 75 | 100 | 0.0219 | 13 |
| 63 | 100 | 0.0153 | 11 |
| 50 | 100 | 0.0107 | 9 |
| 37.5 | 100 | 0.0078 | 8 |
| 28 | 100 | 0.0015 | 2 |
| 20 | 100 | | |
| 14 | 88 | | |
| 10 | 78 | | |
| 6.3 | 68 | | |
| 5 | 62 | | |
| 3.35 | 58 | | |
| 2 | 50 | | |
| 1.18 | 44 | | |
| 0.6 | 37 | Particle density (assumed) | |
| 0.425 | 34 | 2.67 Mg/m3 | |
| 0.3 | 30 | | |
| 0.212 | 28 | | |
| 0.15 | 24 | | |
| 0.063 | 20 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 312 |

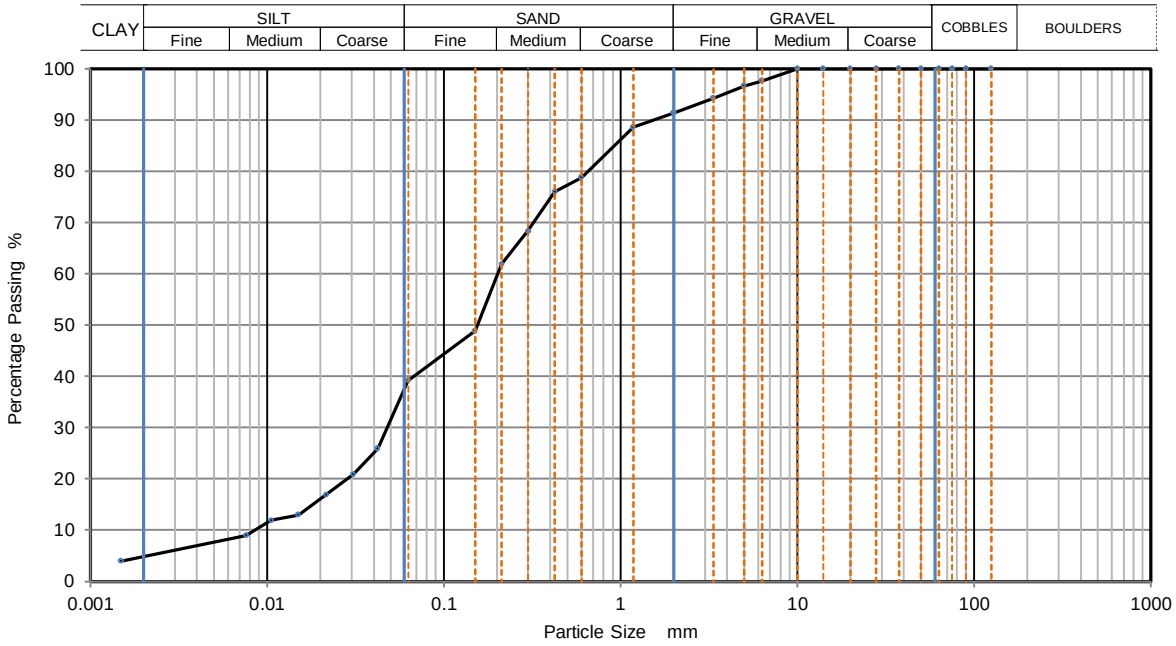
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 50 |
| Sand | 31 |
| Silt | 16 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 4.1 |
| D30 | mm | 0.286 |
| D10 | mm | 0.0132 |
| Uniformity Coefficient | | 310 |
| Curvature Coefficient | | 1.5 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030259 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 7.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030259 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 26 |
| 90 | 100 | 0.0308 | 21 |
| 75 | 100 | 0.0215 | 17 |
| 63 | 100 | 0.0150 | 13 |
| 50 | 100 | 0.0106 | 12 |
| 37.5 | 100 | 0.0076 | 9 |
| 28 | 100 | 0.0015 | 4 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 98 | | |
| 5 | 97 | | |
| 3.35 | 94 | | |
| 2 | 91 | | |
| 1.18 | 89 | | |
| 0.6 | 79 | Particle density (assumed) | |
| 0.425 | 76 | 2.67 | Mg/m3 |
| 0.3 | 68 | | |
| 0.212 | 62 | | |
| 0.15 | 49 | | |
| 0.063 | 39 | | |

| Dry Mass of sample, g. | 4002 |
|---|---|

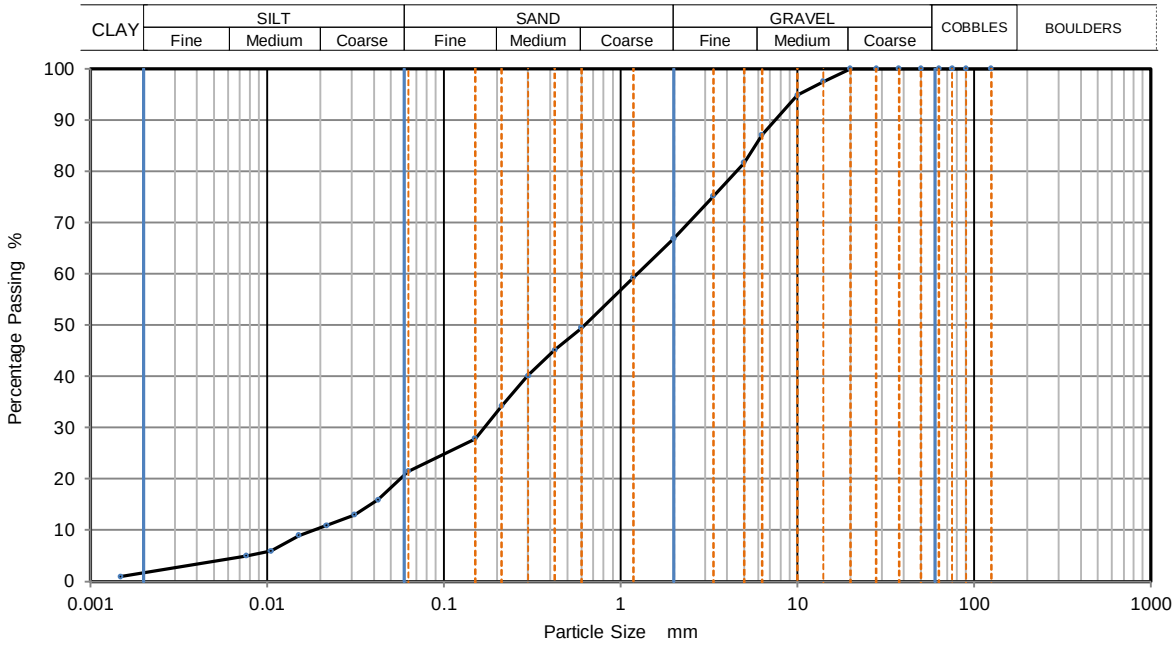
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 9 |
| Sand | 52 |
| Silt | 35 |
| Clay | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.202 |
| D30 | mm | 0.0479 |
| D10 | mm | 0.00867 |
| Uniformity Coefficient | | 23 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030265 |
| Soil Description | Grey gravelly clayey SAND | | | Depth, m | 10.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030265 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0426 | 16 |
| 90 | 100 | 0.0312 | 13 |
| 75 | 100 | 0.0218 | 11 |
| 63 | 100 | 0.0151 | 9 |
| 50 | 100 | 0.0105 | 6 |
| 37.5 | 100 | 0.0076 | 5 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 98 | | |
| 10 | 95 | | |
| 6.3 | 87 | | |
| 5 | 82 | | |
| 3.35 | 75 | | |
| 2 | 67 | | |
| 1.18 | 59 | | |
| 0.6 | 50 | Particle density (assumed) | |
| 0.425 | 45 | 2.67 | Mg/m3 |
| 0.3 | 40 | | |
| 0.212 | 34 | | |
| 0.15 | 28 | | |
| 0.063 | 22 | | |

| Dry Mass of sample, g. | 4644 |
|---|---|

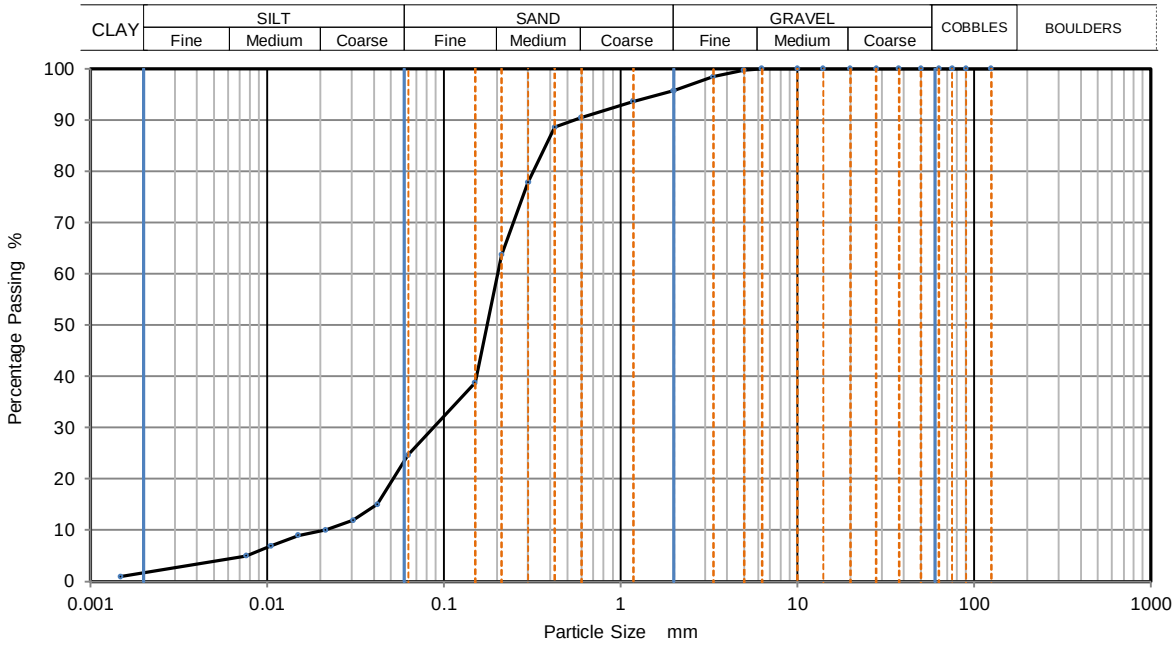
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 33 |
| Sand | 45 |
| Silt | 20 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.24 |
| D30 | mm | 0.168 |
| D10 | mm | 0.0179 |
| Uniformity Coefficient | | 69 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030270 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 13.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030270 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 15 |
| 90 | 100 | 0.0307 | 12 |
| 75 | 100 | 0.0214 | 10 |
| 63 | 100 | 0.0150 | 9 |
| 50 | 100 | 0.0105 | 7 |
| 37.5 | 100 | 0.0076 | 5 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 98 | | |
| 2 | 96 | | |
| 1.18 | 94 | | |
| 0.6 | 91 | Particle density (assumed) | |
| 0.425 | 89 | 2.67 Mg/m3 | |
| 0.3 | 78 | | |
| 0.212 | 64 | | |
| 0.15 | 39 | | |
| 0.063 | 25 | | |

| Dry Mass of sample, g. | 3993 |
|---|---|

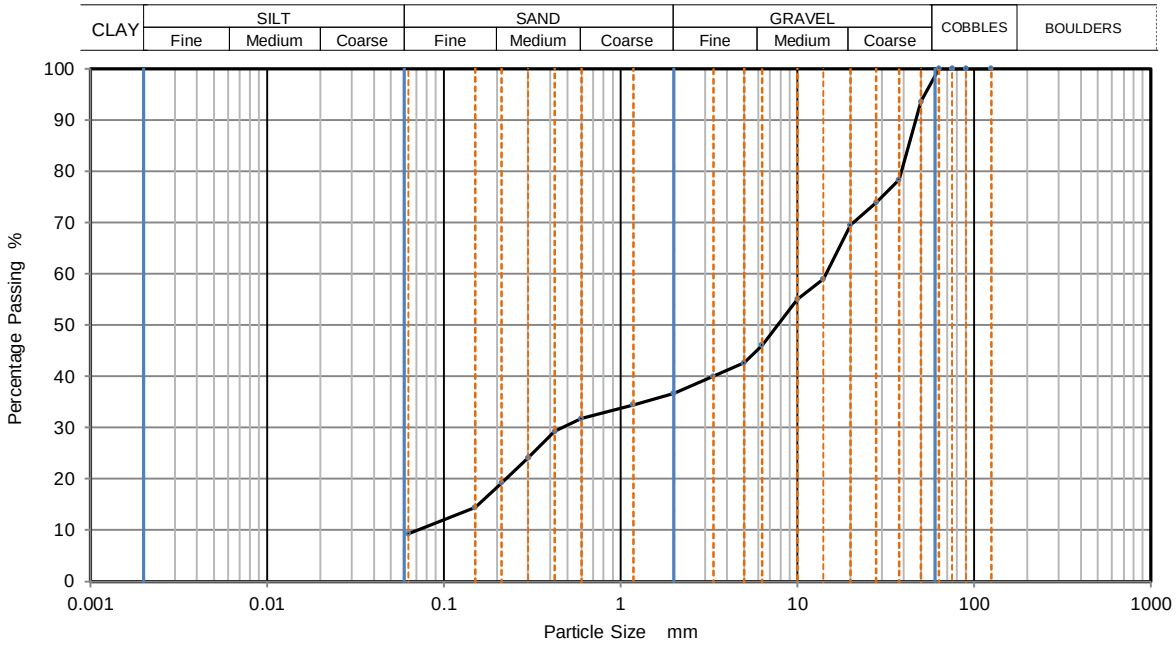
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 4 |
| Sand | 71 |
| Silt | 23 |
| Clay | 2 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.201 |
| D30 | mm | 0.0872 |
| D10 | mm | 0.0212 |
| Uniformity Coefficient | | 9.5 |
| Curvature Coefficient | | 1.8 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030272 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 15.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1030272 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 94 | | |
| 37.5 | 78 | | |
| 28 | 74 | | |
| 20 | 70 | | |
| 14 | 59 | | |
| 10 | 55 | | |
| 6.3 | 46 | | |
| 5 | 43 | | |
| 3.35 | 40 | | |
| 2 | 37 | | |
| 1.18 | 35 | | |
| 0.6 | 32 | | |
| 0.425 | 29 | | |
| 0.3 | 24 | | |
| 0.212 | 19 | | |
| 0.15 | 15 | | |
| 0.063 | 9 | | |

| Dry Mass of sample, g. | 6311 |
|---|---|

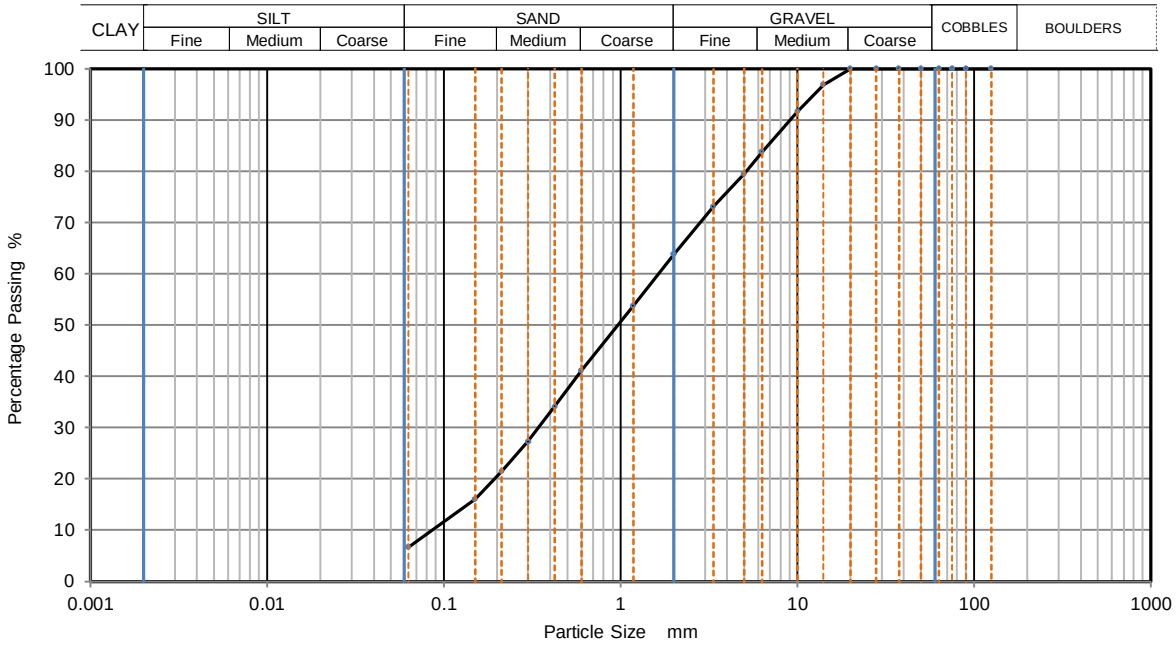
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 63 |
| Sand | 27 |
| | |
| Fines <0.063mm | 9 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 14.5 |
| D30 | mm | 0.468 |
| D10 | mm | 0.0711 |
| Uniformity Coefficient | | 200 |
| Curvature Coefficient | | 0.21 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029566 |
| Soil Description | Grey gravelly clayey SAND | | | Depth, m | 0.50 |
| Specimen Reference | 6 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1029566 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 97 | | |
| 10 | 92 | | |
| 6.3 | 84 | | |
| 5 | 80 | | |
| 3.35 | 73 | | |
| 2 | 64 | | |
| 1.18 | 54 | | |
| 0.6 | 41 | | |
| 0.425 | 34 | | |
| 0.3 | 27 | | |
| 0.212 | 22 | | |
| 0.15 | 16 | | |
| 0.063 | 7 | | |

| Dry Mass of sample, g. | 10941 |
|---|---|

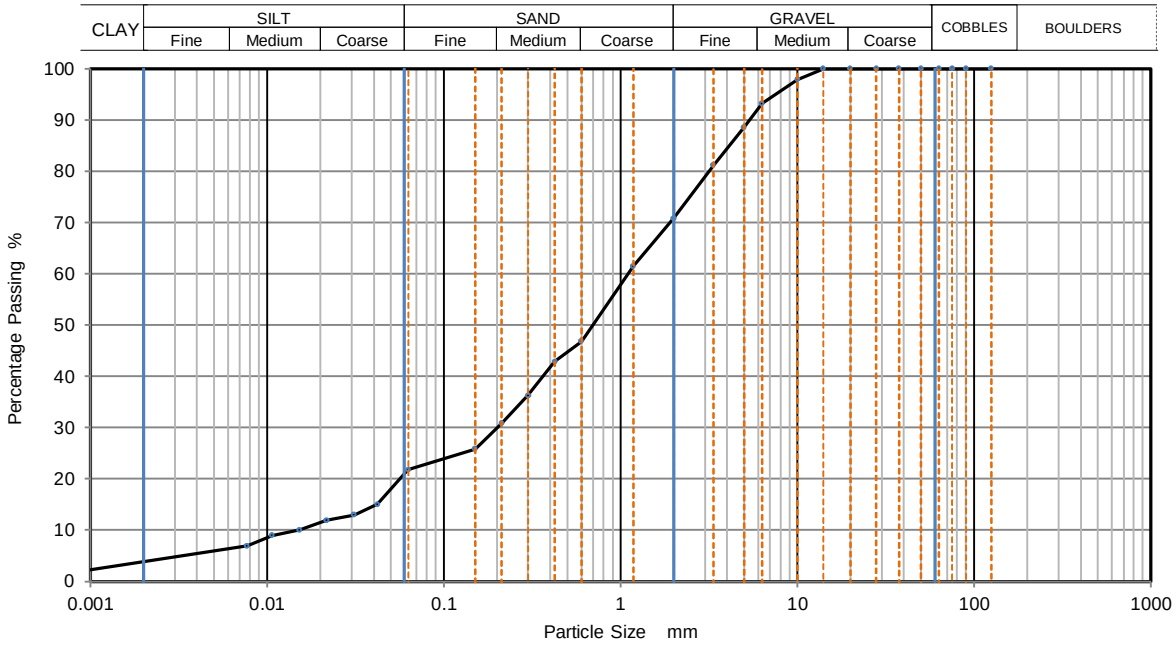
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 36 |
| Sand | 57 |
| | |
| Fines <0.063mm | 7 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.64 |
| D30 | mm | 0.345 |
| D10 | mm | 0.0853 |
| Uniformity Coefficient | | 19 |
| Curvature Coefficient | | 0.85 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029570 |
| Soil Description | Grey gravelly clayey SAND M/G | | | Depth, m | 1.20 |
| Specimen Reference | 6 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029570 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 15 |
| 90 | 100 | 0.0310 | 13 |
| 75 | 100 | 0.0217 | 12 |
| 63 | 100 | 0.0152 | 10 |
| 50 | 100 | 0.0107 | 9 |
| 37.5 | 100 | 0.0077 | 7 |
| 28 | 100 | 0.0009 | 2 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 98 | | |
| 6.3 | 93 | | |
| 5 | 89 | | |
| 3.35 | 81 | | |
| 2 | 71 | | |
| 1.18 | 62 | | |
| 0.6 | 47 | Particle density (assumed) | |
| 0.425 | 43 | 2.67 | Mg/m3 |
| 0.3 | 36 | | |
| 0.212 | 31 | | |
| 0.15 | 26 | | |
| 0.063 | 22 | | |

| Dry Mass of sample, g. | 4119 |
|---|---|

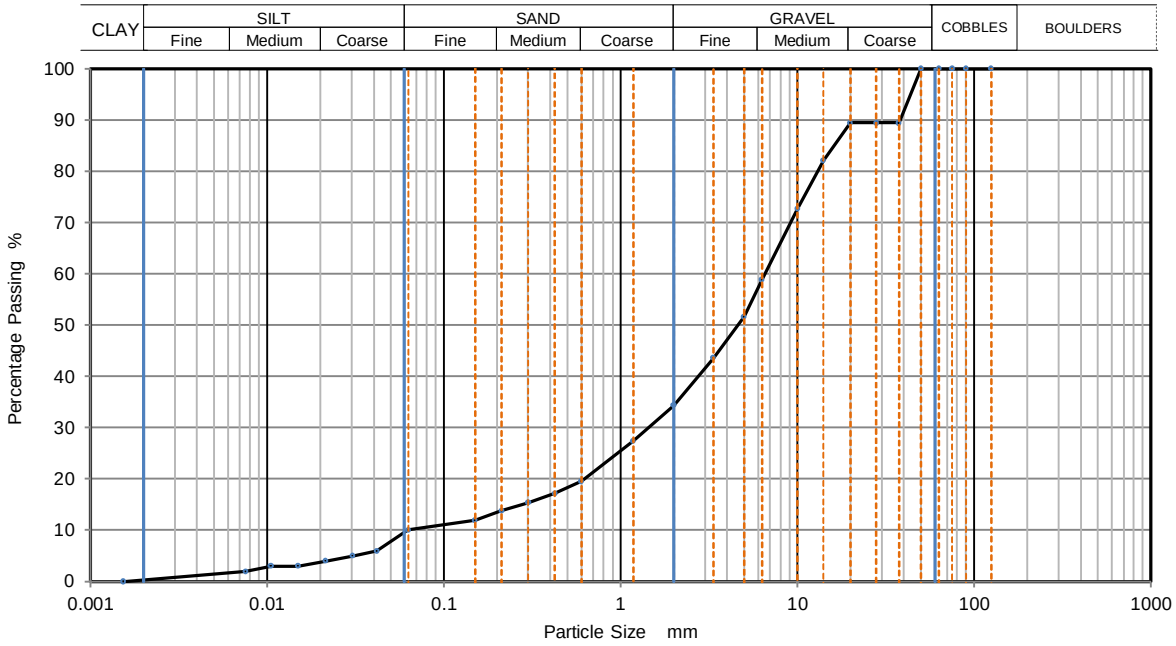
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 29 |
| Sand | 49 |
| Silt | 18 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.1 |
| D30 | mm | 0.201 |
| D10 | mm | 0.0138 |
| Uniformity Coefficient | | 80 |
| Curvature Coefficient | | 2.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | |
| Soil Description | Grey gravelly clayey SAND M/G | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | 1.2342E+13 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0417 | 6 |
| 90 | 100 | 0.0306 | 5 |
| 75 | 100 | 0.0215 | 4 |
| 63 | 100 | 0.0150 | 3 |
| 50 | 100 | 0.0105 | 3 |
| 37.5 | 89 | 0.0076 | 2 |
| 28 | 89 | 0.0015 | 0 |
| 20 | 89 | | |
| 14 | 82 | | |
| 10 | 73 | | |
| 6.3 | 59 | | |
| 5 | 52 | | |
| 3.35 | 44 | | |
| 2 | 34 | | |
| 1.18 | 27 | | |
| 0.6 | 20 | Particle density (assumed) | |
| 0.425 | 17 | 2.67 | Mg/m3 |
| 0.3 | 15 | | |
| 0.212 | 14 | | |
| 0.15 | 12 | | |
| 0.063 | 10 | | |

| Dry Mass of sample, g. | 1598 |
|---|---|

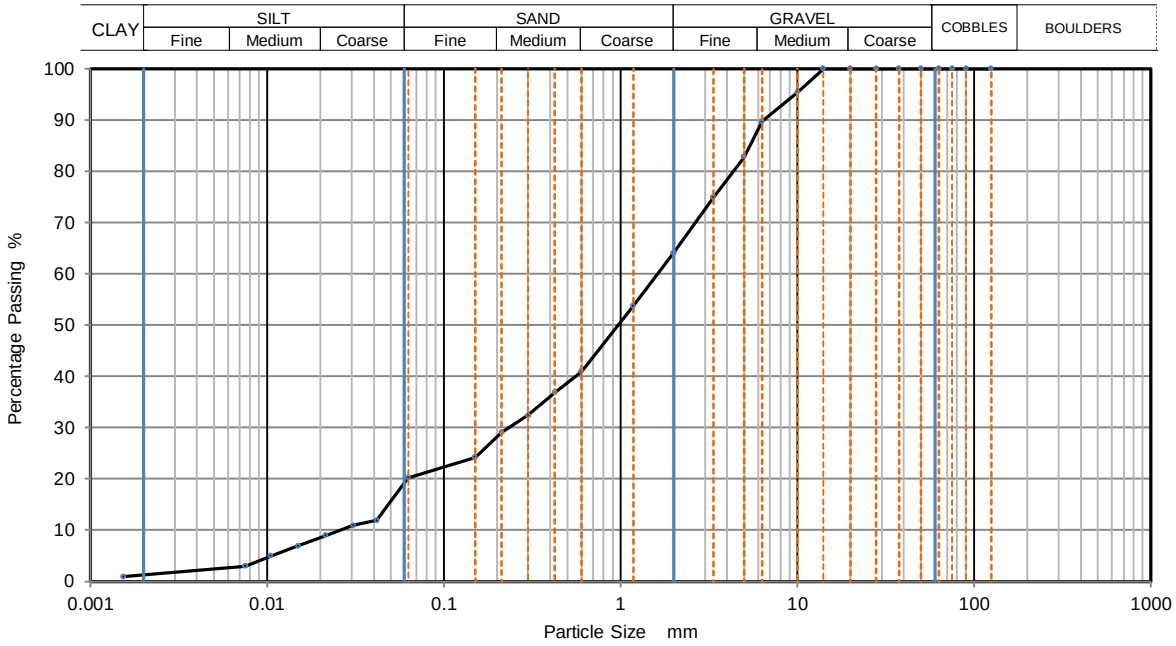
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 66 |
| Sand | 24 |
| Silt | 9 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 6.53 |
| D30 | mm | 1.44 |
| D10 | mm | 0.0628 |
| Uniformity Coefficient | | 100 |
| Curvature Coefficient | | 5 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029589 |
| Soil Description | Grey gravelly clayey SAND | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029589 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0417 | 12 |
| 90 | 100 | 0.0307 | 11 |
| 75 | 100 | 0.0215 | 9 |
| 63 | 100 | 0.0150 | 7 |
| 50 | 100 | 0.0104 | 5 |
| 37.5 | 100 | 0.0075 | 3 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 95 | | |
| 6.3 | 90 | | |
| 5 | 83 | | |
| 3.35 | 75 | | |
| 2 | 64 | | |
| 1.18 | 54 | | |
| 0.6 | 41 | Particle density (assumed) | |
| 0.425 | 37 | 2.67 | Mg/m3 |
| 0.3 | 32 | | |
| 0.212 | 29 | | |
| 0.15 | 24 | | |
| 0.063 | 20 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3145 |

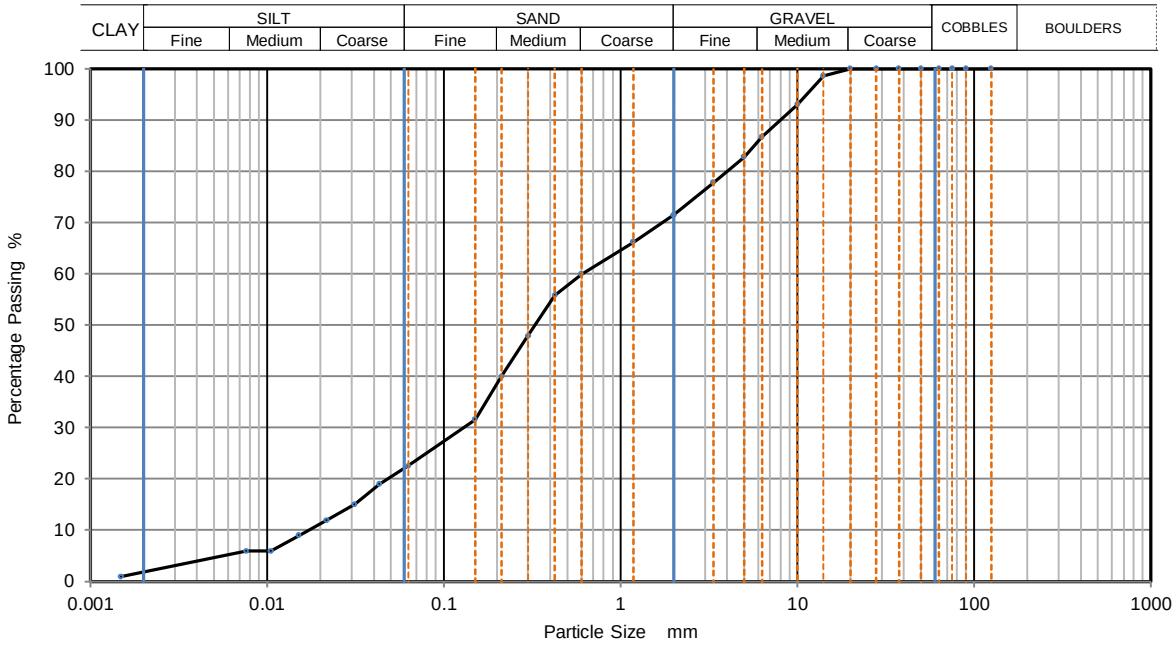
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 36 |
| Sand | 44 |
| Silt | 19 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.62 |
| D30 | mm | 0.234 |
| D10 | mm | 0.0258 |
| Uniformity Coefficient | | 63 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029595 |
| Soil Description | Grey sandy gravelly CLAY | | | Depth, m | 9.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029595 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0431 | 19 |
| 90 | 100 | 0.0313 | 15 |
| 75 | 100 | 0.0218 | 12 |
| 63 | 100 | 0.0151 | 9 |
| 50 | 100 | 0.0105 | 6 |
| 37.5 | 100 | 0.0076 | 6 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 99 | | |
| 10 | 93 | | |
| 6.3 | 87 | | |
| 5 | 83 | | |
| 3.35 | 78 | | |
| 2 | 72 | | |
| 1.18 | 66 | | |
| 0.6 | 60 | Particle density (assumed) | |
| 0.425 | 56 | 2.67 | Mg/m3 |
| 0.3 | 48 | | |
| 0.212 | 40 | | |
| 0.15 | 32 | | |
| 0.063 | 23 | | |

| Dry Mass of sample, g. | 2339 |
|---|---|

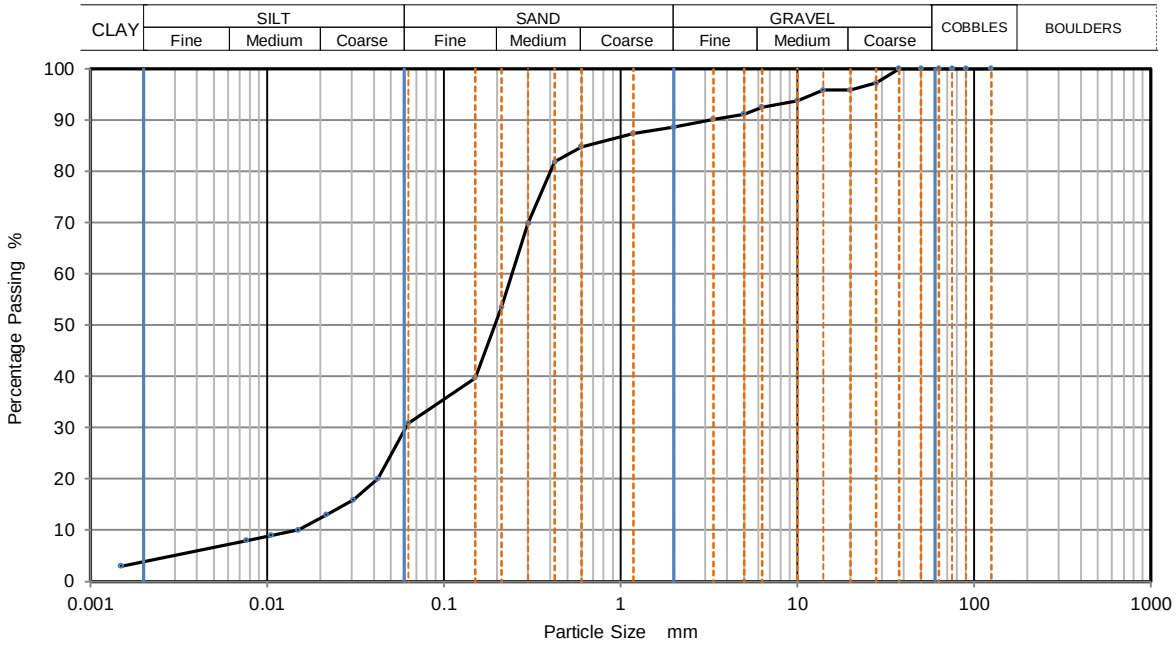
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 29 |
| Sand | 49 |
| Silt | 20 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.607 |
| D30 | mm | 0.129 |
| D10 | mm | 0.0167 |
| Uniformity Coefficient | | 36 |
| Curvature Coefficient | | 1.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029594 |
| Soil Description | Brown sandy slightly gravelly CLAY | | | Depth, m | 10.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029594 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 20 |
| 90 | 100 | 0.0308 | 16 |
| 75 | 100 | 0.0215 | 13 |
| 63 | 100 | 0.0150 | 10 |
| 50 | 100 | 0.0105 | 9 |
| 37.5 | 100 | 0.0076 | 8 |
| 28 | 97 | 0.0015 | 3 |
| 20 | 96 | | |
| 14 | 96 | | |
| 10 | 94 | | |
| 6.3 | 93 | | |
| 5 | 91 | | |
| 3.35 | 90 | | |
| 2 | 89 | | |
| 1.18 | 87 | | |
| 0.6 | 85 | Particle density (assumed) | |
| 0.425 | 82 | 2.67 Mg/m3 | |
| 0.3 | 70 | | |
| 0.212 | 54 | | |
| 0.15 | 40 | | |
| 0.063 | 31 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3996 |

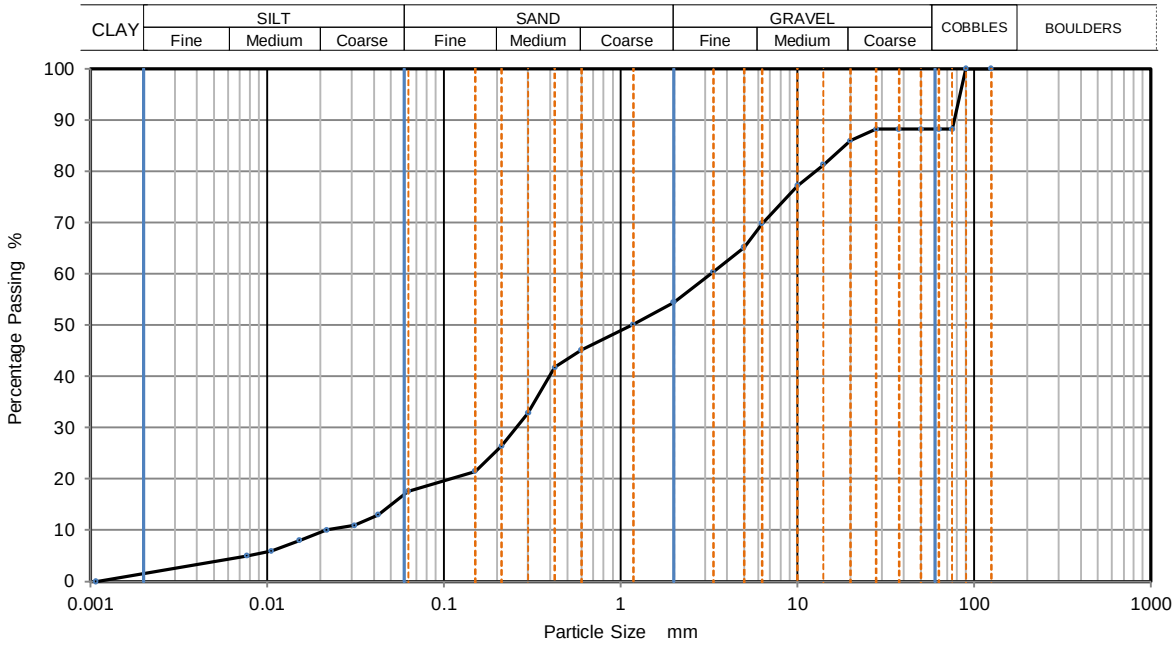
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 11 |
| Sand | 58 |
| Silt | 27 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.243 |
| D30 | mm | 0.061 |
| D10 | mm | 0.0137 |
| Uniformity Coefficient | | 18 |
| Curvature Coefficient | | 1.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH306 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031313 |
| Soil Description | sand + gravel WITH COBBLE | | | Depth, m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031313 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 13 |
| 90 | 100 | 0.0312 | 11 |
| 75 | 88 | 0.0218 | 10 |
| 63 | 88 | 0.0152 | 8 |
| 50 | 88 | 0.0106 | 6 |
| 37.5 | 88 | 0.0077 | 5 |
| 28 | 88 | 0.0011 | 0 |
| 20 | 86 | | |
| 14 | 81 | | |
| 10 | 77 | | |
| 6.3 | 70 | | |
| 5 | 65 | | |
| 3.35 | 60 | | |
| 2 | 55 | | |
| 1.18 | 50 | | |
| 0.6 | 45 | Particle density (assumed) | |
| 0.425 | 42 | 2.67 | Mg/m3 |
| 0.3 | 33 | | |
| 0.212 | 26 | | |
| 0.15 | 22 | | |
| 0.063 | 18 | | |

| Dry Mass of sample, g. | 8686 |
|---|---|

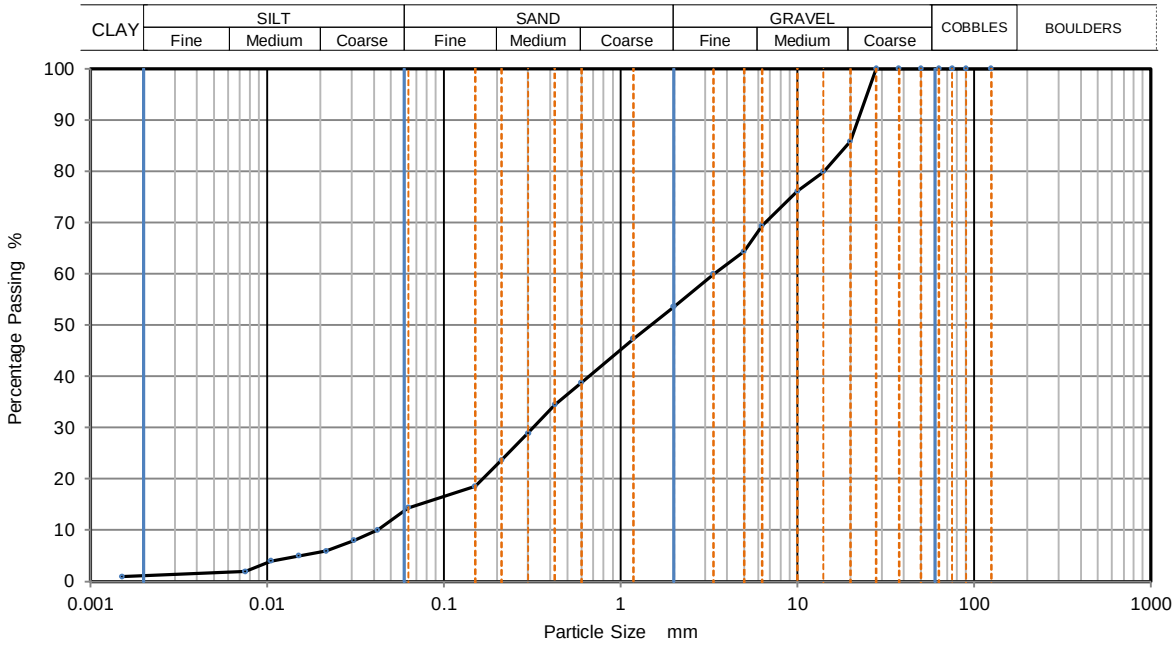
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 12 |
| Gravel | 34 |
| Sand | 37 |
| Silt | 16 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 3.23 |
| D30 | mm | 0.256 |
| D10 | mm | 0.0241 |
| Uniformity Coefficient | | 130 |
| Curvature Coefficient | | 0.84 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH306 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031326 |
| Soil Description | Brown clayey gravelly SAND | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031326 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 10 |
| 90 | 100 | 0.0309 | 8 |
| 75 | 100 | 0.0215 | 6 |
| 63 | 100 | 0.0151 | 5 |
| 50 | 100 | 0.0105 | 4 |
| 37.5 | 100 | 0.0075 | 2 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 86 | | |
| 14 | 80 | | |
| 10 | 76 | | |
| 6.3 | 69 | | |
| 5 | 64 | | |
| 3.35 | 60 | | |
| 2 | 54 | | |
| 1.18 | 47 | | |
| 0.6 | 39 | Particle density (assumed) | |
| 0.425 | 35 | 2.67 Mg/m3 | |
| 0.3 | 29 | | |
| 0.212 | 24 | | |
| 0.15 | 19 | | |
| 0.063 | 14 | | |

| Dry Mass of sample, g. | 3121 |
|---|---|

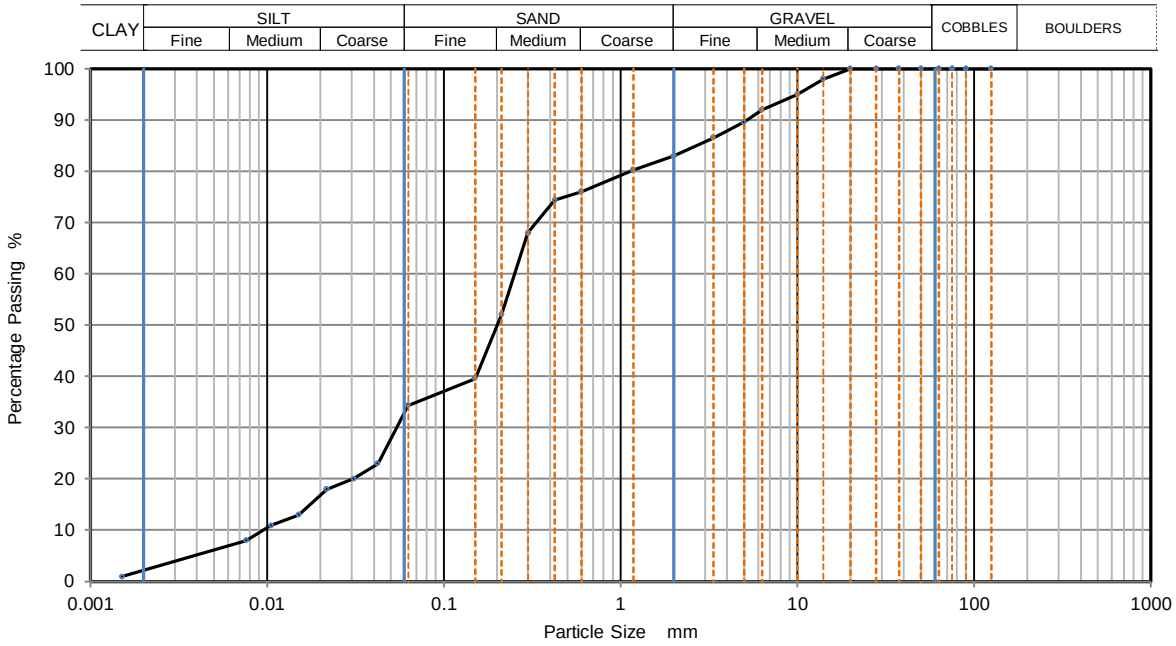
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 46 |
| Sand | 39 |
| Silt | 13 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 3.37 |
| D30 | mm | 0.321 |
| D10 | mm | 0.0438 |
| Uniformity Coefficient | | 77 |
| Curvature Coefficient | | 0.7 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH306 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031332 |
| Soil Description | Brown slightly gravelly clayey SAND | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031332 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 23 |
| 90 | 100 | 0.0309 | 20 |
| 75 | 100 | 0.0217 | 18 |
| 63 | 100 | 0.0151 | 13 |
| 50 | 100 | 0.0106 | 11 |
| 37.5 | 100 | 0.0076 | 8 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 98 | | |
| 10 | 95 | | |
| 6.3 | 92 | | |
| 5 | 90 | | |
| 3.35 | 87 | | |
| 2 | 83 | | |
| 1.18 | 80 | | |
| 0.6 | 76 | Particle density (assumed) | |
| 0.425 | 74 | 2.67 Mg/m3 | |
| 0.3 | 68 | | |
| 0.212 | 52 | | |
| 0.15 | 40 | | |
| 0.063 | 34 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3452 |

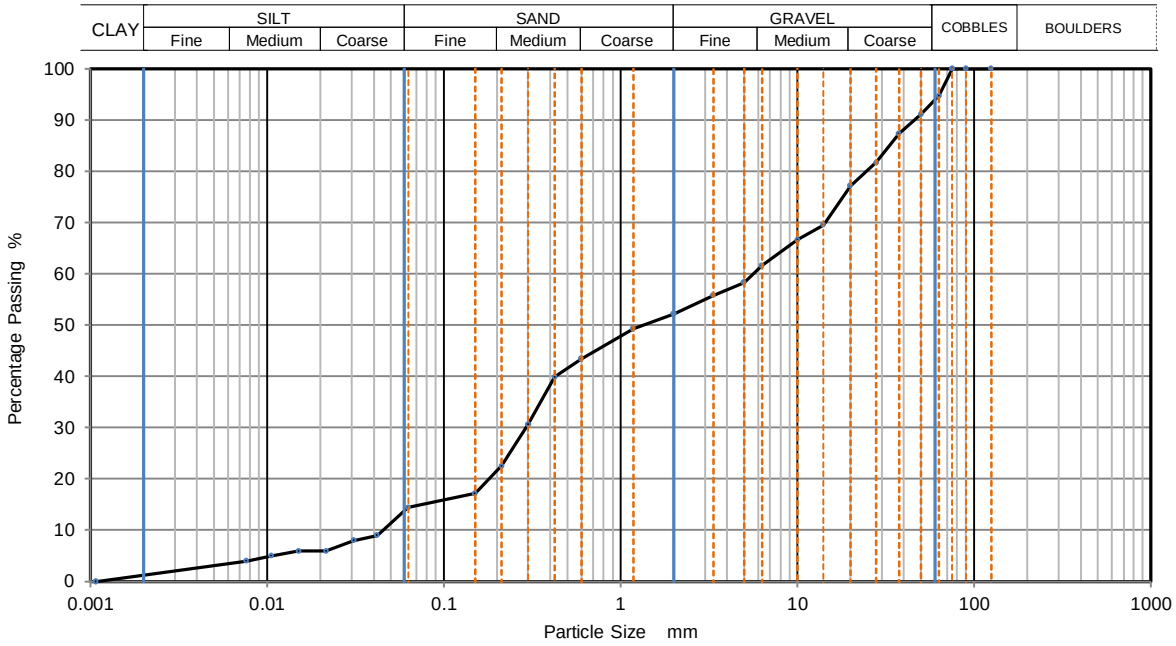
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 17 |
| Sand | 49 |
| Silt | 32 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.252 |
| D30 | mm | 0.0538 |
| D10 | mm | 0.00958 |
| Uniformity Coefficient | | 26 |
| Curvature Coefficient | | 1.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH307 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029725 |
| Soil Description | Brown clayey gravelly SAND with cobbles | | | Depth, m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029725 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0418 | 9 |
| 90 | 100 | 0.0309 | 8 |
| 75 | 100 | 0.0215 | 6 |
| 63 | 95 | 0.0151 | 6 |
| 50 | 91 | 0.0106 | 5 |
| 37.5 | 87 | 0.0076 | 4 |
| 28 | 82 | 0.0011 | 0 |
| 20 | 77 | | |
| 14 | 70 | | |
| 10 | 67 | | |
| 6.3 | 62 | | |
| 5 | 58 | | |
| 3.35 | 56 | | |
| 2 | 52 | | |
| 1.18 | 49 | | |
| 0.6 | 43 | Particle density (assumed) | |
| 0.425 | 40 | 2.67 Mg/m3 | |
| 0.3 | 31 | | |
| 0.212 | 23 | | |
| 0.15 | 17 | | |
| 0.063 | 15 | | |

| Dry Mass of sample, g. | 11272 |
|---|---|

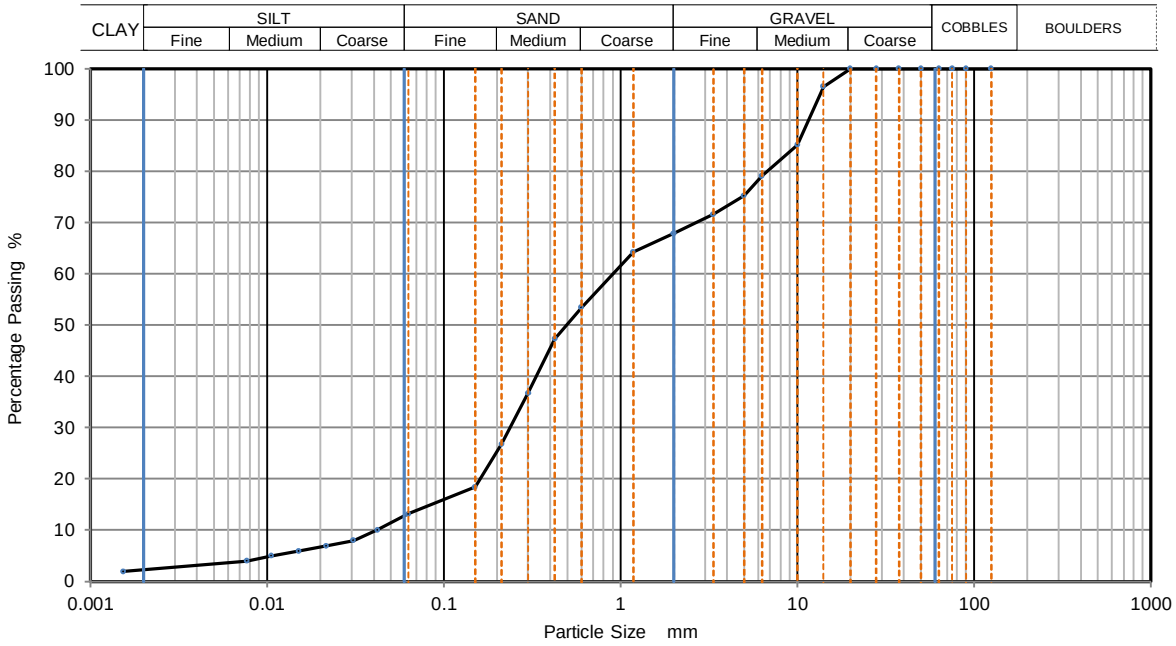
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 5 |
| Gravel | 42 |
| Sand | 38 |
| Silt | 13 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 5.63 |
| D30 | mm | 0.292 |
| D10 | mm | 0.0456 |
| Uniformity Coefficient | | 120 |
| Curvature Coefficient | | 0.33 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH307 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029732 |
| Soil Description | Brown clayey SAND + GRAVEL | | | Depth, m | 3.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | D |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029732 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 10 |
| 90 | 100 | 0.0308 | 8 |
| 75 | 100 | 0.0216 | 7 |
| 63 | 100 | 0.0151 | 6 |
| 50 | 100 | 0.0106 | 5 |
| 37.5 | 100 | 0.0077 | 4 |
| 28 | 100 | 0.0015 | 2 |
| 20 | 100 | | |
| 14 | 97 | | |
| 10 | 85 | | |
| 6.3 | 79 | | |
| 5 | 75 | | |
| 3.35 | 72 | | |
| 2 | 68 | | |
| 1.18 | 64 | | |
| 0.6 | 53 | Particle density (assumed) | |
| 0.425 | 47 | 2.67 | Mg/m3 |
| 0.3 | 37 | | |
| 0.212 | 27 | | |
| 0.15 | 18 | | |
| 0.063 | 13 | | |

| Dry Mass of sample, g. | 247 |
|---|---|

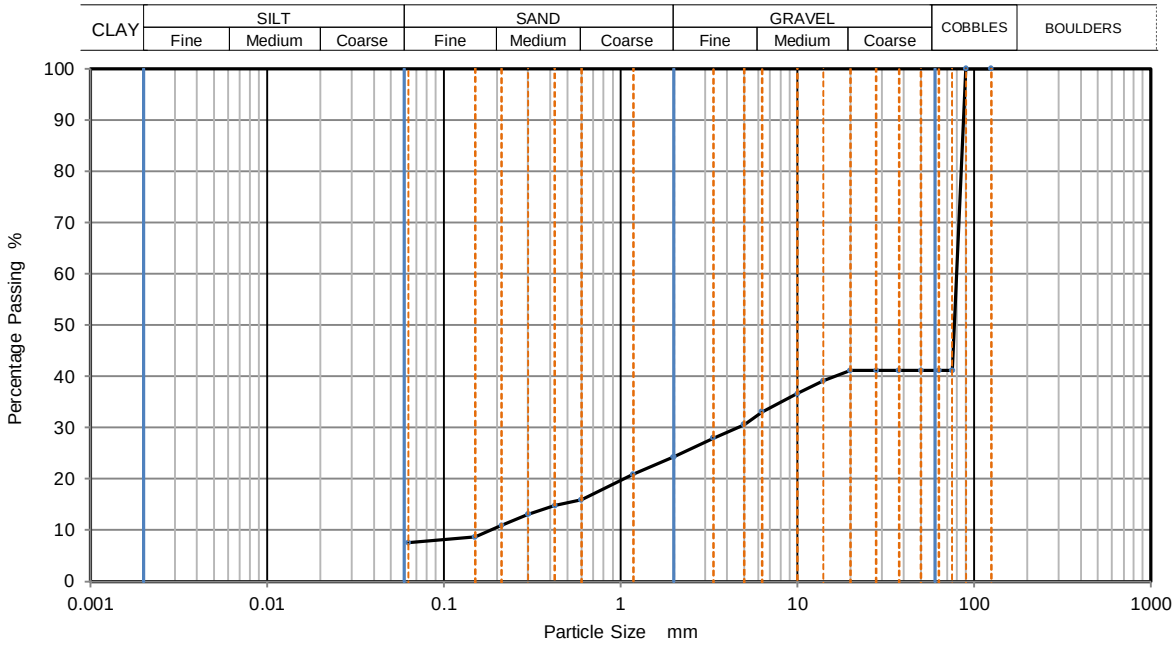
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 32 |
| Sand | 55 |
| Silt | 11 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.908 |
| D30 | mm | 0.237 |
| D10 | mm | 0.0443 |
| Uniformity Coefficient | | 20 |
| Curvature Coefficient | | 1.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH308 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031309 |
| Soil Description | Sand and gravel + cobble | | | Depth, m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031309 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 41 | | |
| 63 | 41 | | |
| 50 | 41 | | |
| 37.5 | 41 | | |
| 28 | 41 | | |
| 20 | 41 | | |
| 14 | 39 | | |
| 10 | 37 | | |
| 6.3 | 33 | | |
| 5 | 31 | | |
| 3.35 | 28 | | |
| 2 | 24 | | |
| 1.18 | 21 | | |
| 0.6 | 16 | | |
| 0.425 | 15 | | |
| 0.3 | 13 | | |
| 0.212 | 11 | | |
| 0.15 | 9 | | |
| 0.063 | 8 | | |

| Dry Mass of sample, g. | 1916 |
|---|---|

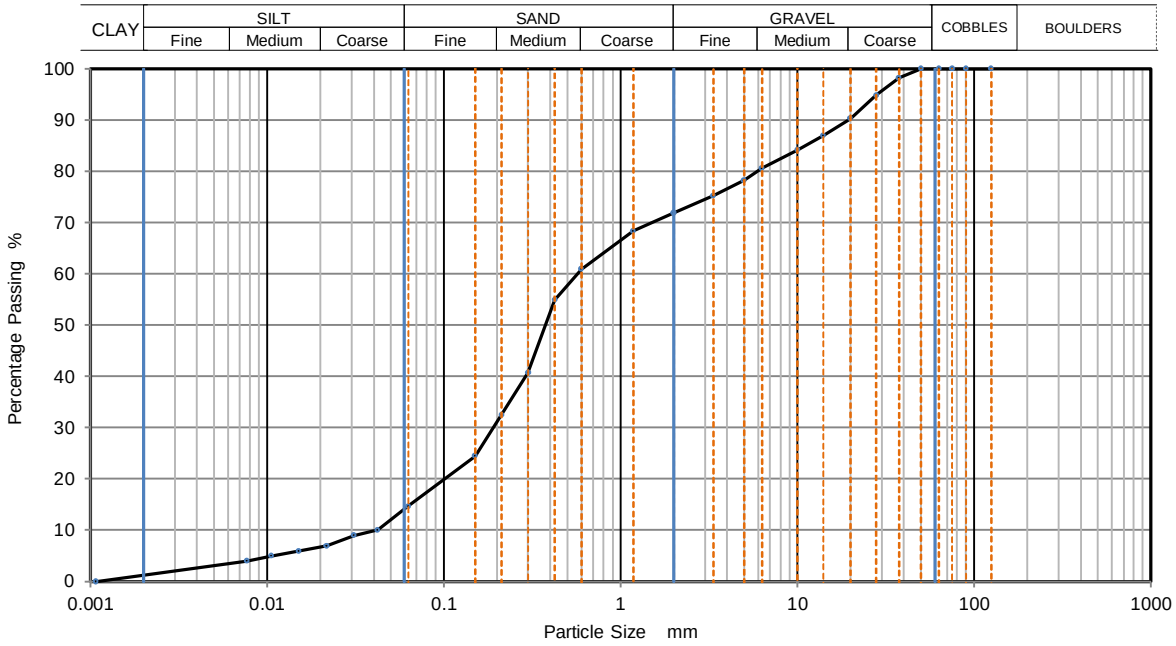
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 59 |
| Gravel | 17 |
| Sand | 17 |
| | |
| Fines <0.063mm | 8 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 79.5 |
| D30 | mm | 4.56 |
| D10 | mm | 0.183 |
| Uniformity Coefficient | | 440 |
| Curvature Coefficient | | 1.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH309 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030339 |
| Soil Description | Brown gravelly SAND + COBBLES | | | Depth, m | 0.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030339 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 10 |
| 90 | 100 | 0.0311 | 9 |
| 75 | 100 | 0.0217 | 7 |
| 63 | 100 | 0.0151 | 6 |
| 50 | 100 | 0.0106 | 5 |
| 37.5 | 98 | 0.0077 | 4 |
| 28 | 95 | 0.0011 | 0 |
| 20 | 90 | | |
| 14 | 87 | | |
| 10 | 84 | | |
| 6.3 | 81 | | |
| 5 | 78 | | |
| 3.35 | 75 | | |
| 2 | 72 | | |
| 1.18 | 68 | | |
| 0.6 | 61 | Particle density (assumed) | |
| 0.425 | 55 | 2.67 | Mg/m3 |
| 0.3 | 41 | | |
| 0.212 | 33 | | |
| 0.15 | 25 | | |
| 0.063 | 15 | | |

| Dry Mass of sample, g. | 15776 |
|---|---|

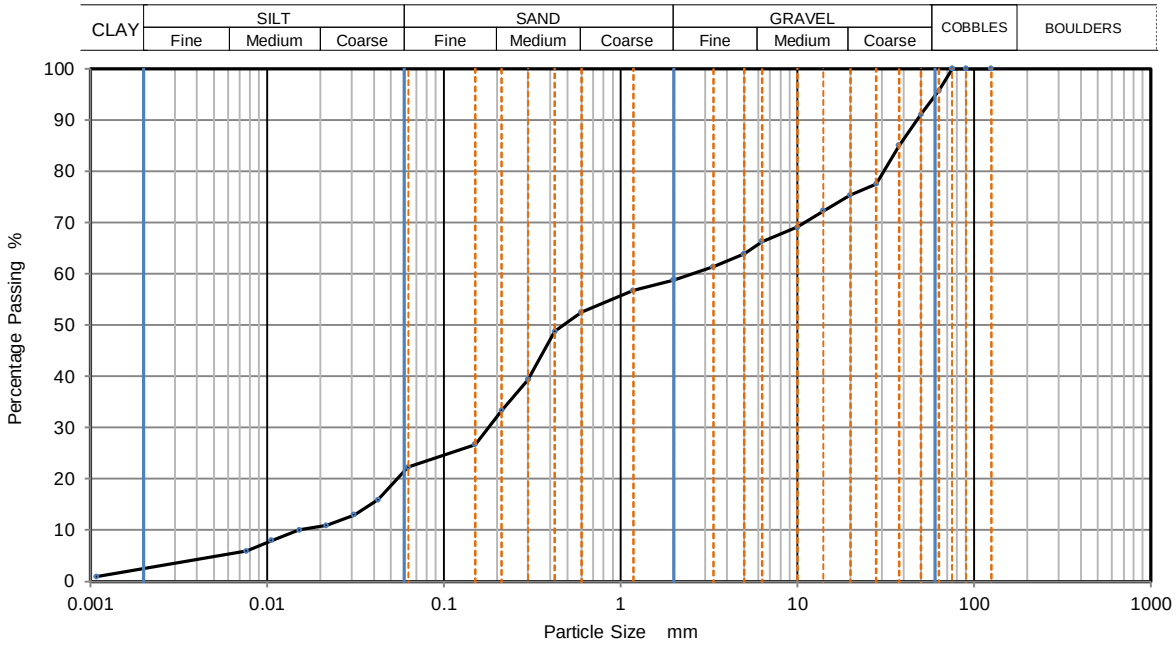
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 28 |
| Sand | 57 |
| Silt | 13 |
| Clay | 2 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.571 |
| D30 | mm | 0.19 |
| D10 | mm | 0.0436 |
| Uniformity Coefficient | | 13 |
| Curvature Coefficient | | 1.5 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH309 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030344 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth, m | 1.20 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030344 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0423 | 16 |
| 90 | 100 | 0.0311 | 13 |
| 75 | 100 | 0.0216 | 11 |
| 63 | 96 | 0.0152 | 10 |
| 50 | 91 | 0.0106 | 8 |
| 37.5 | 85 | 0.0076 | 6 |
| 28 | 78 | 0.0011 | 1 |
| 20 | 75 | | |
| 14 | 72 | | |
| 10 | 69 | | |
| 6.3 | 66 | | |
| 5 | 64 | | |
| 3.35 | 61 | | |
| 2 | 59 | | |
| 1.18 | 57 | | |
| 0.6 | 53 | Particle density (assumed) | |
| 0.425 | 49 | 2.67 Mg/m3 | |
| 0.3 | 39 | | |
| 0.212 | 33 | | |
| 0.15 | 27 | | |
| 0.063 | 22 | | |

| Dry Mass of sample, g. | 11613 |
|---|---|

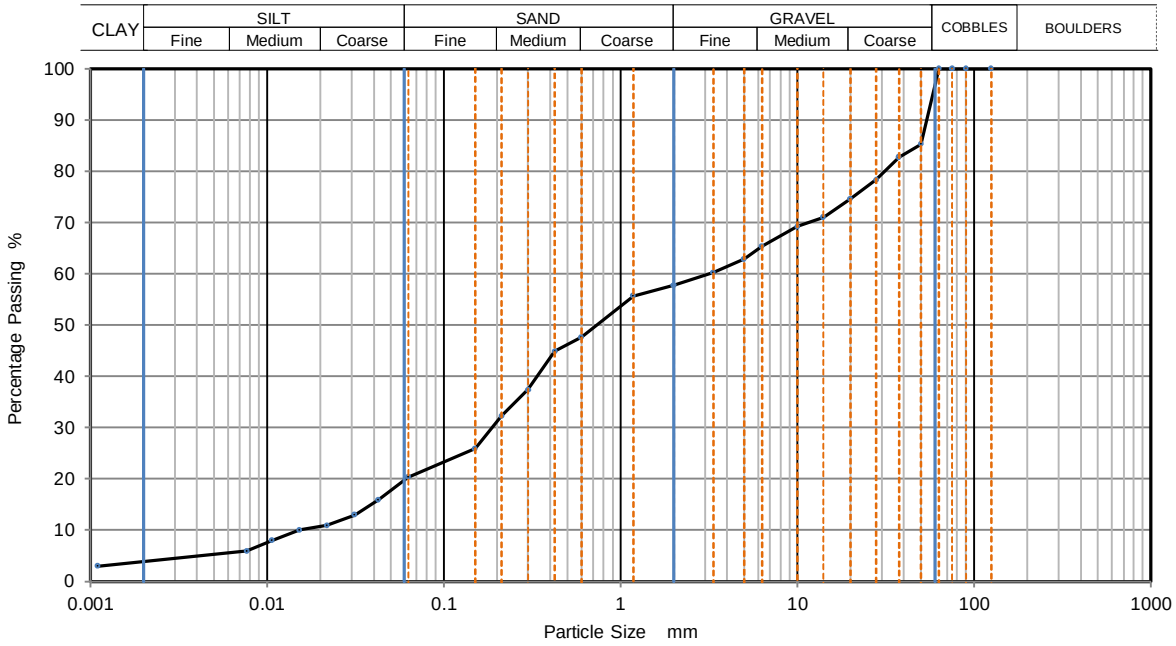
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 4 |
| Gravel | 37 |
| Sand | 37 |
| Silt | 20 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.53 |
| D30 | mm | 0.178 |
| D10 | mm | 0.0157 |
| Uniformity Coefficient | | 160 |
| Curvature Coefficient | | 0.8 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH309 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030347 |
| Soil Description | Brown gravelly sandy CLAY + COBBLES | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030347 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 16 |
| 90 | 100 | 0.0313 | 13 |
| 75 | 100 | 0.0219 | 11 |
| 63 | 100 | 0.0153 | 10 |
| 50 | 85 | 0.0107 | 8 |
| 37.5 | 83 | 0.0077 | 6 |
| 28 | 78 | 0.0011 | 3 |
| 20 | 75 | | |
| 14 | 71 | | |
| 10 | 69 | | |
| 6.3 | 65 | | |
| 5 | 63 | | |
| 3.35 | 60 | | |
| 2 | 58 | | |
| 1.18 | 56 | | |
| 0.6 | 48 | Particle density (assumed) | |
| 0.425 | 45 | 2.67 Mg/m3 | |
| 0.3 | 37 | | |
| 0.212 | 32 | | |
| 0.15 | 26 | | |
| 0.063 | 20 | | |

| Dry Mass of sample, g. | 8397 |
|---|---|

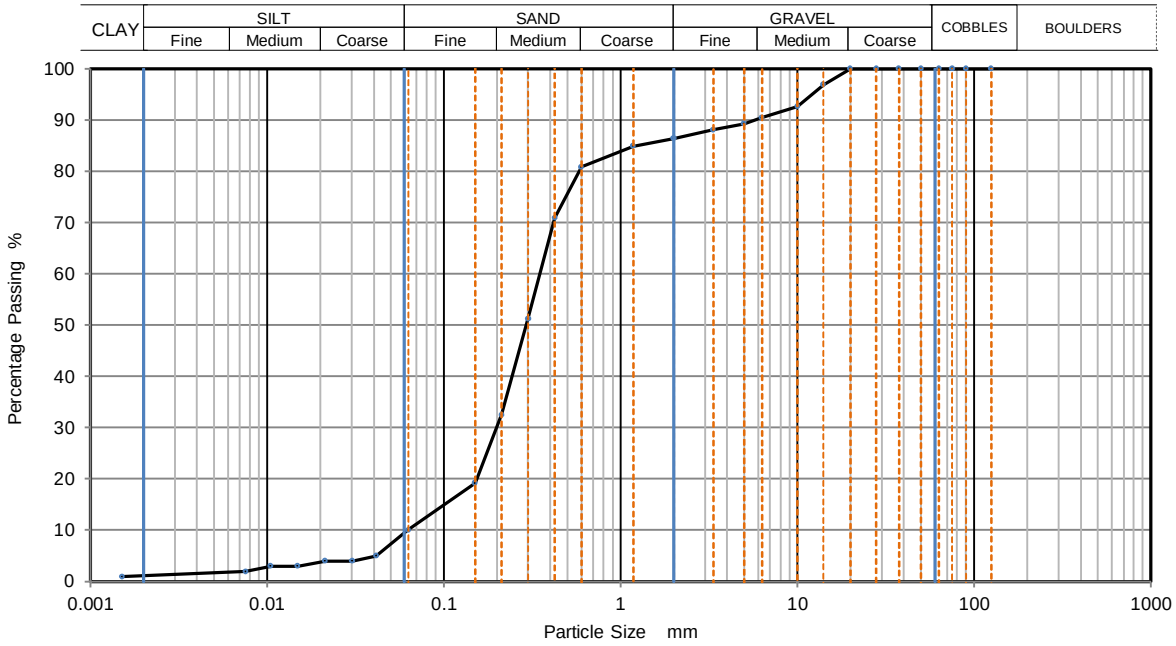
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 42 |
| Sand | 37 |
| Silt | 16 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 3.16 |
| D30 | mm | 0.187 |
| D10 | mm | 0.0165 |
| Uniformity Coefficient | | 190 |
| Curvature Coefficient | | 0.67 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH310 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031407 |
| Soil Description | Brown gravelly SAND | | | Depth, m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | D |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031407 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0414 | 5 |
| 90 | 100 | 0.0304 | 4 |
| 75 | 100 | 0.0213 | 4 |
| 63 | 100 | 0.0149 | 3 |
| 50 | 100 | 0.0105 | 3 |
| 37.5 | 100 | 0.0076 | 2 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 100 | | |
| 14 | 97 | | |
| 10 | 93 | | |
| 6.3 | 91 | | |
| 5 | 89 | | |
| 3.35 | 88 | | |
| 2 | 86 | | |
| 1.18 | 85 | | |
| 0.6 | 81 | Particle density (assumed) | |
| 0.425 | 71 | 2.67 | Mg/m3 |
| 0.3 | 51 | | |
| 0.212 | 33 | | |
| 0.15 | 19 | | |
| 0.063 | 10 | | |

| Dry Mass of sample, g. | 658 |
|---|---|

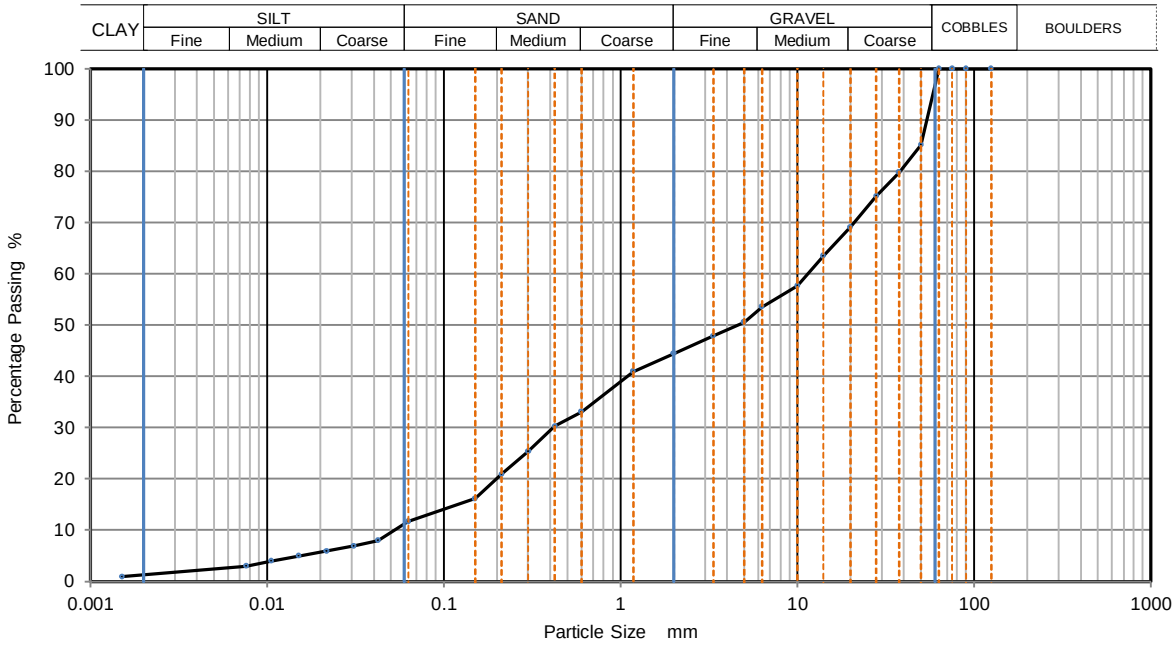
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 14 |
| Sand | 77 |
| Silt | 9 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.35 |
| D30 | mm | 0.199 |
| D10 | mm | 0.0632 |
| Uniformity Coefficient | | 5.5 |
| Curvature Coefficient | | 1.8 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH310 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | 5 |
| Soil Description | Brown clayey gravelly SAND | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1032762 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 8 |
| 90 | 100 | 0.0311 | 7 |
| 75 | 100 | 0.0217 | 6 |
| 63 | 100 | 0.0151 | 5 |
| 50 | 85 | 0.0106 | 4 |
| 37.5 | 80 | 0.0076 | 3 |
| 28 | 75 | 0.0015 | 1 |
| 20 | 69 | | |
| 14 | 64 | | |
| 10 | 58 | | |
| 6.3 | 54 | | |
| 5 | 51 | | |
| 3.35 | 48 | | |
| 2 | 45 | | |
| 1.18 | 41 | | |
| 0.6 | 33 | Particle density (assumed) | |
| 0.425 | 30 | 2.67 | Mg/m3 |
| 0.3 | 25 | | |
| 0.212 | 21 | | |
| 0.15 | 16 | | |
| 0.063 | 12 | | |

| Dry Mass of sample, g. | 2426 |
|---|---|

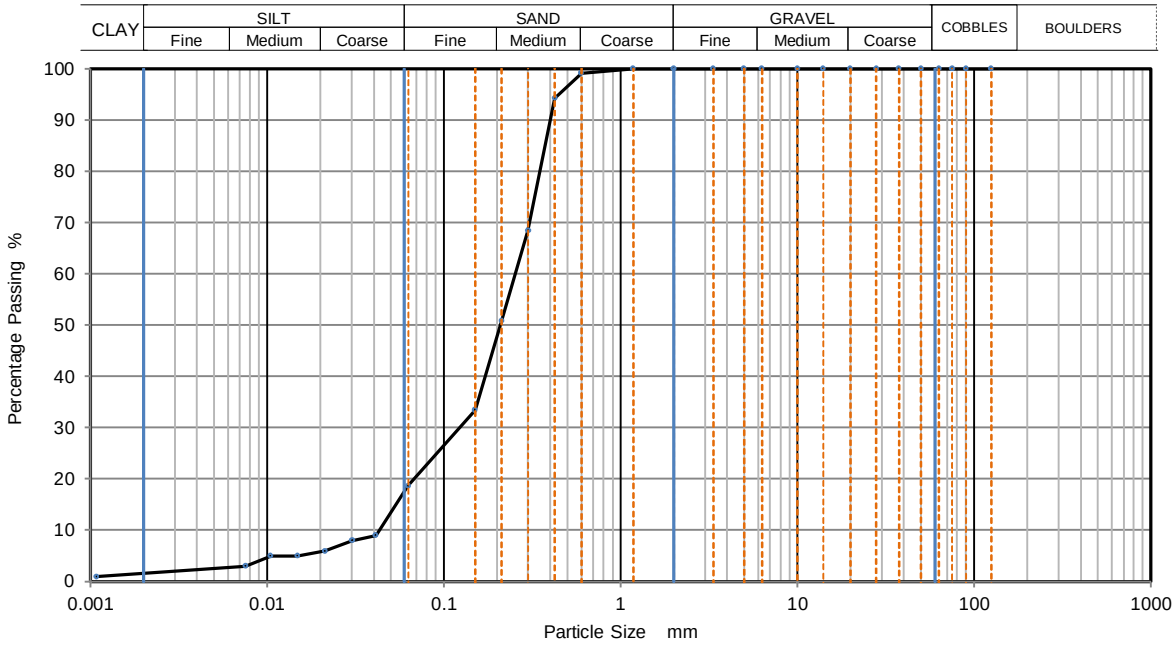
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 56 |
| Sand | 33 |
| Silt | 11 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 11.4 |
| D30 | mm | 0.416 |
| D10 | mm | 0.0514 |
| Uniformity Coefficient | | 220 |
| Curvature Coefficient | | 0.29 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH310 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | 14 |
| Soil Description | Brown SAND | | | Depth, m | 4.60 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1032764 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0413 | 9 |
| 90 | 100 | 0.0304 | 8 |
| 75 | 100 | 0.0212 | 6 |
| 63 | 100 | 0.0149 | 5 |
| 50 | 100 | 0.0105 | 5 |
| 37.5 | 100 | 0.0076 | 3 |
| 28 | 100 | 0.0011 | 1 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 99 | Particle density (assumed) | |
| 0.425 | 94 | 2.67 Mg/m3 | |
| 0.3 | 68 | | |
| 0.212 | 51 | | |
| 0.15 | 33 | | |
| 0.063 | 19 | | |

| Dry Mass of sample, g. | 2123 |
|---|---|

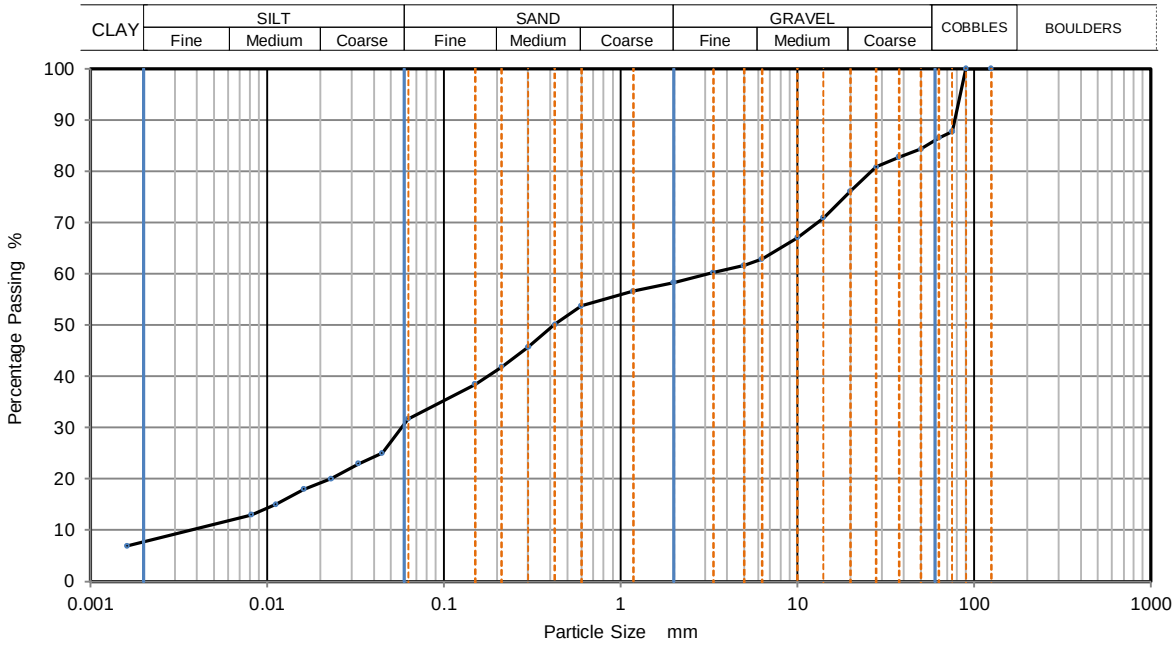
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 0 |
| Sand | 81 |
| Silt | 17 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.254 |
| D30 | mm | 0.123 |
| D10 | mm | 0.0426 |
| Uniformity Coefficient | | 6 |
| Curvature Coefficient | | 1.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH311 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031293 |
| Soil Description | Brown sandy gravelly CLAY M/G with cobbles | | | Depth, m | 0.50 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031293 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0446 | 25 |
| 90 | 100 | 0.0329 | 23 |
| 75 | 88 | 0.0230 | 20 |
| 63 | 87 | 0.0161 | 18 |
| 50 | 84 | 0.0113 | 15 |
| 37.5 | 83 | 0.0082 | 13 |
| 28 | 81 | 0.0016 | 7 |
| 20 | 76 | | |
| 14 | 71 | | |
| 10 | 67 | | |
| 6.3 | 63 | | |
| 5 | 62 | | |
| 3.35 | 60 | | |
| 2 | 58 | | |
| 1.18 | 57 | | |
| 0.6 | 54 | Particle density (assumed) | |
| 0.425 | 50 | 2.67 | Mg/m3 |
| 0.3 | 46 | | |
| 0.212 | 42 | | |
| 0.15 | 39 | | |
| 0.063 | 32 | | |

| Dry Mass of sample, g. | 13848 |
|---|---|

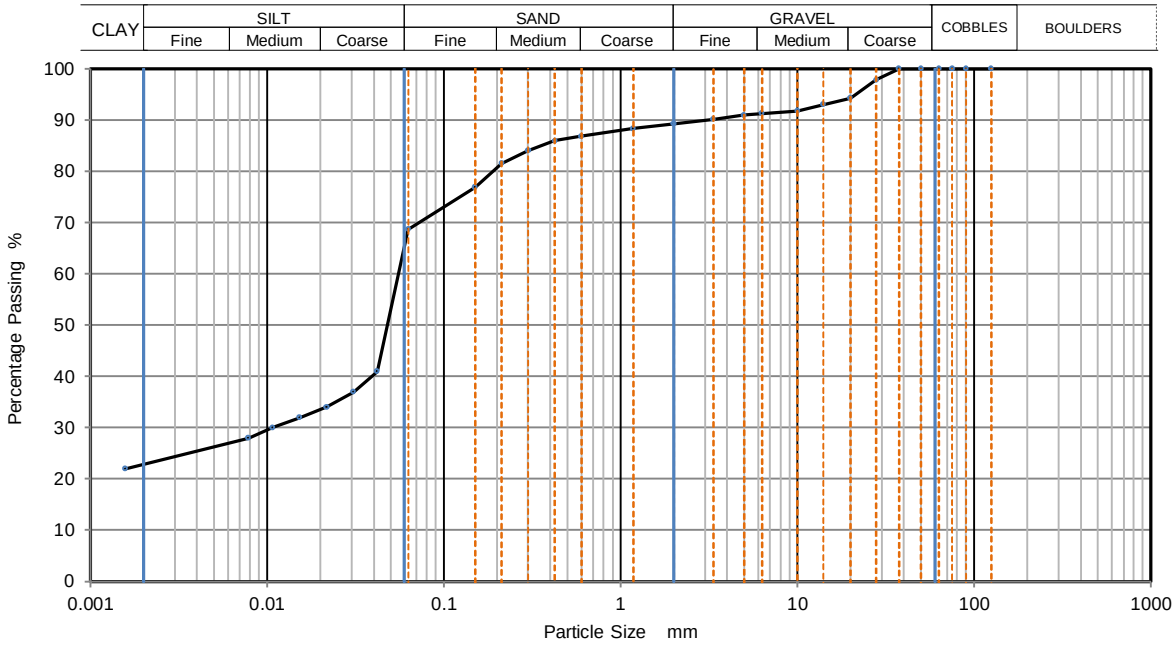
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 14 |
| Gravel | 28 |
| Sand | 27 |
| Silt | 24 |
| Clay | 8 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 3.12 |
| D30 | mm | 0.0579 |
| D10 | mm | 0.00377 |
| Uniformity Coefficient | | 830 |
| Curvature Coefficient | | 0.28 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH311 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029661 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 3.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029661 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0418 | 41 |
| 90 | 100 | 0.0308 | 37 |
| 75 | 100 | 0.0217 | 34 |
| 63 | 100 | 0.0153 | 32 |
| 50 | 100 | 0.0108 | 30 |
| 37.5 | 100 | 0.0078 | 28 |
| 28 | 98 | 0.0016 | 22 |
| 20 | 94 | | |
| 14 | 93 | | |
| 10 | 92 | | |
| 6.3 | 91 | | |
| 5 | 91 | | |
| 3.35 | 90 | | |
| 2 | 89 | | |
| 1.18 | 88 | | |
| 0.6 | 87 | Particle density (assumed) | |
| 0.425 | 86 | 2.67 | Mg/m3 |
| 0.3 | 84 | | |
| 0.212 | 82 | | |
| 0.15 | 77 | | |
| 0.063 | 69 | | |

| Dry Mass of sample, g. | 5157 |
|---|---|

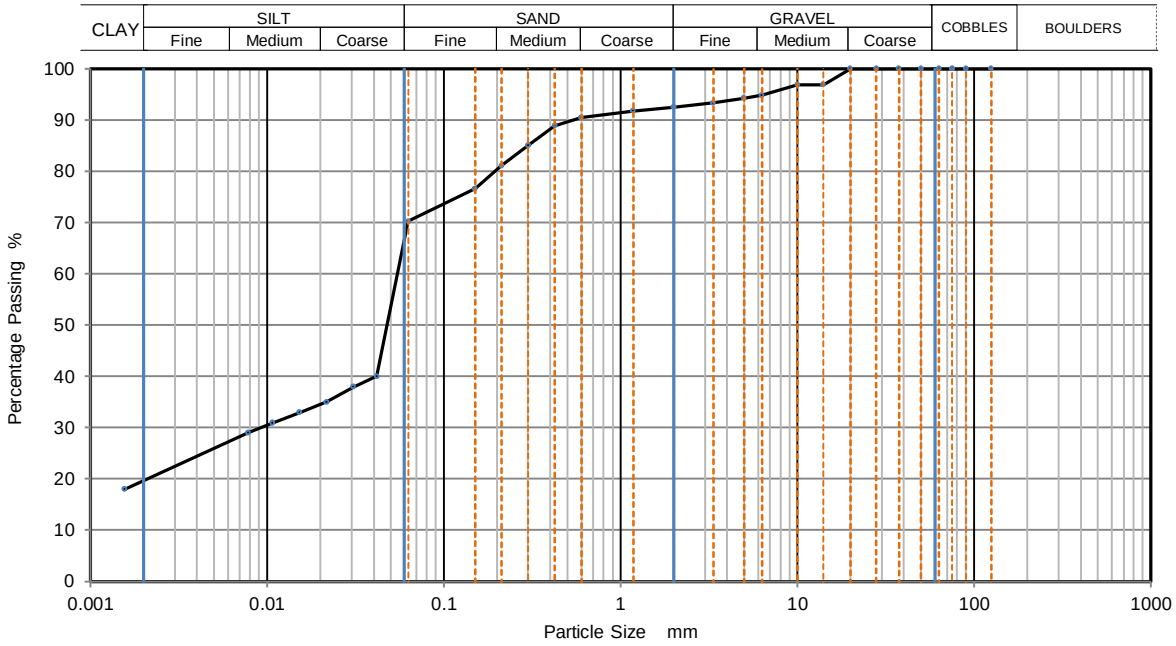
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 11 |
| Sand | 21 |
| Silt | 46 |
| Clay | 23 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0554 |
| D30 | mm | 0.0106 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH311 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029666 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 5.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029666 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0416 | 40 |
| 90 | 100 | 0.0308 | 38 |
| 75 | 100 | 0.0217 | 35 |
| 63 | 100 | 0.0153 | 33 |
| 50 | 100 | 0.0108 | 31 |
| 37.5 | 100 | 0.0078 | 29 |
| 28 | 100 | 0.0016 | 18 |
| 20 | 100 | | |
| 14 | 97 | | |
| 10 | 97 | | |
| 6.3 | 95 | | |
| 5 | 94 | | |
| 3.35 | 93 | | |
| 2 | 93 | | |
| 1.18 | 92 | | |
| 0.6 | 91 | Particle density (assumed) | |
| 0.425 | 89 | 2.67 | Mg/m3 |
| 0.3 | 85 | | |
| 0.212 | 81 | | |
| 0.15 | 77 | | |
| 0.063 | 70 | | |

| Dry Mass of sample, g. | 6479 |
|---|---|

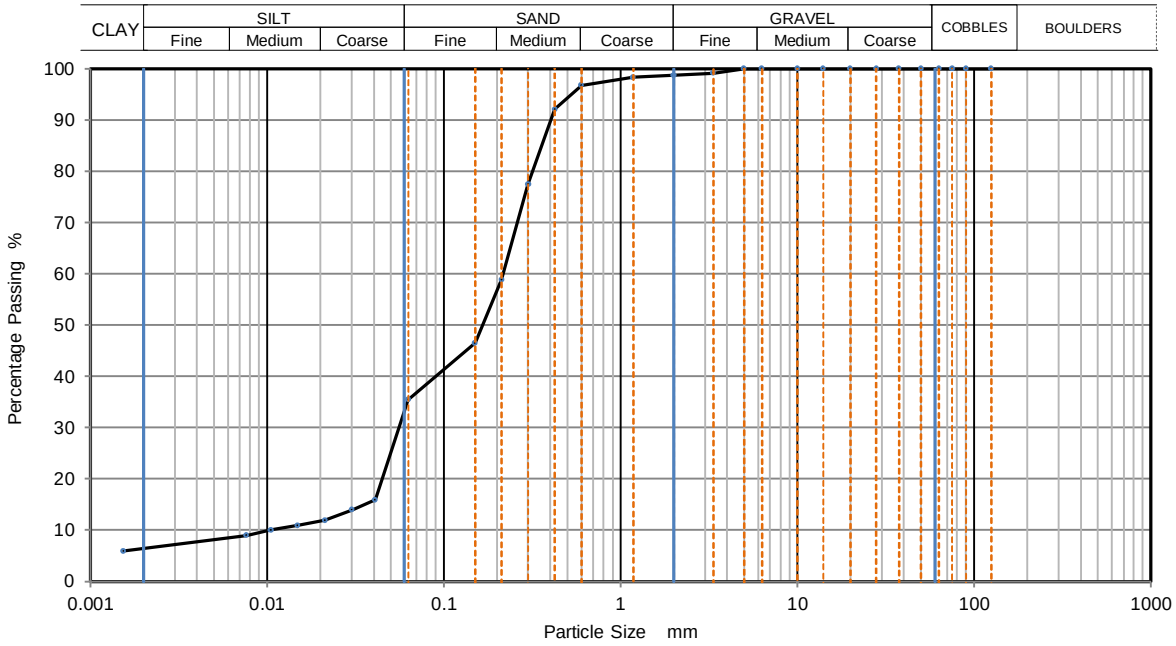
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 8 |
| Sand | 22 |
| Silt | 51 |
| Clay | 19 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0548 |
| D30 | mm | 0.00939 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH311 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029674 |
| Soil Description | Brown silty SAND | | | Depth, m | 9.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029674 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0409 | 16 |
| 90 | 100 | 0.0302 | 14 |
| 75 | 100 | 0.0212 | 12 |
| 63 | 100 | 0.0149 | 11 |
| 50 | 100 | 0.0105 | 10 |
| 37.5 | 100 | 0.0076 | 9 |
| 28 | 100 | 0.0015 | 6 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 99 | | |
| 2 | 99 | | |
| 1.18 | 98 | | |
| 0.6 | 97 | Particle density (assumed) | |
| 0.425 | 92 | 2.67 Mg/m3 | |
| 0.3 | 77 | | |
| 0.212 | 59 | | |
| 0.15 | 47 | | |
| 0.063 | 36 | | |

| Dry Mass of sample, g. | 3478 |
|---|---|

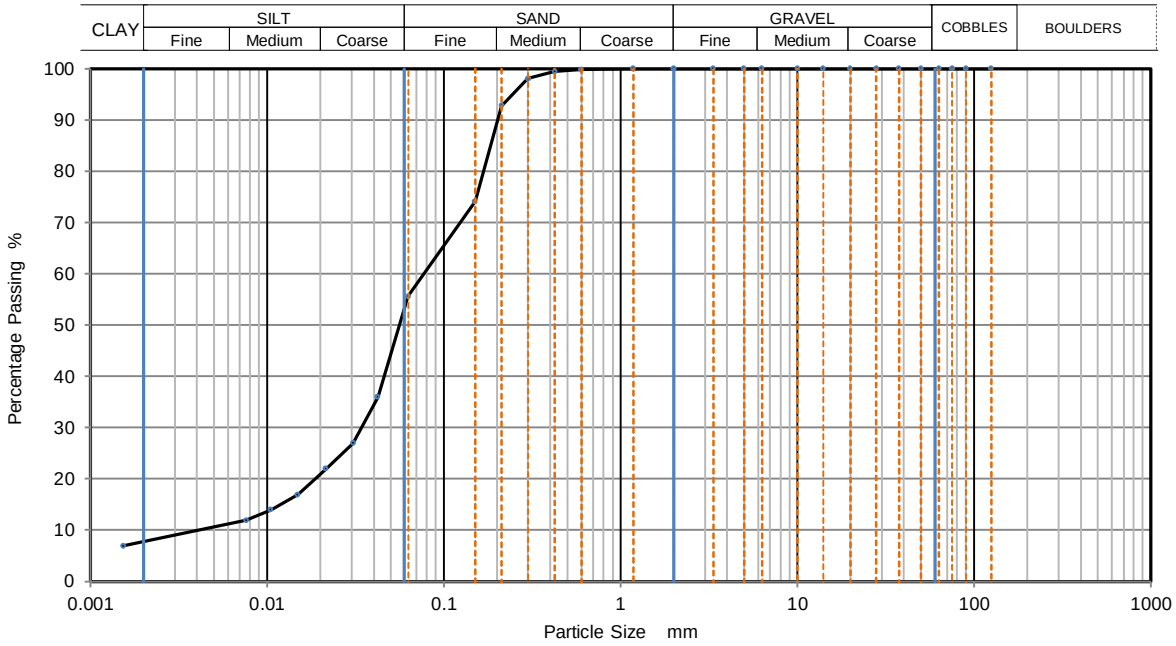
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 1 |
| Sand | 63 |
| Silt | 29 |
| Clay | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.216 |
| D30 | mm | 0.0559 |
| D10 | mm | 0.00994 |
| Uniformity Coefficient | | 22 |
| Curvature Coefficient | | 1.5 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH311 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029680 |
| Soil Description | Brown sandy SILT | | | Depth, m | 12.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029680 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 36 |
| 90 | 100 | 0.0307 | 27 |
| 75 | 100 | 0.0214 | 22 |
| 63 | 100 | 0.0149 | 17 |
| 50 | 100 | 0.0105 | 14 |
| 37.5 | 100 | 0.0076 | 12 |
| 28 | 100 | 0.0015 | 7 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 100 | Particle density (assumed) | |
| 0.425 | 100 | 2.67 Mg/m3 | |
| 0.3 | 98 | | |
| 0.212 | 93 | | |
| 0.15 | 74 | | |
| 0.063 | 56 | | |

| Dry Mass of sample, g. | 5185 |
|---|---|

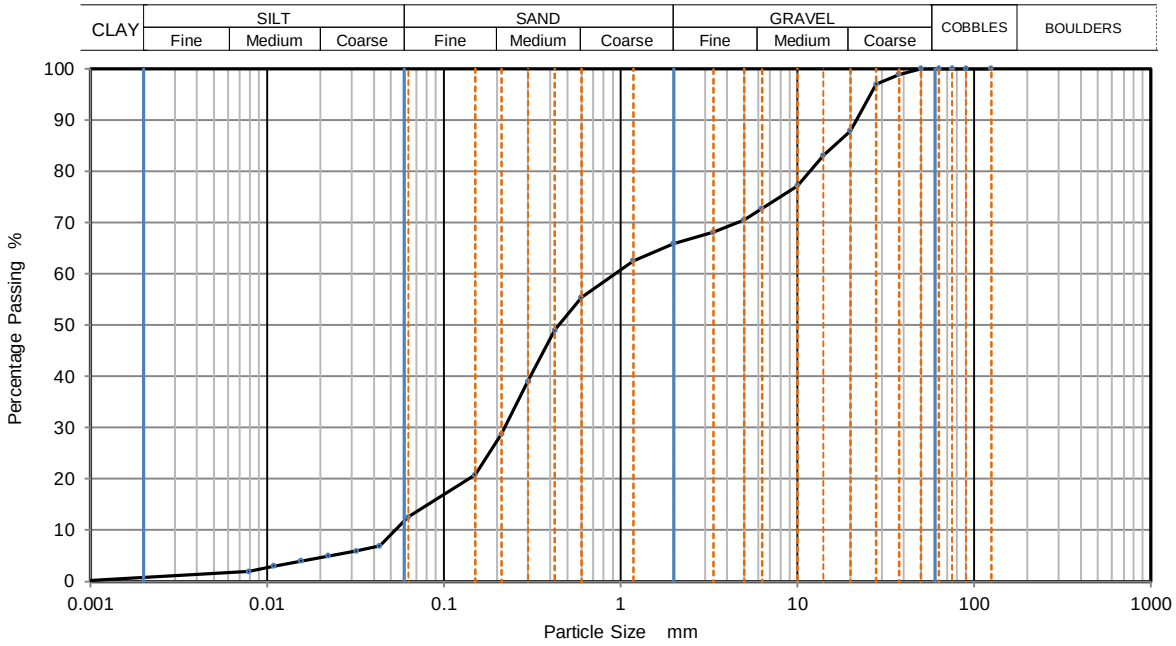
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 0 |
| Sand | 44 |
| Silt | 48 |
| Clay | 8 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0775 |
| D30 | mm | 0.0337 |
| D10 | mm | 0.00407 |
| Uniformity Coefficient | | 19 |
| Curvature Coefficient | | 3.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH312 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031301 |
| Soil Description | Grey SAND + GRAVEL | | | Depth, m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031301 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0434 | 7 |
| 90 | 100 | 0.0318 | 6 |
| 75 | 100 | 0.0222 | 5 |
| 63 | 100 | 0.0155 | 4 |
| 50 | 100 | 0.0109 | 3 |
| 37.5 | 99 | 0.0079 | 2 |
| 28 | 97 | 0.0008 | 0 |
| 20 | 88 | | |
| 14 | 83 | | |
| 10 | 77 | | |
| 6.3 | 73 | | |
| 5 | 71 | | |
| 3.35 | 68 | | |
| 2 | 66 | | |
| 1.18 | 63 | | |
| 0.6 | 55 | Particle density (assumed) | |
| 0.425 | 49 | 2.67 Mg/m3 | |
| 0.3 | 39 | | |
| 0.212 | 29 | | |
| 0.15 | 21 | | |
| 0.063 | 13 | | |

| Dry Mass of sample, g. | 9699 |
|---|---|

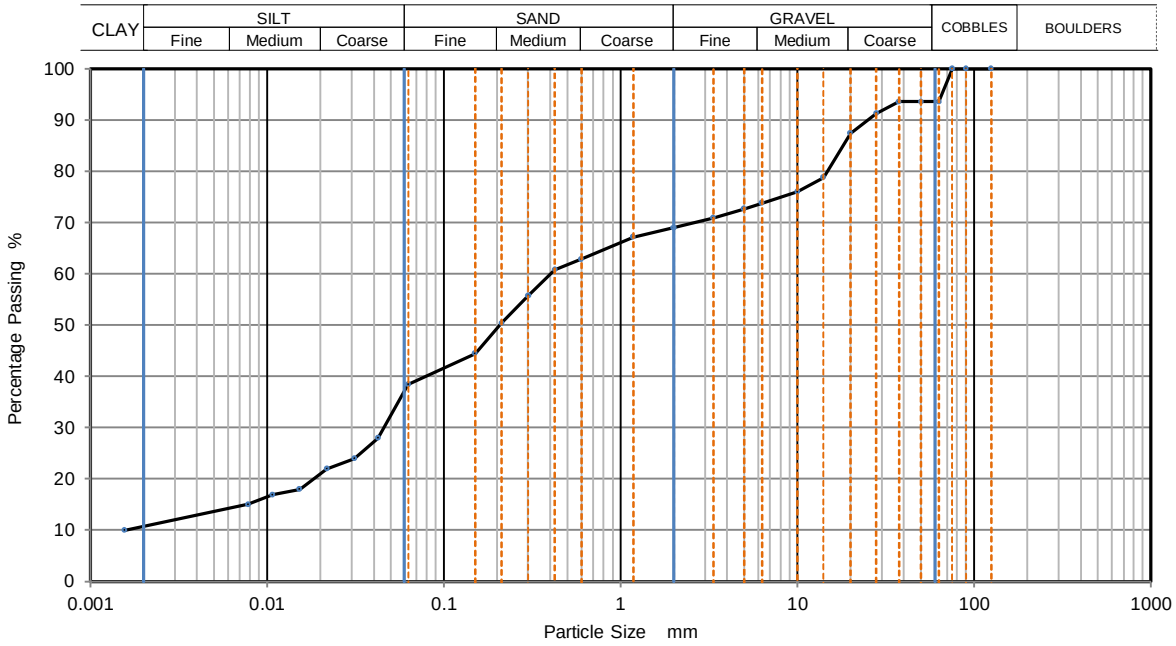
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 34 |
| Sand | 53 |
| Silt | 12 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.927 |
| D30 | mm | 0.221 |
| D10 | mm | 0.0528 |
| Uniformity Coefficient | | 18 |
| Curvature Coefficient | | 1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH312 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029692 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth, m | 2.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029692 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 28 |
| 90 | 100 | 0.0312 | 24 |
| 75 | 100 | 0.0219 | 22 |
| 63 | 94 | 0.0153 | 18 |
| 50 | 94 | 0.0108 | 17 |
| 37.5 | 94 | 0.0078 | 15 |
| 28 | 91 | 0.0016 | 10 |
| 20 | 87 | | |
| 14 | 79 | | |
| 10 | 76 | | |
| 6.3 | 74 | | |
| 5 | 73 | | |
| 3.35 | 71 | | |
| 2 | 69 | | |
| 1.18 | 67 | | |
| 0.6 | 63 | Particle density (assumed) | |
| 0.425 | 61 | 2.67 | Mg/m3 |
| 0.3 | 56 | | |
| 0.212 | 50 | | |
| 0.15 | 45 | | |
| 0.063 | 38 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 7705 |

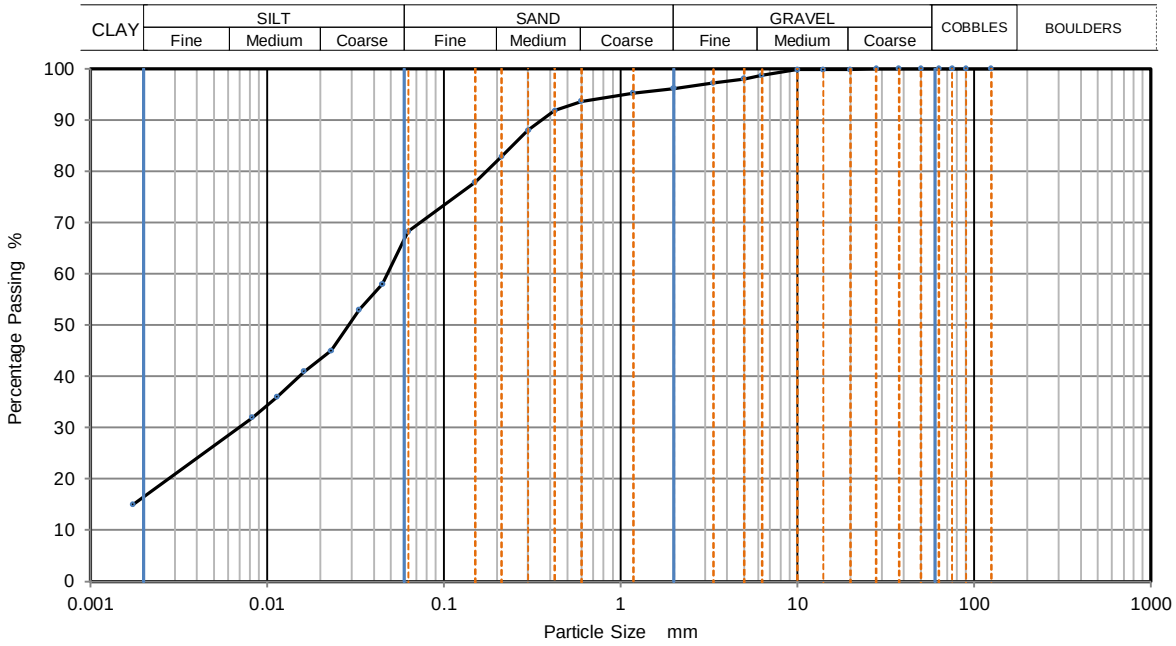
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 7 |
| Gravel | 25 |
| Sand | 31 |
| Silt | 28 |
| Clay | 10 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.403 |
| D30 | mm | 0.0461 |
| D10 | mm | 0.00174 |
| Uniformity Coefficient | | 230 |
| Curvature Coefficient | | 3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH312 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029697 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 4.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029697 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0449 | 58 |
| 90 | 100 | 0.0332 | 53 |
| 75 | 100 | 0.0231 | 45 |
| 63 | 100 | 0.0162 | 41 |
| 50 | 100 | 0.0114 | 36 |
| 37.5 | 100 | 0.0082 | 32 |
| 28 | 100 | 0.0017 | 15 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 99 | | |
| 5 | 98 | | |
| 3.35 | 97 | | |
| 2 | 96 | | |
| 1.18 | 95 | | |
| 0.6 | 94 | Particle density (assumed) | |
| 0.425 | 92 | 2.67 | Mg/m3 |
| 0.3 | 88 | | |
| 0.212 | 83 | | |
| 0.15 | 78 | | |
| 0.063 | 68 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 4833 |

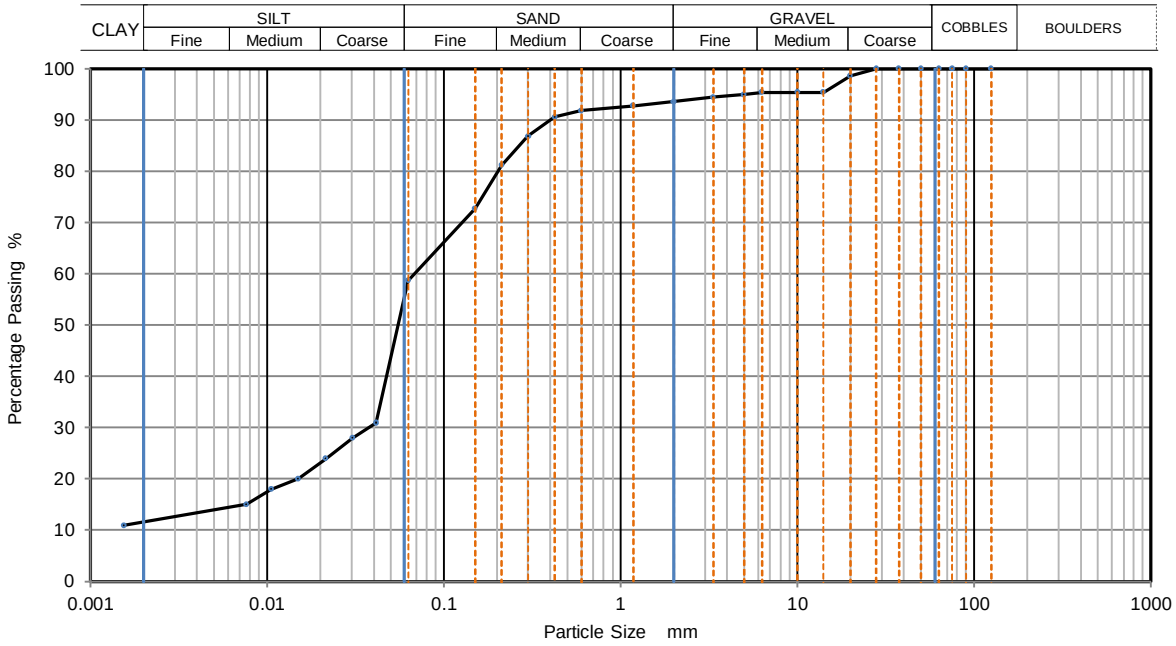
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 4 |
| Sand | 28 |
| Silt | 52 |
| Clay | 17 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0483 |
| D30 | mm | 0.0068 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH312 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029704 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 7.50 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029704 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0414 | 31 |
| 90 | 100 | 0.0306 | 28 |
| 75 | 100 | 0.0214 | 24 |
| 63 | 100 | 0.0150 | 20 |
| 50 | 100 | 0.0106 | 18 |
| 37.5 | 100 | 0.0076 | 15 |
| 28 | 100 | 0.0015 | 11 |
| 20 | 99 | | |
| 14 | 95 | | |
| 10 | 95 | | |
| 6.3 | 95 | | |
| 5 | 95 | | |
| 3.35 | 94 | | |
| 2 | 94 | | |
| 1.18 | 93 | | |
| 0.6 | 92 | Particle density (assumed) | |
| 0.425 | 91 | 2.67 Mg/m3 | |
| 0.3 | 87 | | |
| 0.212 | 81 | | |
| 0.15 | 73 | | |
| 0.063 | 59 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 8000 |

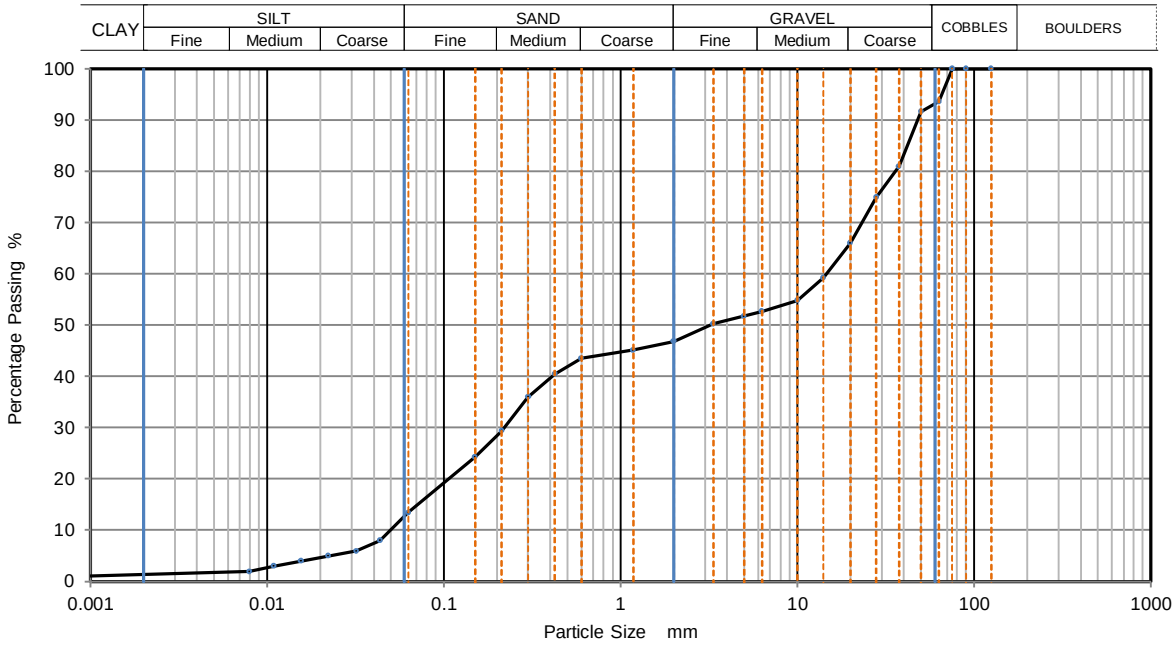
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 7 |
| Sand | 35 |
| Silt | 47 |
| Clay | 12 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0683 |
| D30 | mm | 0.0374 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH312 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029708 |
| Soil Description | Brown sandy clayey GRAVEL | | | Depth, m | 10.50 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029708 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0435 | 8 |
| 90 | 100 | 0.0318 | 6 |
| 75 | 100 | 0.0222 | 5 |
| 63 | 94 | 0.0155 | 4 |
| 50 | 92 | 0.0109 | 3 |
| 37.5 | 81 | 0.0079 | 2 |
| 28 | 75 | 0.0008 | 1 |
| 20 | 66 | | |
| 14 | 59 | | |
| 10 | 55 | | |
| 6.3 | 53 | | |
| 5 | 52 | | |
| 3.35 | 50 | | |
| 2 | 47 | | |
| 1.18 | 45 | | |
| 0.6 | 44 | Particle density (assumed) | |
| 0.425 | 41 | 2.67 | Mg/m3 |
| 0.3 | 36 | | |
| 0.212 | 29 | | |
| 0.15 | 24 | | |
| 0.063 | 14 | | |

| Dry Mass of sample, g. | 7920 |
|---|---|

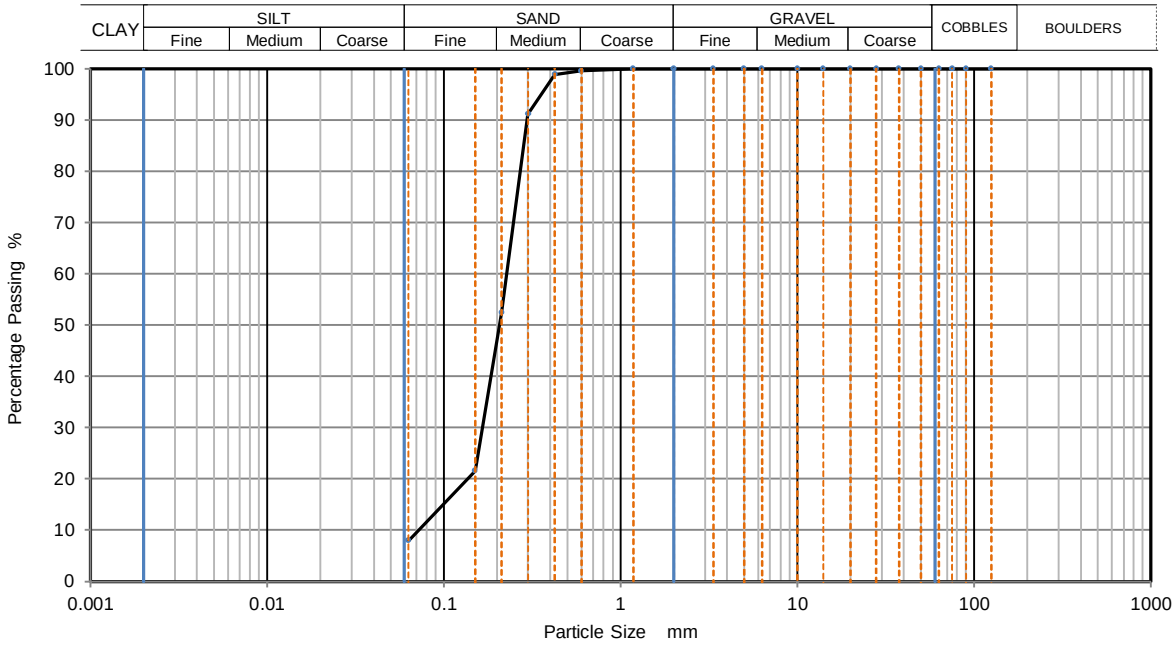
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 6 |
| Gravel | 47 |
| Sand | 33 |
| Silt | 12 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 14.6 |
| D30 | mm | 0.219 |
| D10 | mm | 0.0501 |
| Uniformity Coefficient | | 290 |
| Curvature Coefficient | | 0.066 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH312 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029715 |
| Soil Description | Brown silty SAND | | | Depth, m | 13.50 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1029715 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 100 | | |
| 0.425 | 99 | | |
| 0.3 | 91 | | |
| 0.212 | 52 | | |
| 0.15 | 22 | | |
| 0.063 | 8 | | |

| Dry Mass of sample, g. | 6207 |
|---|---|

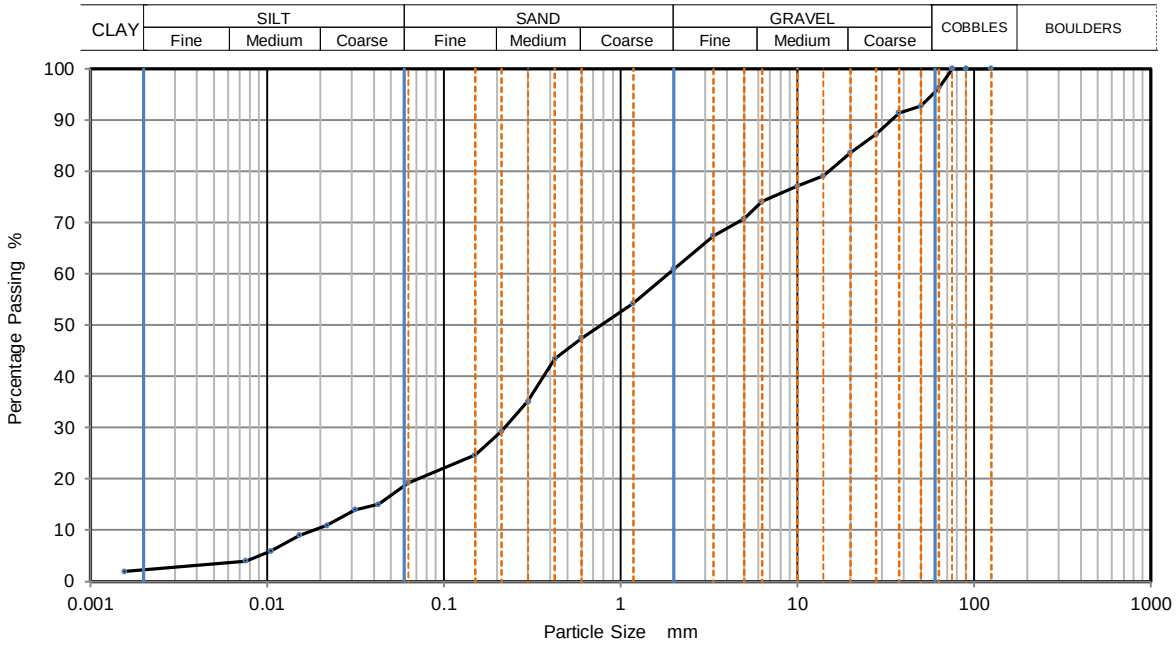
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 0 |
| Sand | 92 |
| | |
| Fines <0.063mm | 8 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.227 |
| D30 | mm | 0.165 |
| D10 | mm | 0.0717 |
| Uniformity Coefficient | | 3.2 |
| Curvature Coefficient | | 1.7 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020718 |
| Soil Description | Brown gravelly clayey SAND | | | Depth, m | 1.20 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020718 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 15 |
| 90 | 100 | 0.0314 | 14 |
| 75 | 100 | 0.0218 | 11 |
| 63 | 96 | 0.0152 | 9 |
| 50 | 93 | 0.0105 | 6 |
| 37.5 | 91 | 0.0076 | 4 |
| 28 | 87 | 0.0016 | 2 |
| 20 | 84 | | |
| 14 | 79 | | |
| 10 | 77 | | |
| 6.3 | 74 | | |
| 5 | 71 | | |
| 3.35 | 67 | | |
| 2 | 61 | | |
| 1.18 | 54 | | |
| 0.6 | 47 | Particle density (assumed) | |
| 0.425 | 43 | 2.67 Mg/m3 | |
| 0.3 | 35 | | |
| 0.212 | 29 | | |
| 0.15 | 25 | | |
| 0.063 | 19 | | |

| Dry Mass of sample, g. | 12026 |
|---|---|

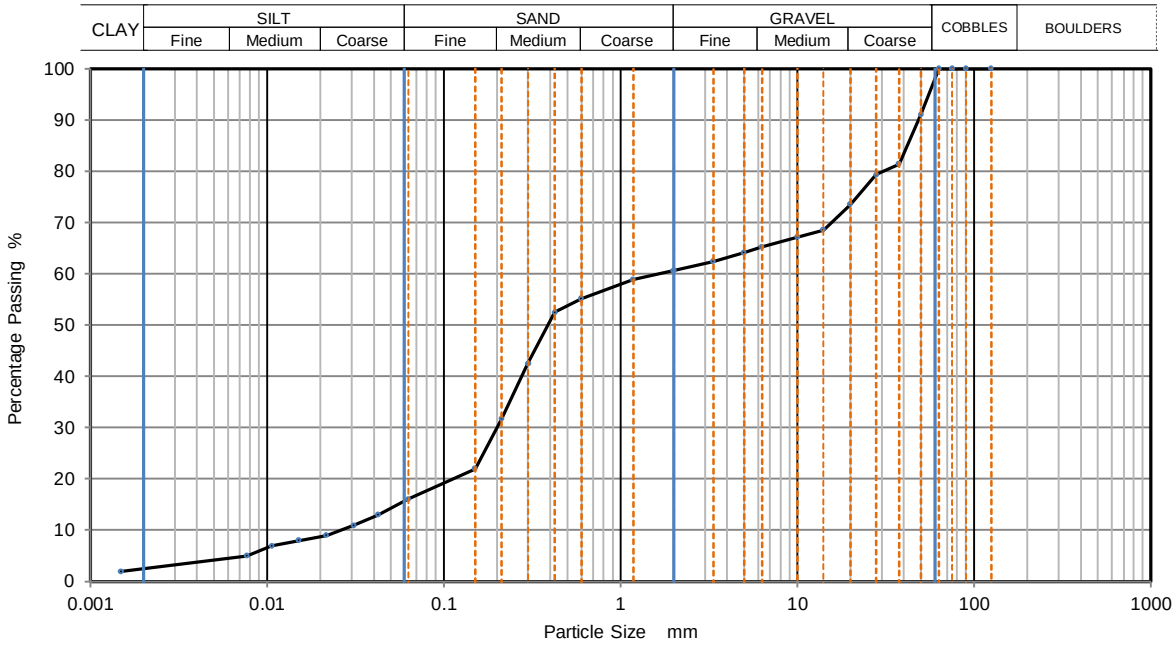
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 4 |
| Gravel | 36 |
| Sand | 42 |
| Silt | 17 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.87 |
| D30 | mm | 0.221 |
| D10 | mm | 0.0185 |
| Uniformity Coefficient | | 100 |
| Curvature Coefficient | | 1.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020723 |
| Soil Description | Brown gravelly clayey SAND | | | Depth, m | 3.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020723 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0423 | 13 |
| 90 | 100 | 0.0309 | 11 |
| 75 | 100 | 0.0216 | 9 |
| 63 | 100 | 0.0151 | 8 |
| 50 | 91 | 0.0107 | 7 |
| 37.5 | 81 | 0.0077 | 5 |
| 28 | 79 | 0.0015 | 2 |
| 20 | 74 | | |
| 14 | 69 | | |
| 10 | 67 | | |
| 6.3 | 65 | | |
| 5 | 64 | | |
| 3.35 | 62 | | |
| 2 | 61 | | |
| 1.18 | 59 | | |
| 0.6 | 55 | Particle density (assumed) | |
| 0.425 | 53 | 2.67 | Mg/m3 |
| 0.3 | 43 | | |
| 0.212 | 32 | | |
| 0.15 | 22 | | |
| 0.063 | 16 | | |

| Dry Mass of sample, g. | 6392 |
|---|---|

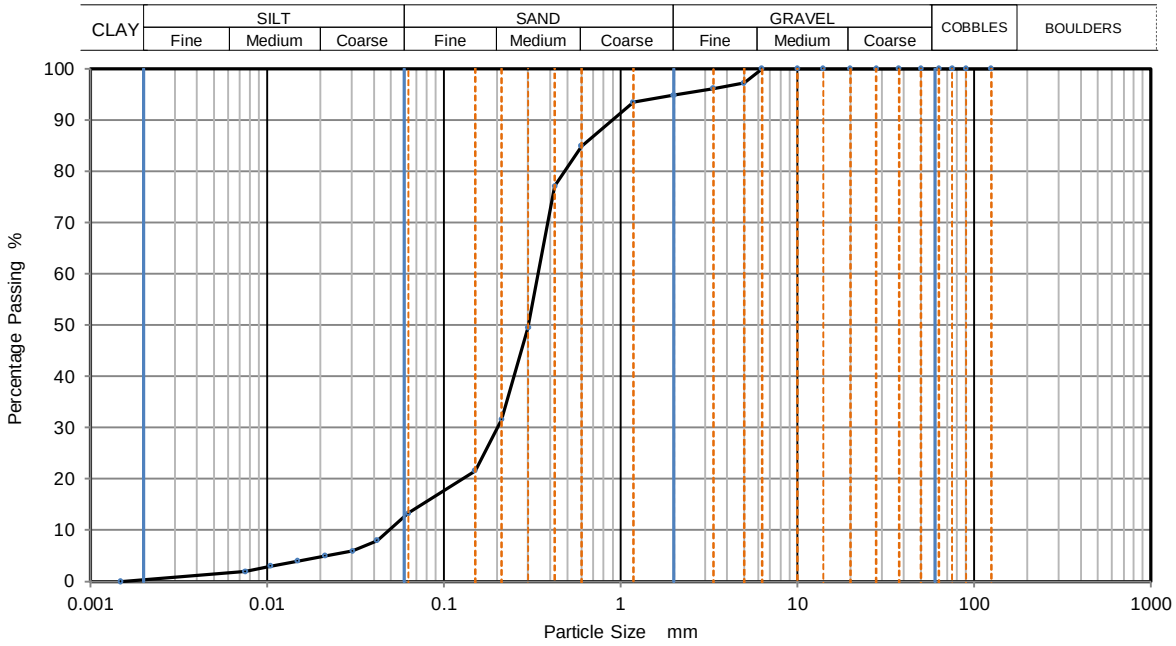
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 39 |
| Sand | 45 |
| Silt | 14 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.65 |
| D30 | mm | 0.2 |
| D10 | mm | 0.0274 |
| Uniformity Coefficient | | 60 |
| Curvature Coefficient | | 0.88 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020725 |
| Soil Description | Brown SAND | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | D |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020725 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0418 | 8 |
| 90 | 100 | 0.0306 | 6 |
| 75 | 100 | 0.0212 | 5 |
| 63 | 100 | 0.0149 | 4 |
| 50 | 100 | 0.0104 | 3 |
| 37.5 | 100 | 0.0075 | 2 |
| 28 | 100 | 0.0015 | 0 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 97 | | |
| 3.35 | 96 | | |
| 2 | 95 | | |
| 1.18 | 93 | | |
| 0.6 | 85 | Particle density (assumed) | |
| 0.425 | 77 | 2.67 | Mg/m3 |
| 0.3 | 50 | | |
| 0.212 | 32 | | |
| 0.15 | 22 | | |
| 0.063 | 13 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 386 |

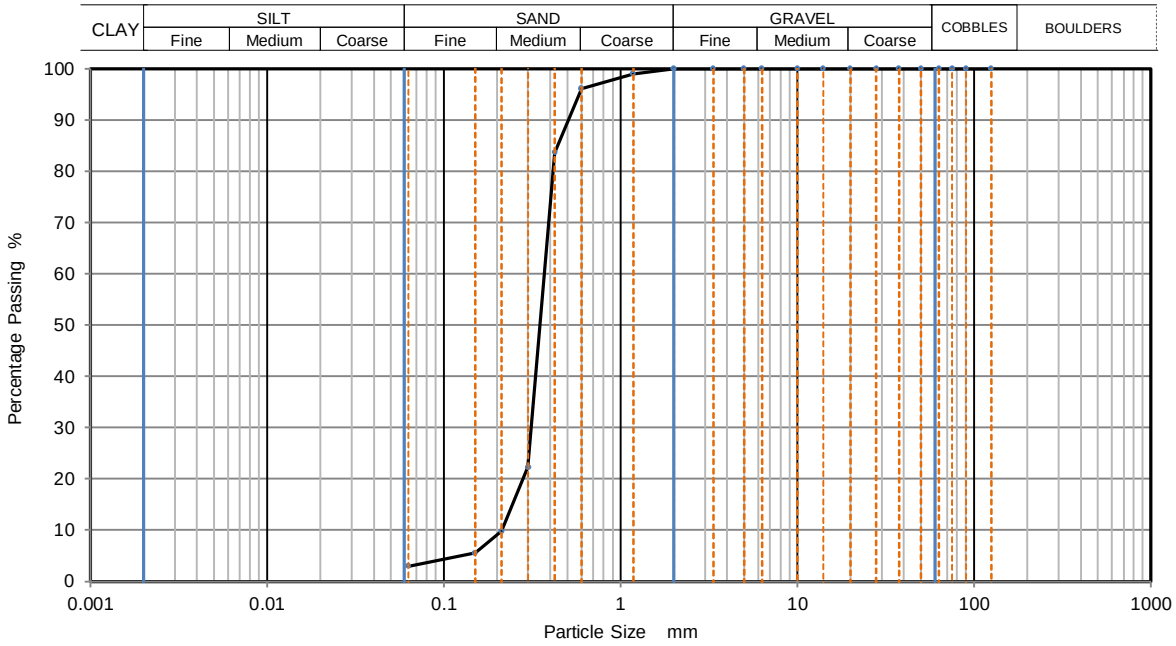
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 5 |
| Sand | 82 |
| Silt | 13 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.343 |
| D30 | mm | 0.201 |
| D10 | mm | 0.049 |
| Uniformity Coefficient | | 7 |
| Curvature Coefficient | | 2.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020729 |
| Soil Description | Brown SAND | | | Depth, m | 5.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1020729 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 99 | | |
| 0.6 | 96 | | |
| 0.425 | 84 | | |
| 0.3 | 22 | | |
| 0.212 | 10 | | |
| 0.15 | 6 | | |
| 0.063 | 3 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 2931 |

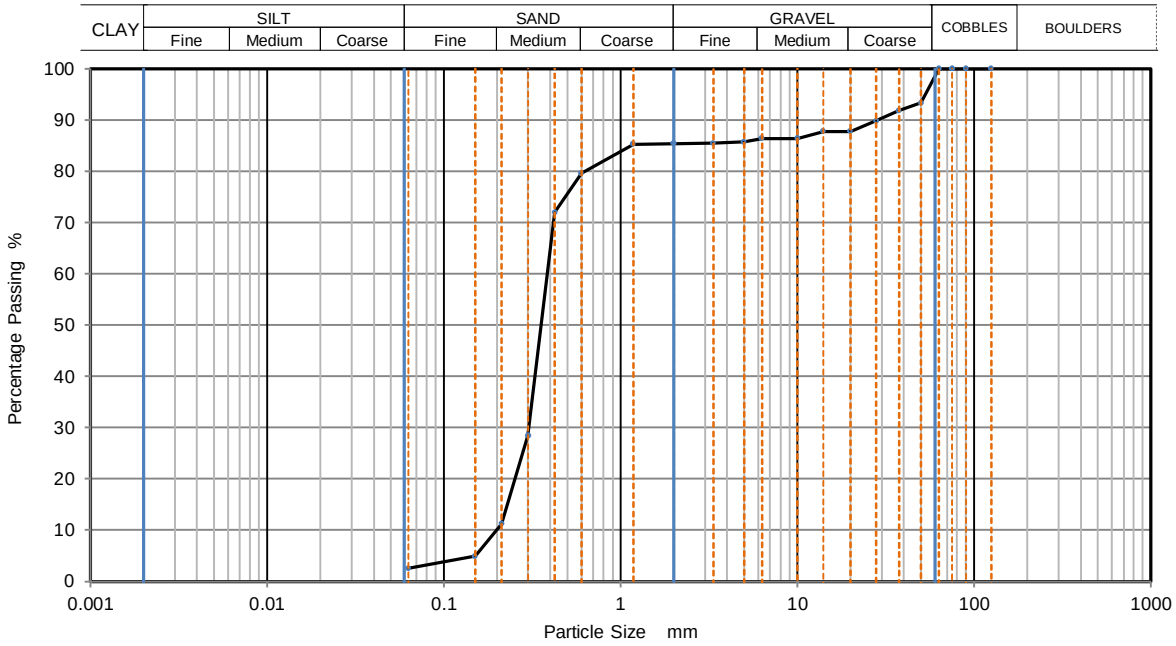
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 0 |
| Sand | 97 |
| | |
| Fines <0.063mm | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.372 |
| D30 | mm | 0.313 |
| D10 | mm | 0.213 |
| Uniformity Coefficient | | 1.7 |
| Curvature Coefficient | | 1.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020732 |
| Soil Description | Brown gravelly SAND | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1020732 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 93 | | |
| 37.5 | 92 | | |
| 28 | 90 | | |
| 20 | 88 | | |
| 14 | 88 | | |
| 10 | 86 | | |
| 6.3 | 86 | | |
| 5 | 86 | | |
| 3.35 | 86 | | |
| 2 | 85 | | |
| 1.18 | 85 | | |
| 0.6 | 80 | | |
| 0.425 | 72 | | |
| 0.3 | 29 | | |
| 0.212 | 11 | | |
| 0.15 | 5 | | |
| 0.063 | 3 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5488 |

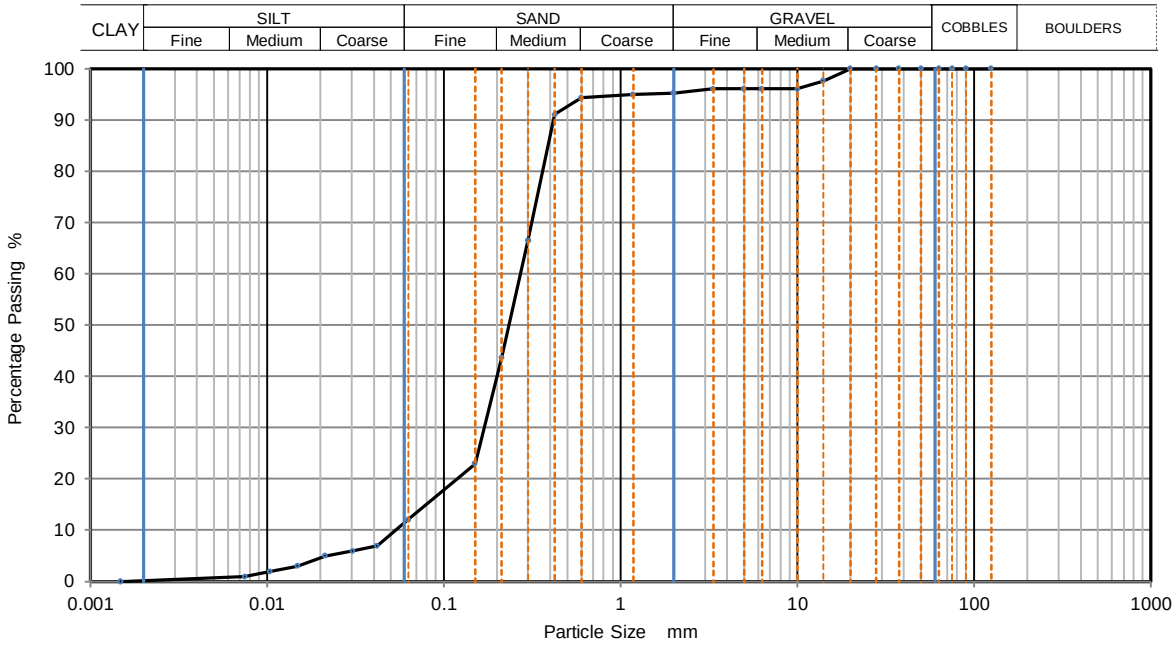
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 15 |
| Sand | 83 |
| | |
| Fines <0.063mm | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.386 |
| D30 | mm | 0.304 |
| D10 | mm | 0.198 |
| Uniformity Coefficient | | 2 |
| Curvature Coefficient | | 1.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020735 |
| Soil Description | Brown gravelly silty SAND | | | Depth, m | 7.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020735 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0418 | 7 |
| 90 | 100 | 0.0306 | 6 |
| 75 | 100 | 0.0213 | 5 |
| 63 | 100 | 0.0149 | 3 |
| 50 | 100 | 0.0104 | 2 |
| 37.5 | 100 | 0.0075 | 1 |
| 28 | 100 | 0.0015 | 0 |
| 20 | 100 | | |
| 14 | 98 | | |
| 10 | 96 | | |
| 6.3 | 96 | | |
| 5 | 96 | | |
| 3.35 | 96 | | |
| 2 | 95 | | |
| 1.18 | 95 | | |
| 0.6 | 94 | Particle density (assumed) | |
| 0.425 | 91 | 2.67 | Mg/m3 |
| 0.3 | 66 | | |
| 0.212 | 44 | | |
| 0.15 | 23 | | |
| 0.063 | 12 | | |

| Dry Mass of sample, g. | 4944 |
|---|---|

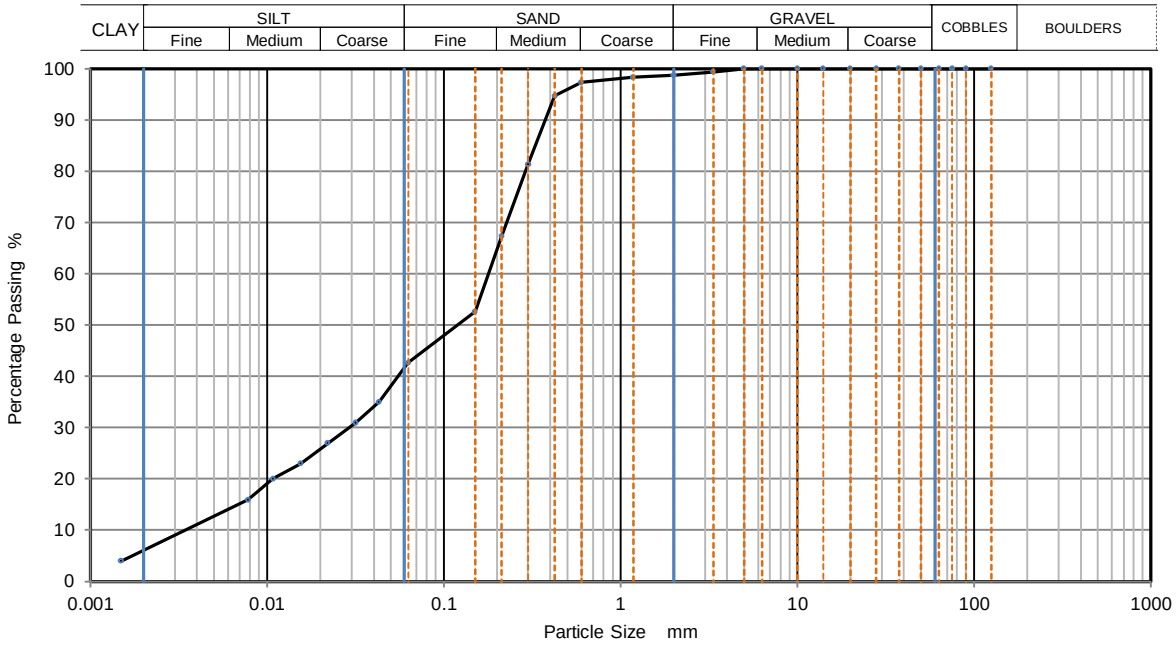
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 5 |
| Sand | 83 |
| Silt | 12 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.272 |
| D30 | mm | 0.169 |
| D10 | mm | 0.0527 |
| Uniformity Coefficient | | 5.2 |
| Curvature Coefficient | | 2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020738 |
| Soil Description | Brown silty gravelly SAND | | | Depth, m | 9.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1020738 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0430 | 35 |
| 90 | 100 | 0.0316 | 31 |
| 75 | 100 | 0.0221 | 27 |
| 63 | 100 | 0.0154 | 23 |
| 50 | 100 | 0.0108 | 20 |
| 37.5 | 100 | 0.0078 | 16 |
| 28 | 100 | 0.0015 | 4 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 99 | | |
| 2 | 99 | | |
| 1.18 | 98 | | |
| 0.6 | 97 | Particle density (assumed) | |
| 0.425 | 95 | 2.67 | Mg/m3 |
| 0.3 | 81 | | |
| 0.212 | 67 | | |
| 0.15 | 53 | | |
| 0.063 | 43 | | |

| Dry Mass of sample, g. | 3251 |
|---|---|

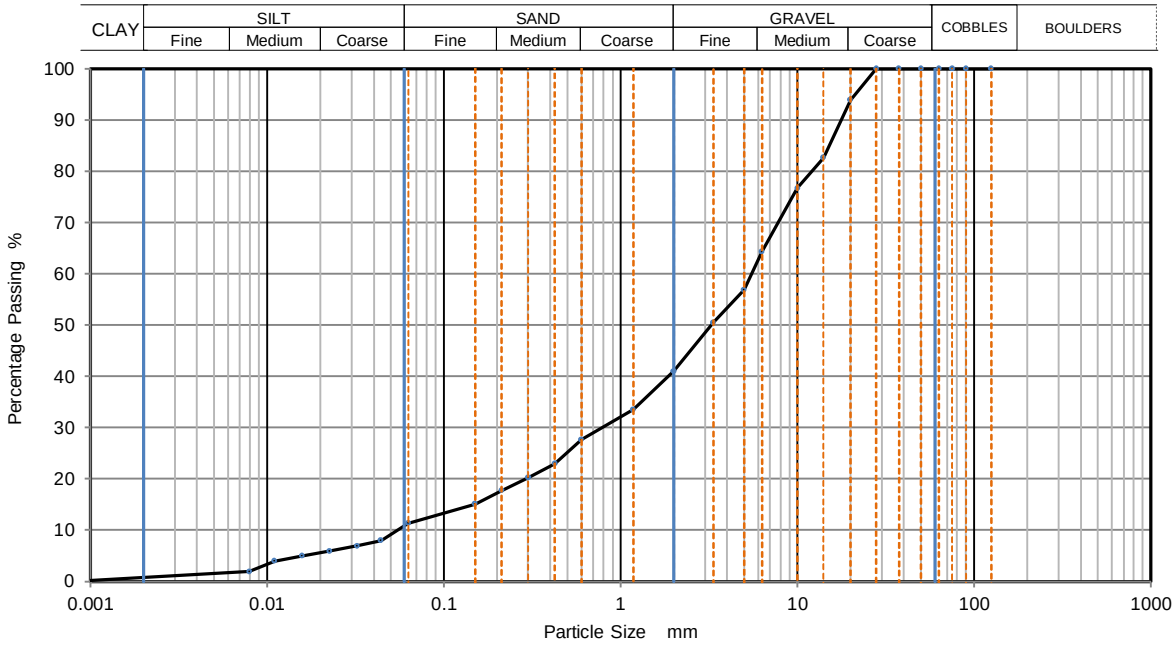
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 1 |
| Sand | 56 |
| Silt | 37 |
| Clay | 6 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.178 |
| D30 | mm | 0.0289 |
| D10 | mm | 0.00336 |
| Uniformity Coefficient | | 53 |
| Curvature Coefficient | | 1.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH314 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029606 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029606 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0441 | 8 |
| 90 | 100 | 0.0324 | 7 |
| 75 | 100 | 0.0226 | 6 |
| 63 | 100 | 0.0158 | 5 |
| 50 | 100 | 0.0110 | 4 |
| 37.5 | 100 | 0.0079 | 2 |
| 28 | 100 | 0.0008 | 0 |
| 20 | 94 | | |
| 14 | 83 | | |
| 10 | 77 | | |
| 6.3 | 64 | | |
| 5 | 57 | | |
| 3.35 | 51 | | |
| 2 | 41 | | |
| 1.18 | 34 | | |
| 0.6 | 28 | Particle density (assumed) | |
| 0.425 | 23 | 2.67 | Mg/m3 |
| 0.3 | 20 | | |
| 0.212 | 18 | | |
| 0.15 | 15 | | |
| 0.063 | 11 | | |

| Dry Mass of sample, g. | 6576 |
|---|---|

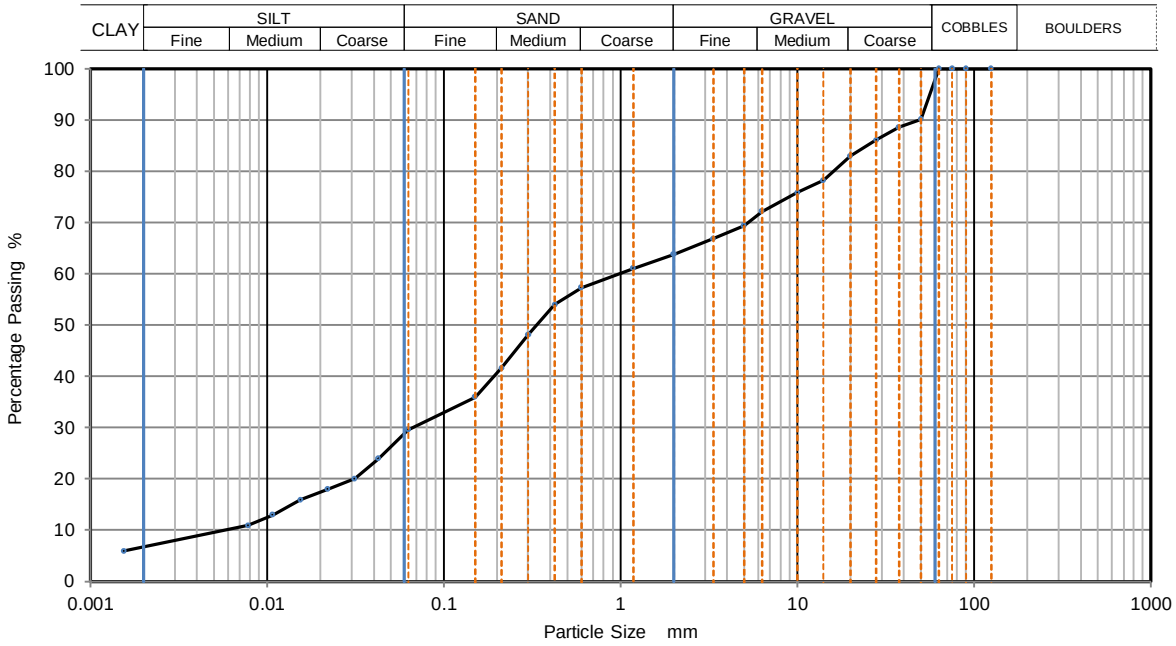
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 59 |
| Sand | 30 |
| Silt | 11 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 5.5 |
| D30 | mm | 0.78 |
| D10 | mm | 0.0546 |
| Uniformity Coefficient | | 100 |
| Curvature Coefficient | | 2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH314 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029612 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth, m | 4.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029612 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 24 |
| 90 | 100 | 0.0313 | 20 |
| 75 | 100 | 0.0220 | 18 |
| 63 | 100 | 0.0154 | 16 |
| 50 | 90 | 0.0108 | 13 |
| 37.5 | 89 | 0.0078 | 11 |
| 28 | 86 | 0.0015 | 6 |
| 20 | 83 | | |
| 14 | 78 | | |
| 10 | 76 | | |
| 6.3 | 72 | | |
| 5 | 69 | | |
| 3.35 | 67 | | |
| 2 | 64 | | |
| 1.18 | 61 | | |
| 0.6 | 57 | Particle density (assumed) | |
| 0.425 | 54 | 2.67 Mg/m3 | |
| 0.3 | 48 | | |
| 0.212 | 42 | | |
| 0.15 | 36 | | |
| 0.063 | 30 | | |

| Dry Mass of sample, g. | 4760 |
|---|---|

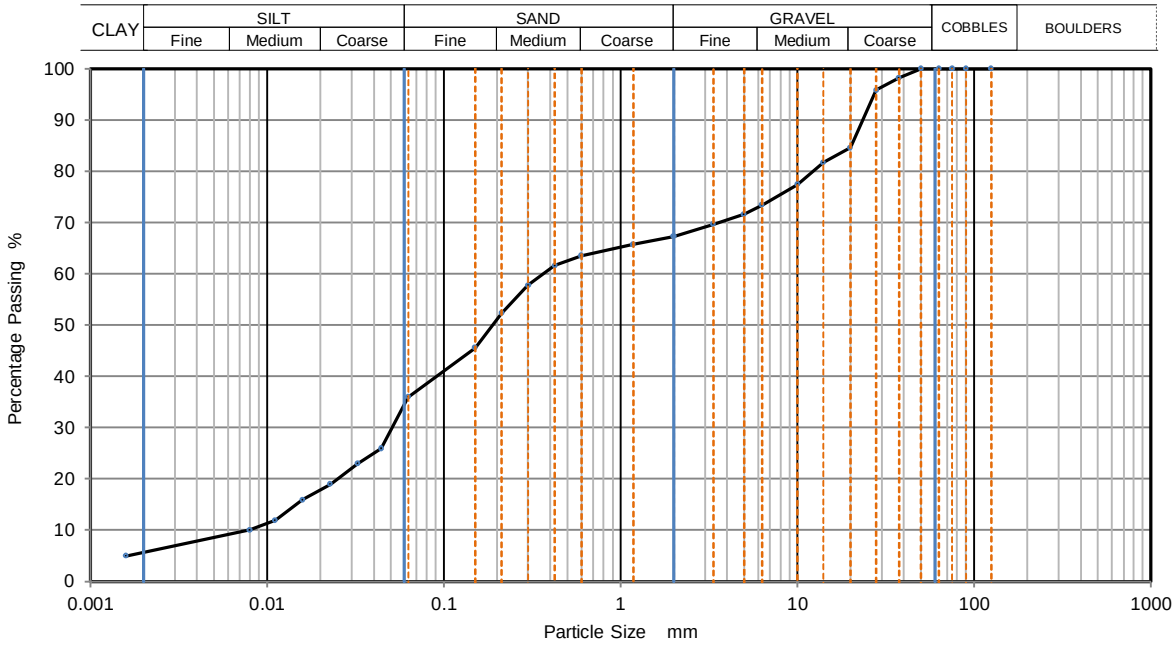
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 36 |
| Sand | 34 |
| Silt | 23 |
| Clay | 7 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.971 |
| D30 | mm | 0.0668 |
| D10 | mm | 0.00535 |
| Uniformity Coefficient | | 180 |
| Curvature Coefficient | | 0.86 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH314 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029618 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 6.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029618 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0442 | 26 |
| 90 | 100 | 0.0325 | 23 |
| 75 | 100 | 0.0227 | 19 |
| 63 | 100 | 0.0159 | 16 |
| 50 | 100 | 0.0111 | 12 |
| 37.5 | 98 | 0.0080 | 10 |
| 28 | 96 | 0.0016 | 5 |
| 20 | 85 | | |
| 14 | 82 | | |
| 10 | 77 | | |
| 6.3 | 73 | | |
| 5 | 72 | | |
| 3.35 | 70 | | |
| 2 | 67 | | |
| 1.18 | 66 | | |
| 0.6 | 64 | Particle density (assumed) | |
| 0.425 | 62 | 2.67 | Mg/m3 |
| 0.3 | 58 | | |
| 0.212 | 52 | | |
| 0.15 | 46 | | |
| 0.063 | 36 | | |

| Dry Mass of sample, g. | 9020 |
|---|---|

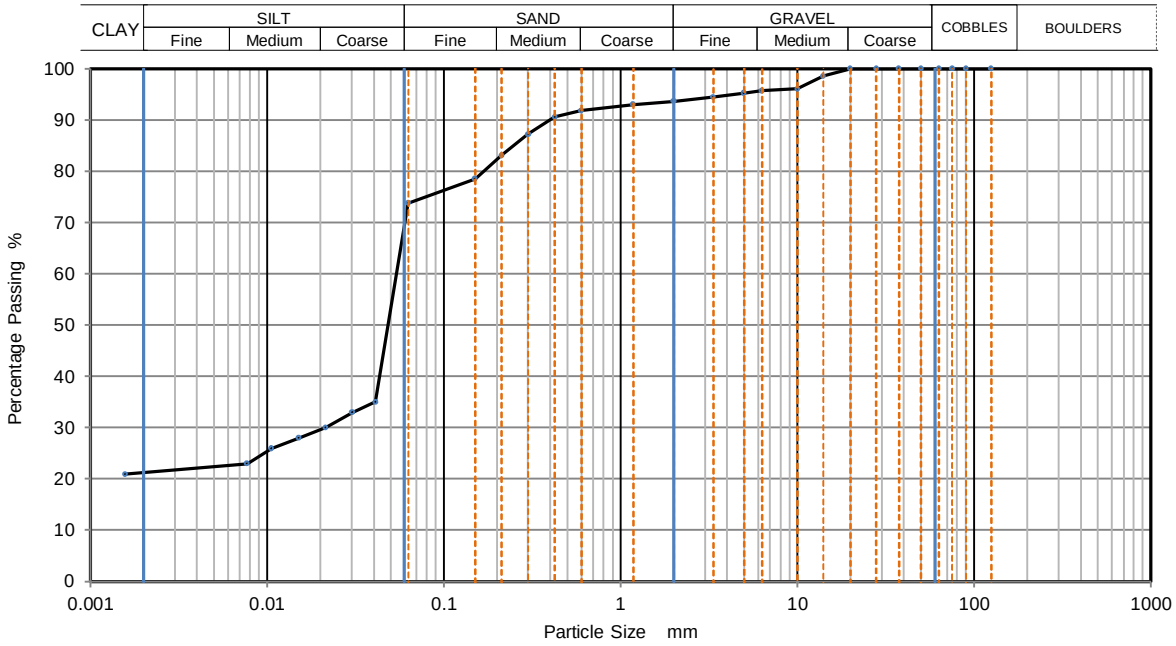
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 33 |
| Sand | 31 |
| Silt | 31 |
| Clay | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.367 |
| D30 | mm | 0.051 |
| D10 | mm | 0.00761 |
| Uniformity Coefficient | | 48 |
| Curvature Coefficient | | 0.93 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH315 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029633 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 1.20 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029633 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0411 | 35 |
| 90 | 100 | 0.0304 | 33 |
| 75 | 100 | 0.0214 | 30 |
| 63 | 100 | 0.0151 | 28 |
| 50 | 100 | 0.0106 | 26 |
| 37.5 | 100 | 0.0077 | 23 |
| 28 | 100 | 0.0016 | 21 |
| 20 | 100 | | |
| 14 | 99 | | |
| 10 | 96 | | |
| 6.3 | 96 | | |
| 5 | 95 | | |
| 3.35 | 95 | | |
| 2 | 94 | | |
| 1.18 | 93 | | |
| 0.6 | 92 | Particle density (assumed) | |
| 0.425 | 91 | 2.67 | Mg/m3 |
| 0.3 | 87 | | |
| 0.212 | 83 | | |
| 0.15 | 79 | | |
| 0.063 | 74 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5855 |

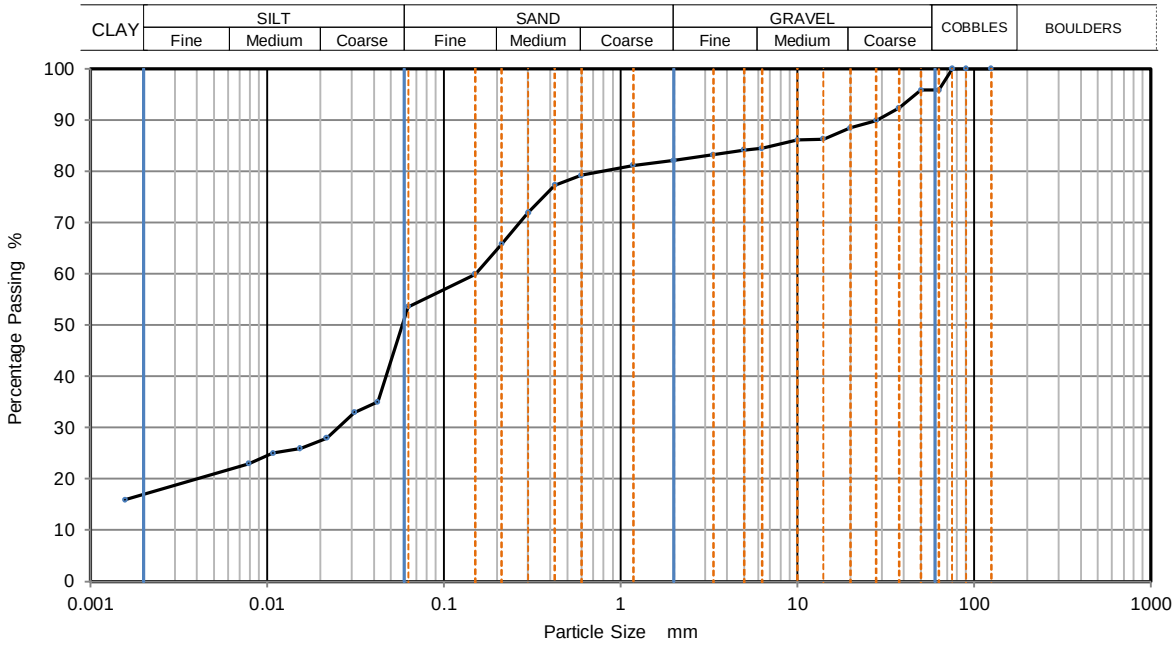
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 6 |
| Sand | 20 |
| Silt | 52 |
| Clay | 21 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0541 |
| D30 | mm | 0.0204 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH315 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029644 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 6.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1029644 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 35 |
| 90 | 100 | 0.0312 | 33 |
| 75 | 100 | 0.0218 | 28 |
| 63 | 96 | 0.0153 | 26 |
| 50 | 96 | 0.0108 | 25 |
| 37.5 | 92 | 0.0079 | 23 |
| 28 | 90 | 0.0016 | 16 |
| 20 | 88 | | |
| 14 | 86 | | |
| 10 | 86 | | |
| 6.3 | 85 | | |
| 5 | 84 | | |
| 3.35 | 83 | | |
| 2 | 82 | | |
| 1.18 | 81 | | |
| 0.6 | 79 | Particle density (assumed) | |
| 0.425 | 77 | 2.67 | Mg/m3 |
| 0.3 | 72 | | |
| 0.212 | 66 | | |
| 0.15 | 60 | | |
| 0.063 | 54 | | |

| Dry Mass of sample, g. | 10360 |
|---|---|

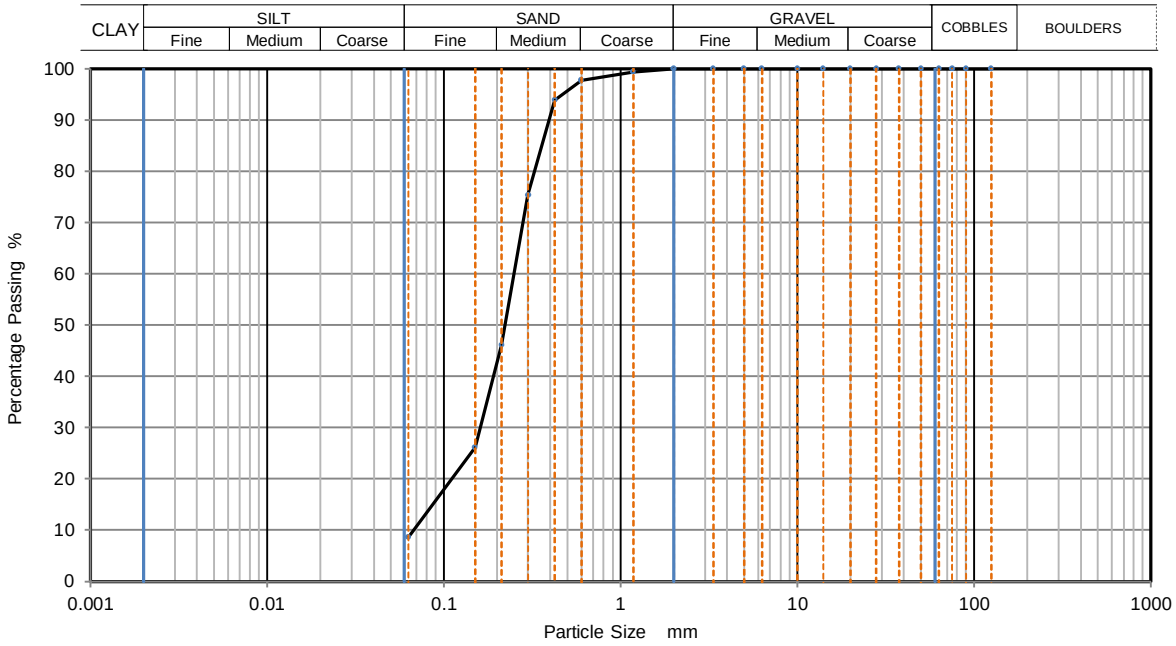
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 4 |
| Gravel | 14 |
| Sand | 29 |
| Silt | 36 |
| Clay | 18 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.151 |
| D30 | mm | 0.0251 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH315 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029651 |
| Soil Description | Brown slightly gravelly silty SAND with strong odour | | | Depth, m | 10.50 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1029651 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 99 | | |
| 0.6 | 98 | | |
| 0.425 | 94 | | |
| 0.3 | 75 | | |
| 0.212 | 46 | | |
| 0.15 | 26 | | |
| 0.063 | 9 | | |

| Dry Mass of sample, g. | 4614 |
|---|---|

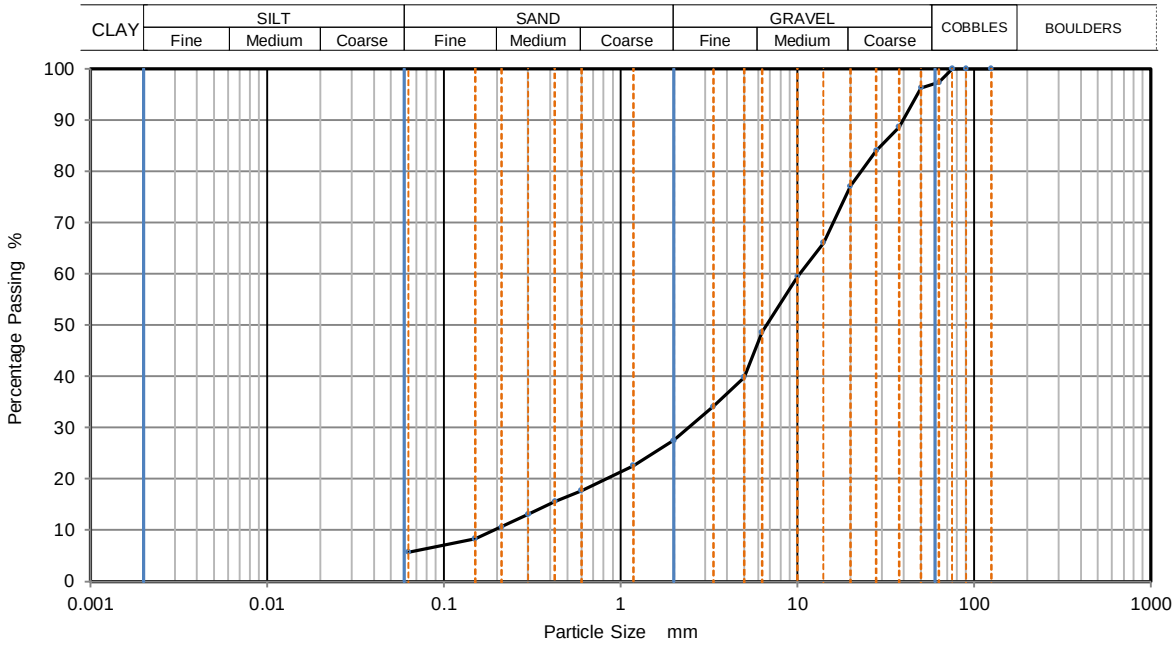
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 0 |
| Sand | 91 |
| | |
| Fines <0.063mm | 9 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.25 |
| D30 | mm | 0.16 |
| D10 | mm | 0.0672 |
| Uniformity Coefficient | | 3.7 |
| Curvature Coefficient | | 1.5 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH320 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1026935 |
| Soil Description | Brown clayey gravelly SAND | | | Depth, m | 1.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1026935 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 97 | | |
| 50 | 96 | | |
| 37.5 | 89 | | |
| 28 | 84 | | |
| 20 | 77 | | |
| 14 | 66 | | |
| 10 | 60 | | |
| 6.3 | 49 | | |
| 5 | 40 | | |
| 3.35 | 34 | | |
| 2 | 28 | | |
| 1.18 | 23 | | |
| 0.6 | 18 | | |
| 0.425 | 16 | | |
| 0.3 | 13 | | |
| 0.212 | 11 | | |
| 0.15 | 8 | | |
| 0.063 | 6 | | |

| Dry Mass of sample, g. | 11510 |
|---|---|

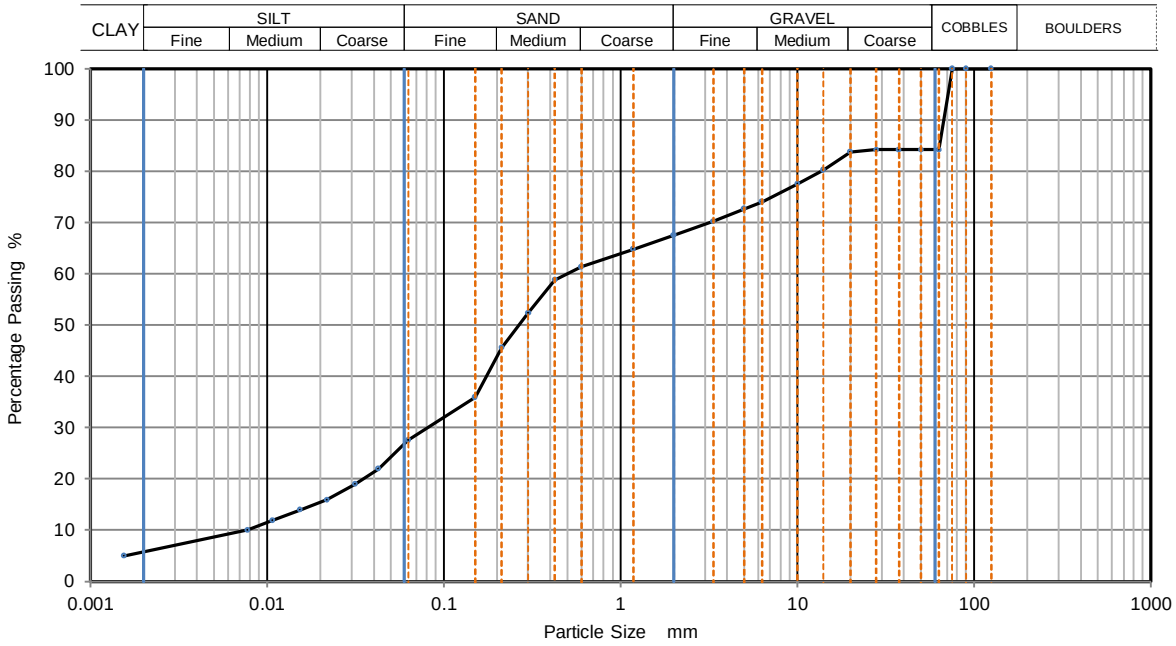
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 3 |
| Gravel | 70 |
| Sand | 22 |
| | |
| Fines <0.063mm | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 10.3 |
| D30 | mm | 2.43 |
| D10 | mm | 0.191 |
| Uniformity Coefficient | | 54 |
| Curvature Coefficient | | 3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH320 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033299 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 2.45 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033299 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 22 |
| 90 | 100 | 0.0315 | 19 |
| 75 | 100 | 0.0219 | 16 |
| 63 | 84 | 0.0153 | 14 |
| 50 | 84 | 0.0108 | 12 |
| 37.5 | 84 | 0.0078 | 10 |
| 28 | 84 | 0.0015 | 5 |
| 20 | 84 | | |
| 14 | 80 | | |
| 10 | 78 | | |
| 6.3 | 74 | | |
| 5 | 73 | | |
| 3.35 | 70 | | |
| 2 | 68 | | |
| 1.18 | 65 | | |
| 0.6 | 61 | Particle density (assumed) | |
| 0.425 | 59 | 2.67 Mg/m3 | |
| 0.3 | 52 | | |
| 0.212 | 46 | | |
| 0.15 | 36 | | |
| 0.063 | 28 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3387 |

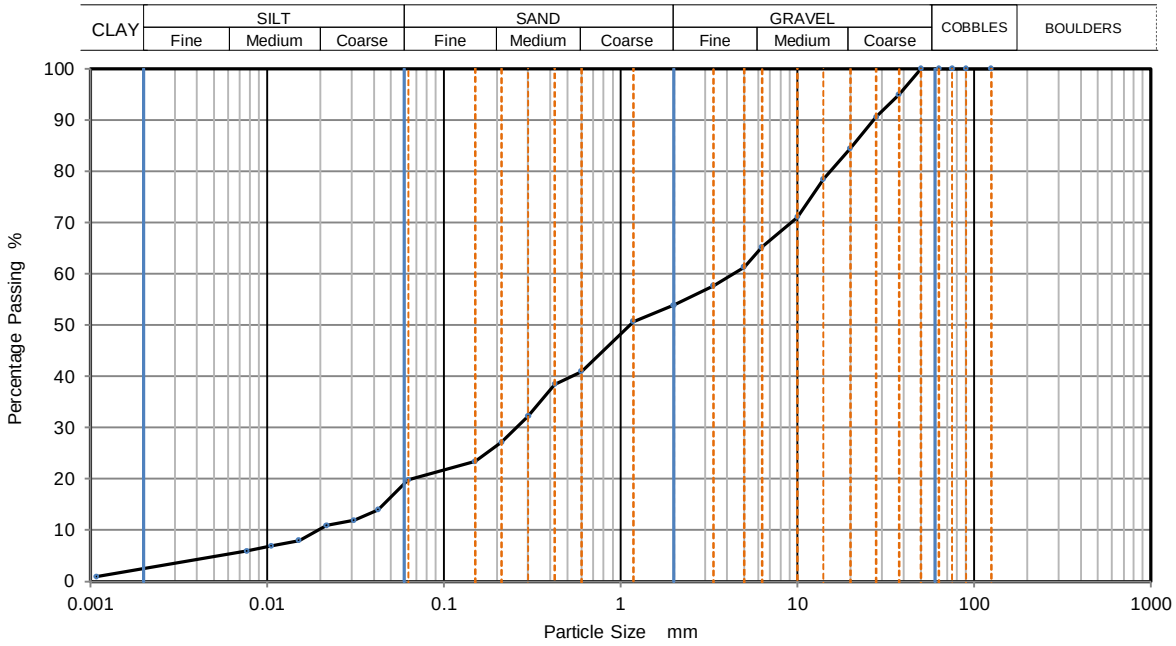
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 16 |
| Gravel | 17 |
| Sand | 40 |
| Silt | 22 |
| Clay | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.497 |
| D30 | mm | 0.0808 |
| D10 | mm | 0.00806 |
| Uniformity Coefficient | | 62 |
| Curvature Coefficient | | 1.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH321 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031365 |
| Soil Description | Brown gravelly clayey SAND | | | Depth, m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031365 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 14 |
| 90 | 100 | 0.0311 | 12 |
| 75 | 100 | 0.0218 | 11 |
| 63 | 100 | 0.0151 | 8 |
| 50 | 100 | 0.0106 | 7 |
| 37.5 | 95 | 0.0077 | 6 |
| 28 | 91 | 0.0011 | 1 |
| 20 | 85 | | |
| 14 | 78 | | |
| 10 | 71 | | |
| 6.3 | 65 | | |
| 5 | 61 | | |
| 3.35 | 58 | | |
| 2 | 54 | | |
| 1.18 | 51 | | |
| 0.6 | 41 | Particle density (assumed) | |
| 0.425 | 39 | 2.67 | Mg/m3 |
| 0.3 | 32 | | |
| 0.212 | 27 | | |
| 0.15 | 23 | | |
| 0.063 | 20 | | |

| Dry Mass of sample, g. | 8376 |
|---|---|

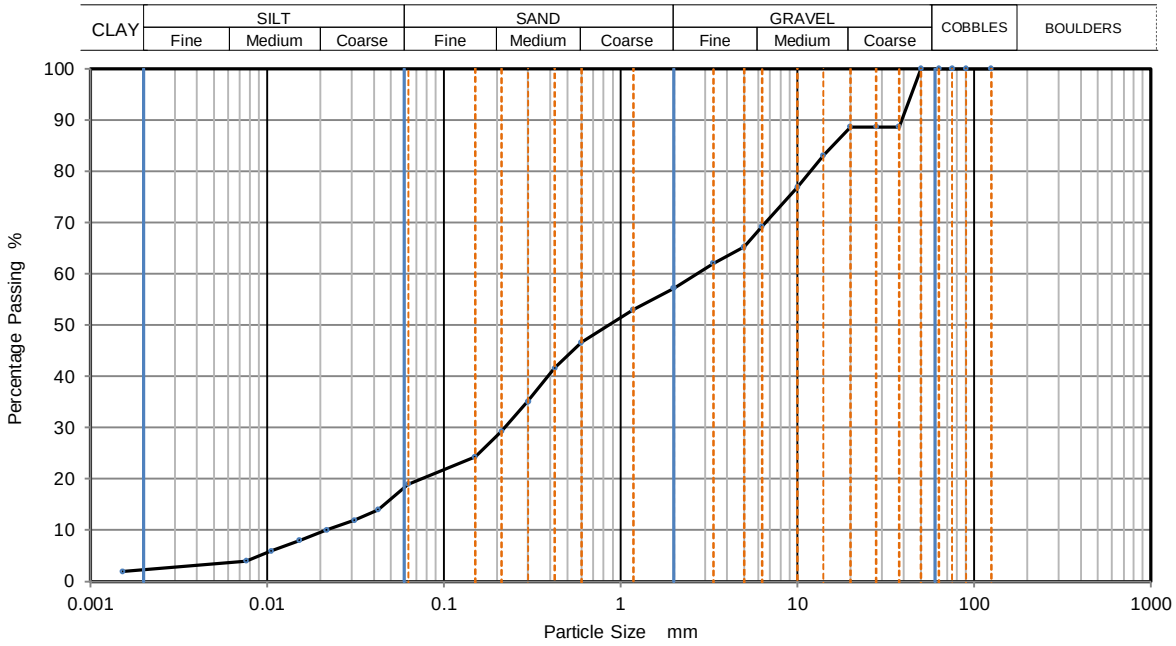
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 46 |
| Sand | 34 |
| Silt | 17 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 4.33 |
| D30 | mm | 0.258 |
| D10 | mm | 0.0198 |
| Uniformity Coefficient | | 220 |
| Curvature Coefficient | | 0.77 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH321 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033494 |
| Soil Description | Brown gravelly clayey SAND | | | Depth, m | 1.60 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033494 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 14 |
| 90 | 100 | 0.0312 | 12 |
| 75 | 100 | 0.0217 | 10 |
| 63 | 100 | 0.0152 | 8 |
| 50 | 100 | 0.0106 | 6 |
| 37.5 | 89 | 0.0076 | 4 |
| 28 | 89 | 0.0015 | 2 |
| 20 | 89 | | |
| 14 | 83 | | |
| 10 | 77 | | |
| 6.3 | 69 | | |
| 5 | 65 | | |
| 3.35 | 62 | | |
| 2 | 57 | | |
| 1.18 | 53 | | |
| 0.6 | 47 | Particle density (assumed) | |
| 0.425 | 42 | 2.67 Mg/m3 | |
| 0.3 | 35 | | |
| 0.212 | 29 | | |
| 0.15 | 24 | | |
| 0.063 | 19 | | |

| Dry Mass of sample, g. | 2663 |
|---|---|

| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 43 |
| Sand | 38 |
| Silt | 17 |
| Clay | 2 |

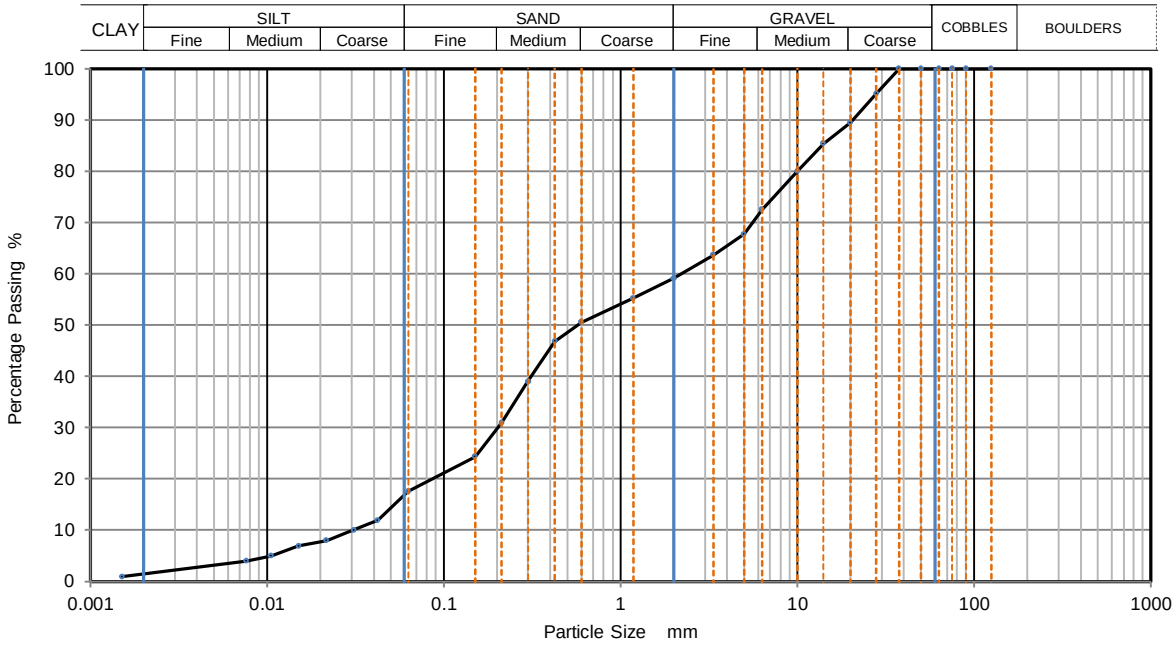
| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.68 |
| D30 | mm | 0.221 |
| D10 | mm | 0.0234 |
| Uniformity Coefficient | | 110 |
| Curvature Coefficient | | 0.78 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

8.78

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH321 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033496 |
| Soil Description | Brown clayey gravelly SAND | | | Depth, m | 3.60 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033496 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 12 |
| 90 | 100 | 0.0309 | 10 |
| 75 | 100 | 0.0216 | 8 |
| 63 | 100 | 0.0151 | 7 |
| 50 | 100 | 0.0105 | 5 |
| 37.5 | 100 | 0.0076 | 4 |
| 28 | 95 | 0.0015 | 1 |
| 20 | 90 | | |
| 14 | 85 | | |
| 10 | 80 | | |
| 6.3 | 73 | | |
| 5 | 68 | | |
| 3.35 | 64 | | |
| 2 | 59 | | |
| 1.18 | 55 | | |
| 0.6 | 51 | Particle density (assumed) | |
| 0.425 | 47 | 2.67 Mg/m3 | |
| 0.3 | 39 | | |
| 0.212 | 31 | | |
| 0.15 | 24 | | |
| 0.063 | 18 | | |

| Dry Mass of sample, g. | 3168 |
|---|---|

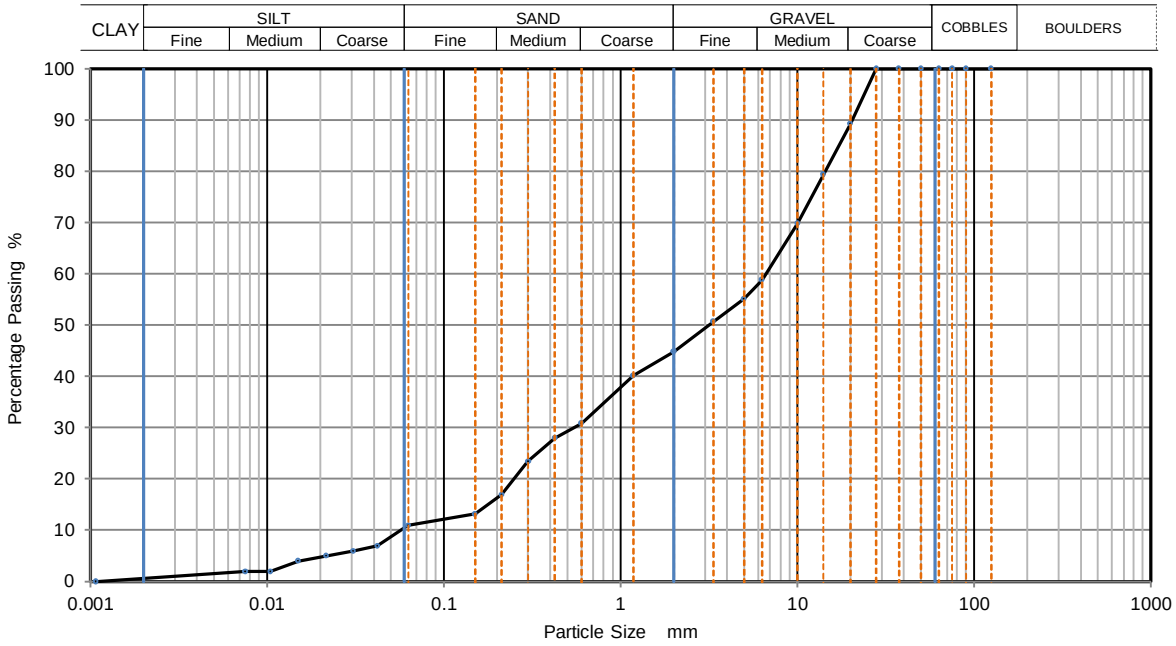
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 41 |
| Sand | 42 |
| Silt | 16 |
| Clay | 2 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.21 |
| D30 | mm | 0.201 |
| D10 | mm | 0.031 |
| Uniformity Coefficient | | 71 |
| Curvature Coefficient | | 0.59 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH322 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031371 |
| Soil Description | Brown gravelly SAND | | | Depth, m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031371 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 7 |
| 90 | 100 | 0.0308 | 6 |
| 75 | 100 | 0.0215 | 5 |
| 63 | 100 | 0.0150 | 4 |
| 50 | 100 | 0.0104 | 2 |
| 37.5 | 100 | 0.0075 | 2 |
| 28 | 100 | 0.0011 | 0 |
| 20 | 89 | | |
| 14 | 79 | | |
| 10 | 70 | | |
| 6.3 | 59 | | |
| 5 | 55 | | |
| 3.35 | 51 | | |
| 2 | 45 | | |
| 1.18 | 40 | | |
| 0.6 | 31 | Particle density (assumed) | |
| 0.425 | 28 | 2.67 Mg/m3 | |
| 0.3 | 24 | | |
| 0.212 | 17 | | |
| 0.15 | 13 | | |
| 0.063 | 11 | | |

| Dry Mass of sample, g. | 2839 |
|---|---|

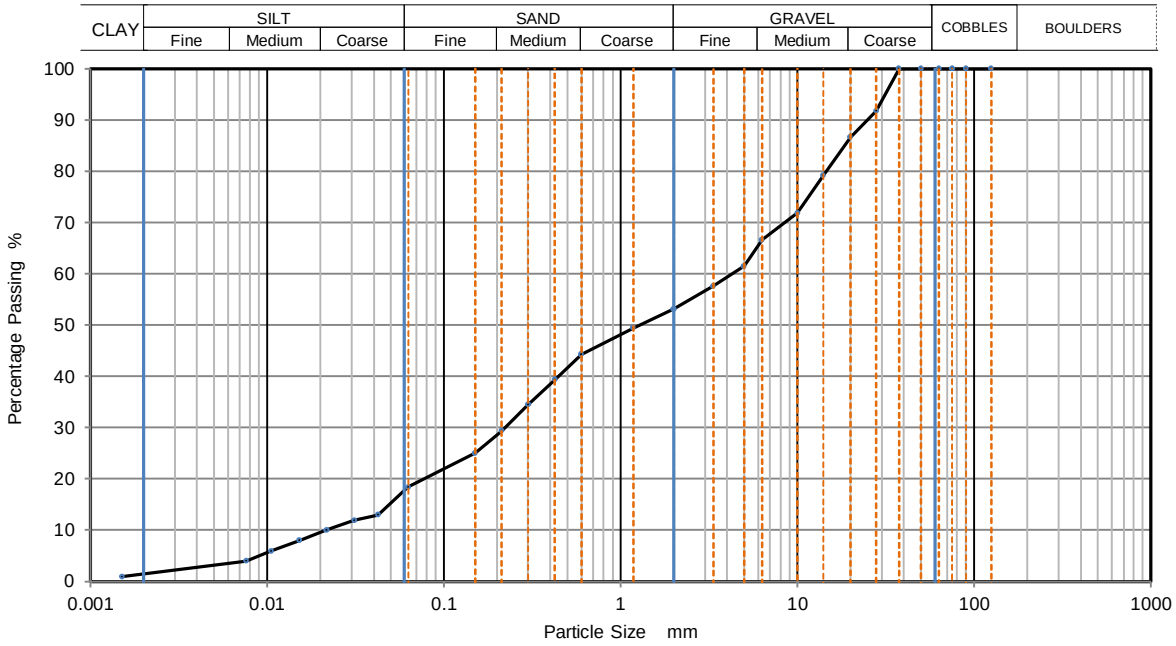
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 55 |
| Sand | 34 |
| Silt | 10 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 6.63 |
| D30 | mm | 0.546 |
| D10 | mm | 0.0568 |
| Uniformity Coefficient | | 120 |
| Curvature Coefficient | | 0.79 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH322 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033801 |
| Soil Description | Brown sandy GRAVEL with possible cobbles | | | Depth, m | 2.40 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033801 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 13 |
| 90 | 100 | 0.0312 | 12 |
| 75 | 100 | 0.0218 | 10 |
| 63 | 100 | 0.0152 | 8 |
| 50 | 100 | 0.0106 | 6 |
| 37.5 | 100 | 0.0076 | 4 |
| 28 | 92 | 0.0015 | 1 |
| 20 | 87 | | |
| 14 | 79 | | |
| 10 | 72 | | |
| 6.3 | 67 | | |
| 5 | 62 | | |
| 3.35 | 58 | | |
| 2 | 53 | | |
| 1.18 | 50 | | |
| 0.6 | 44 | Particle density (assumed) | |
| 0.425 | 39 | 2.67 | Mg/m3 |
| 0.3 | 35 | | |
| 0.212 | 29 | | |
| 0.15 | 25 | | |
| 0.063 | 18 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3680 |

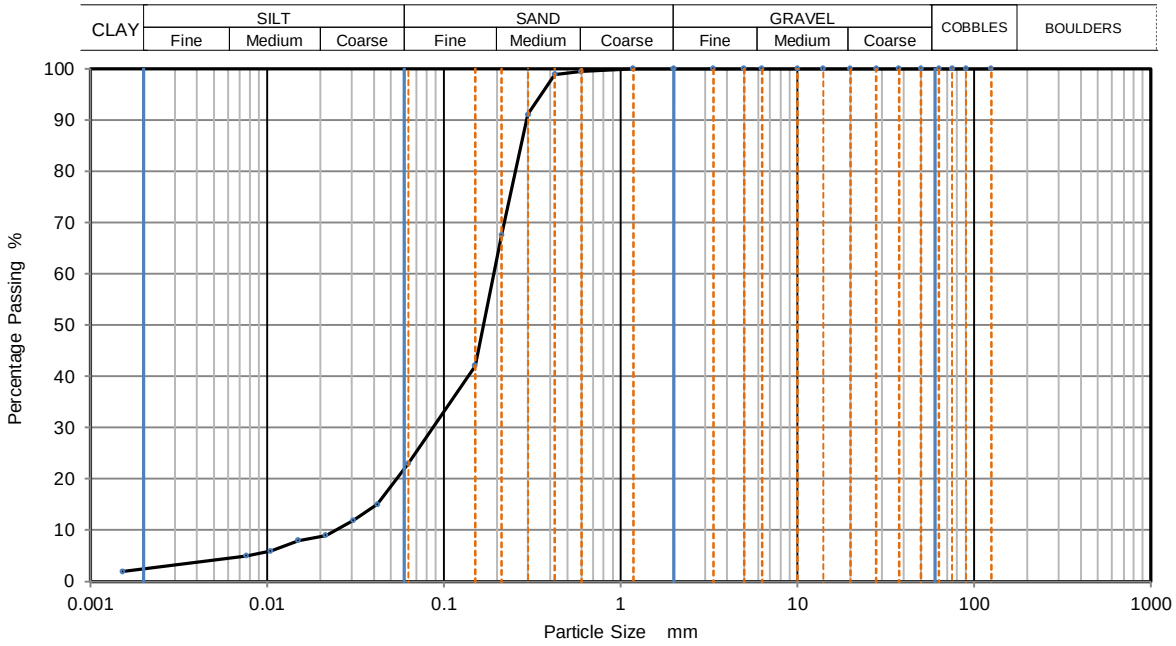
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 47 |
| Sand | 35 |
| Silt | 17 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 4.29 |
| D30 | mm | 0.221 |
| D10 | mm | 0.022 |
| Uniformity Coefficient | | 200 |
| Curvature Coefficient | | 0.52 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH322 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033805 |
| Soil Description | Brown clayey SAND | | | Depth, m | 4.40 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033805 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 15 |
| 90 | 100 | 0.0308 | 12 |
| 75 | 100 | 0.0214 | 9 |
| 63 | 100 | 0.0150 | 8 |
| 50 | 100 | 0.0105 | 6 |
| 37.5 | 100 | 0.0076 | 5 |
| 28 | 100 | 0.0015 | 2 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 100 | | |
| 5 | 100 | | |
| 3.35 | 100 | | |
| 2 | 100 | | |
| 1.18 | 100 | | |
| 0.6 | 100 | Particle density (assumed) | |
| 0.425 | 99 | 2.67 | Mg/m3 |
| 0.3 | 91 | | |
| 0.212 | 68 | | |
| 0.15 | 42 | | |
| 0.063 | 23 | | |

| Dry Mass of sample, g. | 5062 |
|---|---|

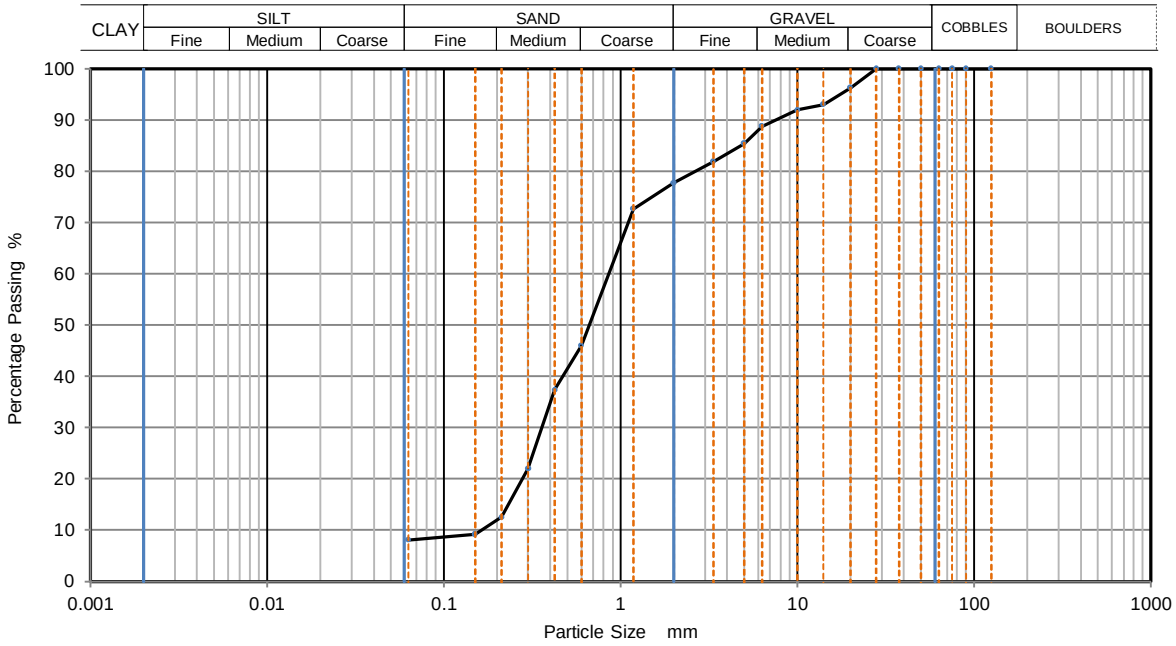
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 0 |
| Sand | 77 |
| Silt | 20 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.191 |
| D30 | mm | 0.0867 |
| D10 | mm | 0.0229 |
| Uniformity Coefficient | | 8.4 |
| Curvature Coefficient | | 1.7 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH323 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031391 |
| Soil Description | Brown gravelly SAND | | | Depth, m | 0.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031391 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 96 | | |
| 14 | 93 | | |
| 10 | 92 | | |
| 6.3 | 89 | | |
| 5 | 85 | | |
| 3.35 | 82 | | |
| 2 | 78 | | |
| 1.18 | 73 | | |
| 0.6 | 46 | | |
| 0.425 | 37 | | |
| 0.3 | 22 | | |
| 0.212 | 13 | | |
| 0.15 | 9 | | |
| 0.063 | 8 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3981 |

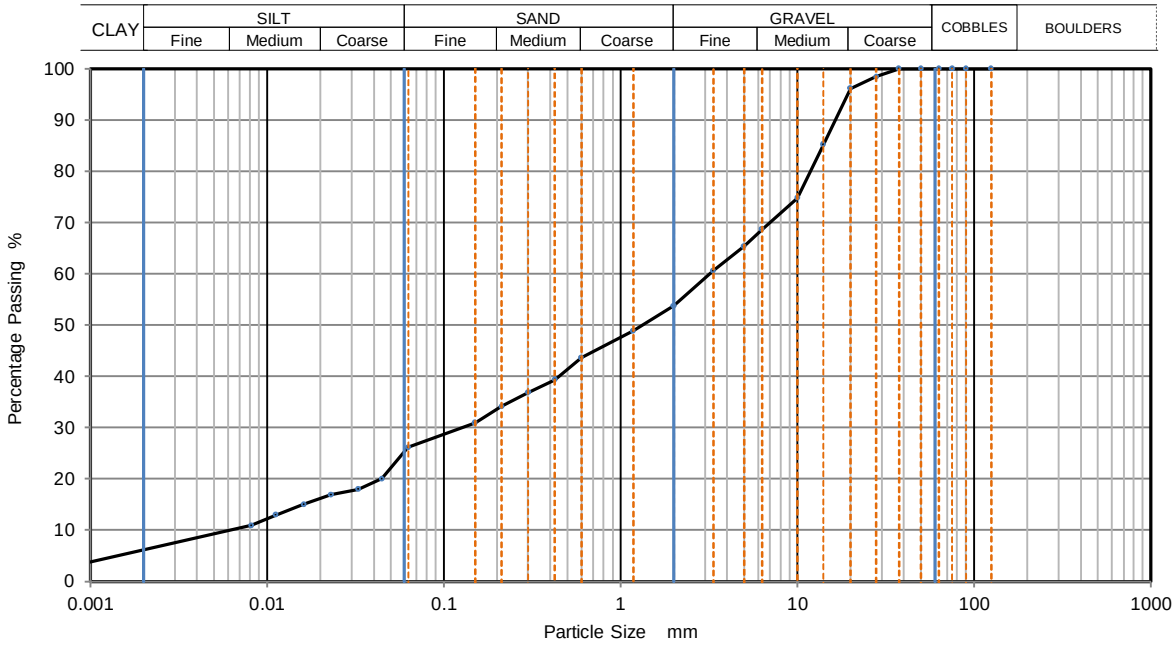
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 22 |
| Sand | 70 |
| | |
| Fines <0.063mm | 8 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.857 |
| D30 | mm | 0.359 |
| D10 | mm | 0.163 |
| Uniformity Coefficient | | 5.2 |
| Curvature Coefficient | | 0.92 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH324 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030367 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth, m | 1.00 |
| Specimen Reference | 5 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030367 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0444 | 20 |
| 90 | 100 | 0.0328 | 18 |
| 75 | 100 | 0.0230 | 17 |
| 63 | 100 | 0.0161 | 15 |
| 50 | 100 | 0.0113 | 13 |
| 37.5 | 100 | 0.0082 | 11 |
| 28 | 98 | 0.0008 | 3 |
| 20 | 96 | | |
| 14 | 85 | | |
| 10 | 75 | | |
| 6.3 | 69 | | |
| 5 | 65 | | |
| 3.35 | 61 | | |
| 2 | 54 | | |
| 1.18 | 49 | | |
| 0.6 | 44 | Particle density (assumed) | |
| 0.425 | 39 | 2.67 | Mg/m3 |
| 0.3 | 37 | | |
| 0.212 | 34 | | |
| 0.15 | 31 | | |
| 0.063 | 26 | | |

| Dry Mass of sample, g. | 6128 |
|---|---|

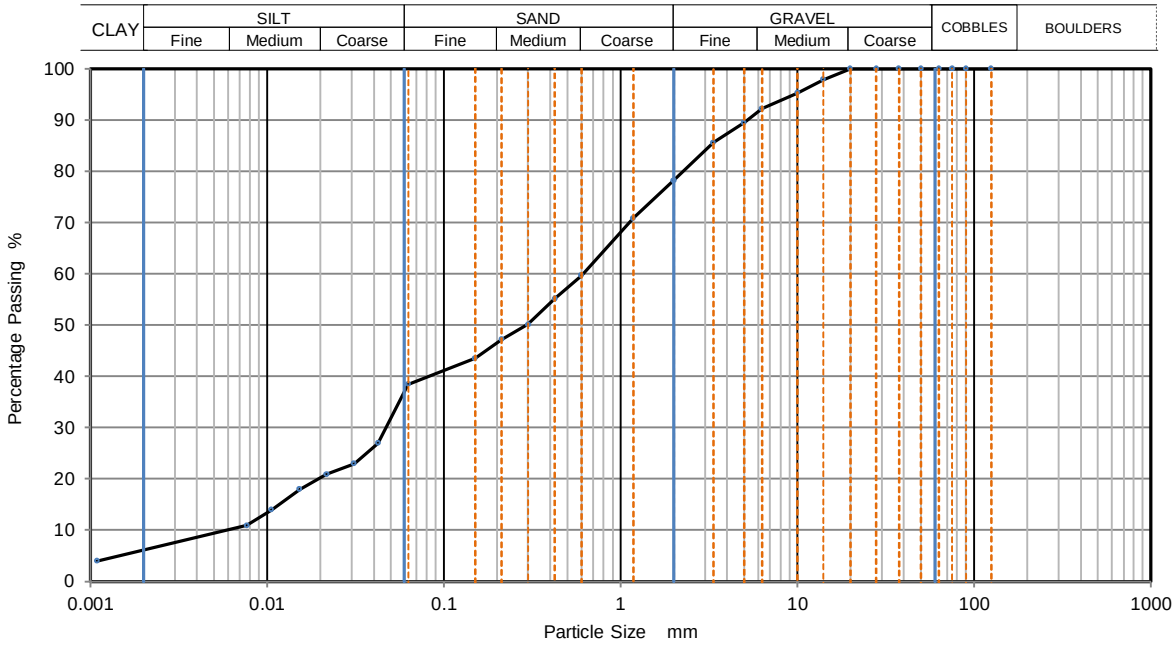
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 46 |
| Sand | 28 |
| Silt | 20 |
| Clay | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 3.19 |
| D30 | mm | 0.127 |
| D10 | mm | 0.00618 |
| Uniformity Coefficient | | 520 |
| Curvature Coefficient | | 0.81 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH324 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030377 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth, m | 2.00 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030377 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0423 | 27 |
| 90 | 100 | 0.0311 | 23 |
| 75 | 100 | 0.0218 | 21 |
| 63 | 100 | 0.0153 | 18 |
| 50 | 100 | 0.0106 | 14 |
| 37.5 | 100 | 0.0077 | 11 |
| 28 | 100 | 0.0011 | 4 |
| 20 | 100 | | |
| 14 | 98 | | |
| 10 | 95 | | |
| 6.3 | 92 | | |
| 5 | 90 | | |
| 3.35 | 86 | | |
| 2 | 78 | | |
| 1.18 | 71 | | |
| 0.6 | 60 | Particle density (assumed) | |
| 0.425 | 55 | 2.67 | Mg/m3 |
| 0.3 | 50 | | |
| 0.212 | 47 | | |
| 0.15 | 44 | | |
| 0.063 | 39 | | |

| Dry Mass of sample, g. | 7261 |
|---|---|

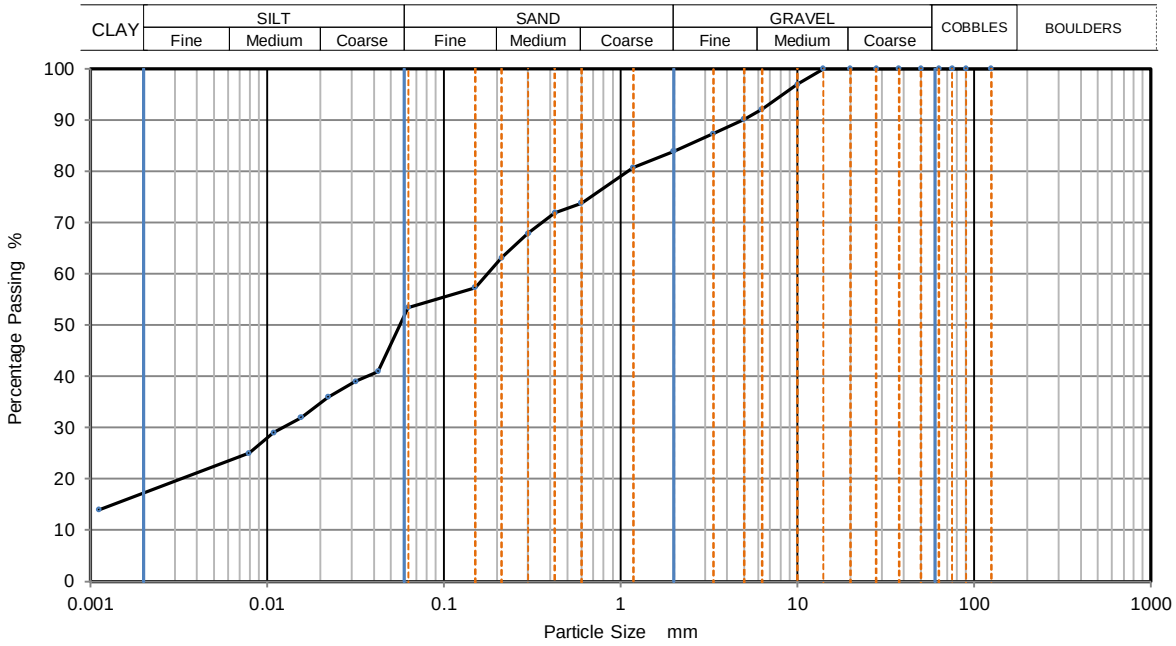
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 22 |
| Sand | 40 |
| Silt | 33 |
| Clay | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.612 |
| D30 | mm | 0.0469 |
| D10 | mm | 0.00578 |
| Uniformity Coefficient | | 110 |
| Curvature Coefficient | | 0.62 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH324 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030382 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030382 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0426 | 41 |
| 90 | 100 | 0.0316 | 39 |
| 75 | 100 | 0.0222 | 36 |
| 63 | 100 | 0.0155 | 32 |
| 50 | 100 | 0.0109 | 29 |
| 37.5 | 100 | 0.0079 | 25 |
| 28 | 100 | 0.0011 | 14 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 97 | | |
| 6.3 | 92 | | |
| 5 | 90 | | |
| 3.35 | 87 | | |
| 2 | 84 | | |
| 1.18 | 81 | | |
| 0.6 | 74 | Particle density (assumed) | |
| 0.425 | 72 | 2.67 | Mg/m3 |
| 0.3 | 68 | | |
| 0.212 | 63 | | |
| 0.15 | 57 | | |
| 0.063 | 53 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 3569 |

| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 16 |
| Sand | 30 |
| Silt | 36 |
| Clay | 17 |

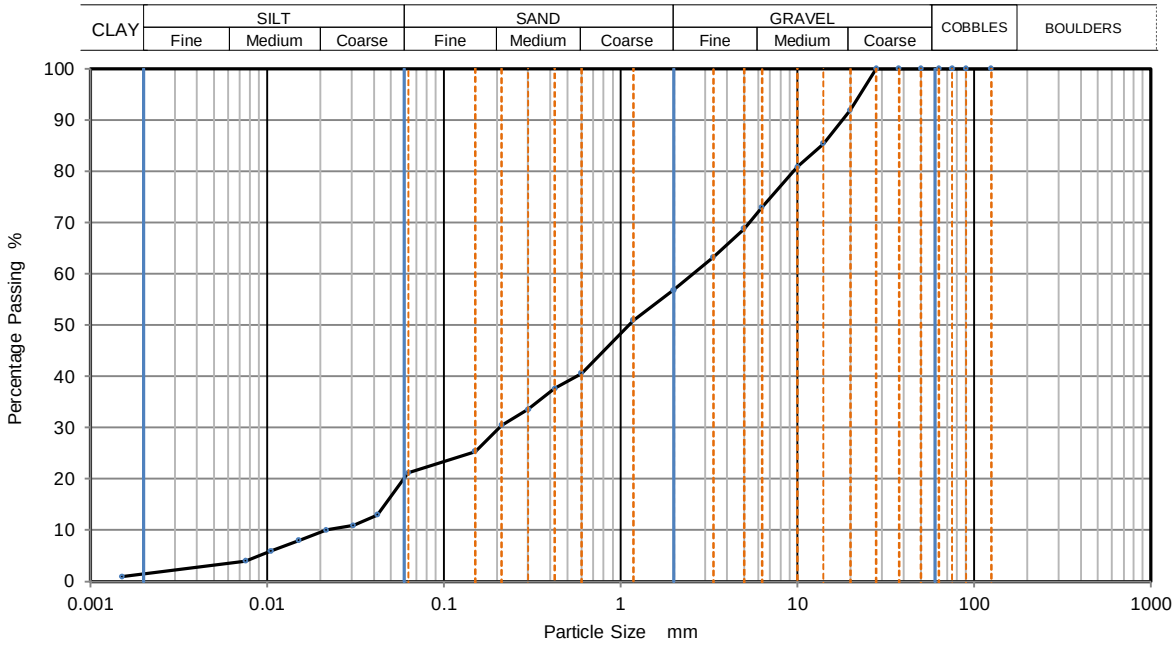
| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.176 |
| D30 | mm | 0.0124 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

7.3

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH324 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030397 |
| Soil Description | Brown clayey SAND + GRAVEL | | | Depth, m | 12.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1030397 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 13 |
| 90 | 100 | 0.0308 | 11 |
| 75 | 100 | 0.0216 | 10 |
| 63 | 100 | 0.0151 | 8 |
| 50 | 100 | 0.0105 | 6 |
| 37.5 | 100 | 0.0076 | 4 |
| 28 | 100 | 0.0015 | 1 |
| 20 | 92 | | |
| 14 | 85 | | |
| 10 | 81 | | |
| 6.3 | 73 | | |
| 5 | 69 | | |
| 3.35 | 63 | | |
| 2 | 57 | | |
| 1.18 | 51 | | |
| 0.6 | 41 | Particle density (assumed) | |
| 0.425 | 38 | 2.67 | Mg/m3 |
| 0.3 | 34 | | |
| 0.212 | 31 | | |
| 0.15 | 25 | | |
| 0.063 | 21 | | |

| Dry Mass of sample, g. | 4495 |
|---|---|

| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 43 |
| Sand | 36 |
| Silt | 19 |
| Clay | 2 |

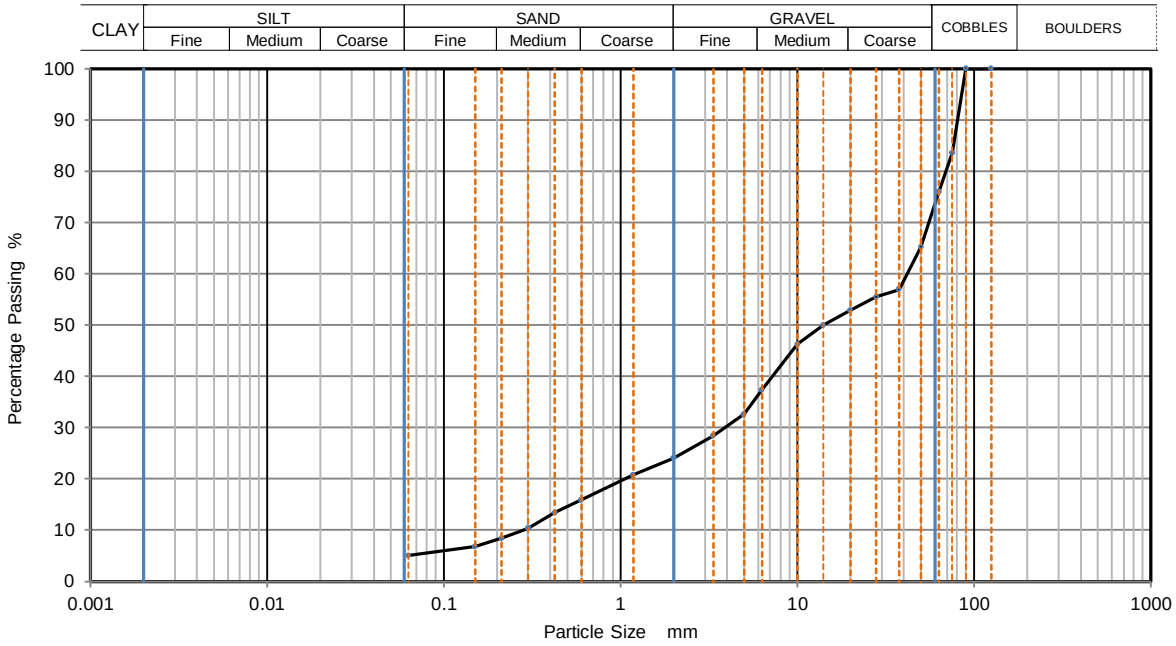
| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.59 |
| D30 | mm | 0.205 |
| D10 | mm | 0.0213 |
| Uniformity Coefficient | | 120 |
| Curvature Coefficient | | 0.76 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

9

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH325 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031337 |
| Soil Description | Sand + gravel with cobbles | | | Depth, m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031337 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 84 | | |
| 63 | 76 | | |
| 50 | 65 | | |
| 37.5 | 57 | | |
| 28 | 56 | | |
| 20 | 53 | | |
| 14 | 50 | | |
| 10 | 46 | | |
| 6.3 | 37 | | |
| 5 | 33 | | |
| 3.35 | 29 | | |
| 2 | 24 | | |
| 1.18 | 21 | | |
| 0.6 | 16 | | |
| 0.425 | 14 | | |
| 0.3 | 10 | | |
| 0.212 | 9 | | |
| 0.15 | 7 | | |
| 0.063 | 5 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 7586 |

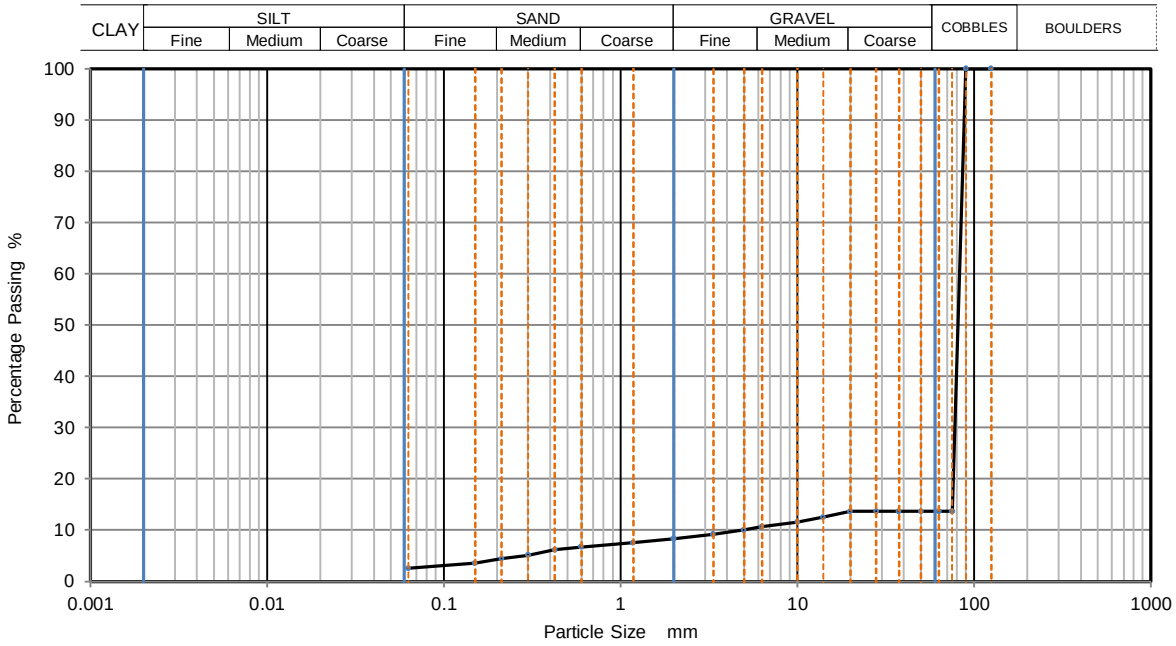
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 24 |
| Gravel | 52 |
| Sand | 19 |
| | |
| Fines <0.063mm | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 41.6 |
| D30 | mm | 3.87 |
| D10 | mm | 0.277 |
| Uniformity Coefficient | | 150 |
| Curvature Coefficient | | 1.3 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH325 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031345 |
| Soil Description | Brown sandy gravelly COBBLES | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031345 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 14 | | |
| 63 | 14 | | |
| 50 | 14 | | |
| 37.5 | 14 | | |
| 28 | 14 | | |
| 20 | 14 | | |
| 14 | 13 | | |
| 10 | 12 | | |
| 6.3 | 11 | | |
| 5 | 10 | | |
| 3.35 | 9 | | |
| 2 | 8 | | |
| 1.18 | 8 | | |
| 0.6 | 7 | | |
| 0.425 | 6 | | |
| 0.3 | 5 | | |
| 0.212 | 5 | | |
| 0.15 | 4 | | |
| 0.063 | 3 | | |

| Dry Mass of sample, g. | 4996 |
|---|---|

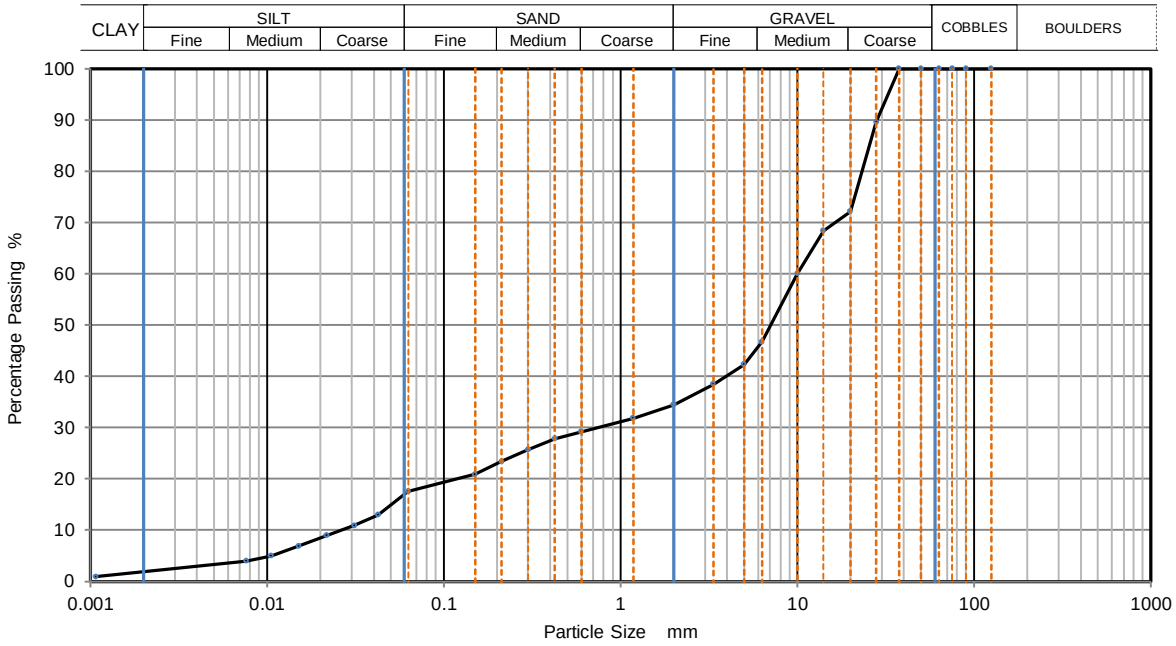
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 86 |
| Gravel | 5 |
| Sand | 6 |
| | |
| Fines <0.063mm | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 82.7 |
| D30 | mm | 77.6 |
| D10 | mm | 4.98 |
| Uniformity Coefficient | | 17 |
| Curvature Coefficient | | 15 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| bam ritchies | PARTICLE SIZE DISTRIBUTION | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH326 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | 1 |
| Soil Description | Brown clayey sandy GRAVEL | | | Depth, m | 1.20 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033818 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 13 |
| 90 | 100 | 0.0312 | 11 |
| 75 | 100 | 0.0217 | 9 |
| 63 | 100 | 0.0151 | 7 |
| 50 | 100 | 0.0105 | 5 |
| 37.5 | 100 | 0.0076 | 4 |
| 28 | 90 | 0.0011 | 1 |
| 20 | 72 | | |
| 14 | 68 | | |
| 10 | 60 | | |
| 6.3 | 47 | | |
| 5 | 42 | | |
| 3.35 | 39 | | |
| 2 | 35 | | |
| 1.18 | 32 | | |
| 0.6 | 29 | Particle density (assumed) | |
| 0.425 | 28 | 2.67 Mg/m3 | |
| 0.3 | 26 | | |
| 0.212 | 23 | | |
| 0.15 | 21 | | |
| 0.063 | 18 | | |

| Dry Mass of sample, g. | 2259 |
|---|---|

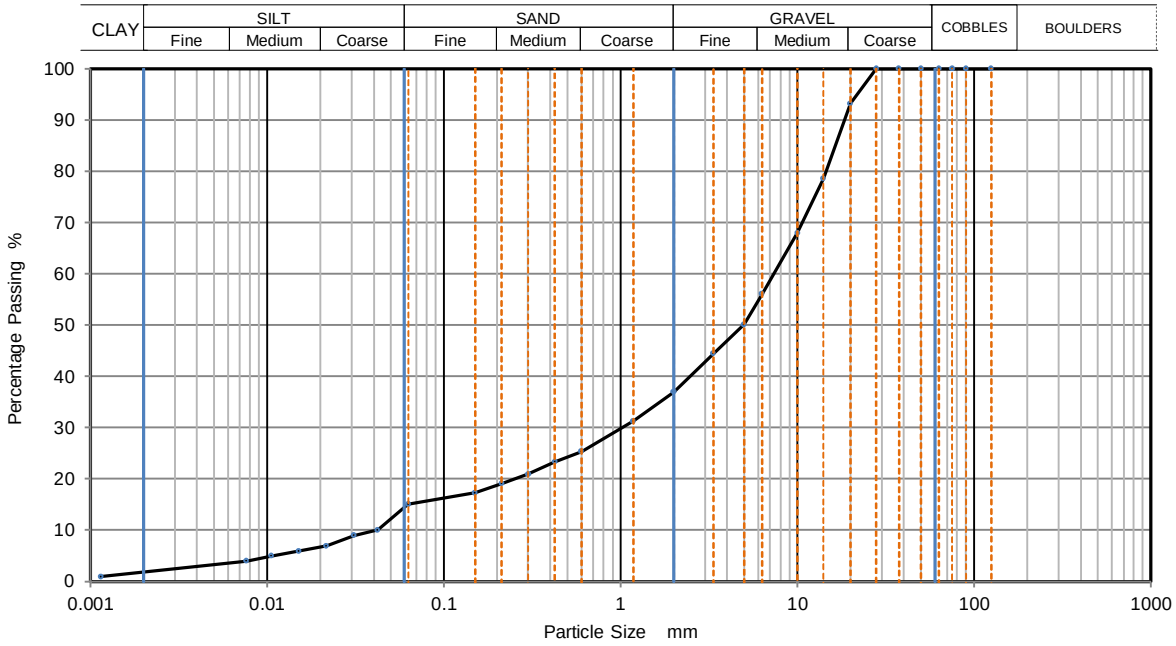
| Sample Proportions | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 66 |
| Sand | 17 |
| Silt | 16 |
| Clay | 2 |

| Grading Analysis | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 10 |
| D30 | mm | 0.739 |
| D10 | mm | 0.0265 |
| Uniformity Coefficient | | 380 |
| Curvature Coefficient | | 2.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH327 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033824 |
| Soil Description | Brown clayey gravelly SAND | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033824 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 10 |
| 90 | 100 | 0.0311 | 9 |
| 75 | 100 | 0.0216 | 7 |
| 63 | 100 | 0.0151 | 6 |
| 50 | 100 | 0.0106 | 5 |
| 37.5 | 100 | 0.0076 | 4 |
| 28 | 100 | 0.0011 | 1 |
| 20 | 93 | | |
| 14 | 79 | | |
| 10 | 68 | | |
| 6.3 | 56 | | |
| 5 | 50 | | |
| 3.35 | 45 | | |
| 2 | 37 | | |
| 1.18 | 31 | | |
| 0.6 | 25 | Particle density (assumed) | |
| 0.425 | 23 | 2.67 Mg/m3 | |
| 0.3 | 21 | | |
| 0.212 | 19 | | |
| 0.15 | 17 | | |
| 0.063 | 15 | | |

| Dry Mass of sample, g. | 2046 |
|---|---|

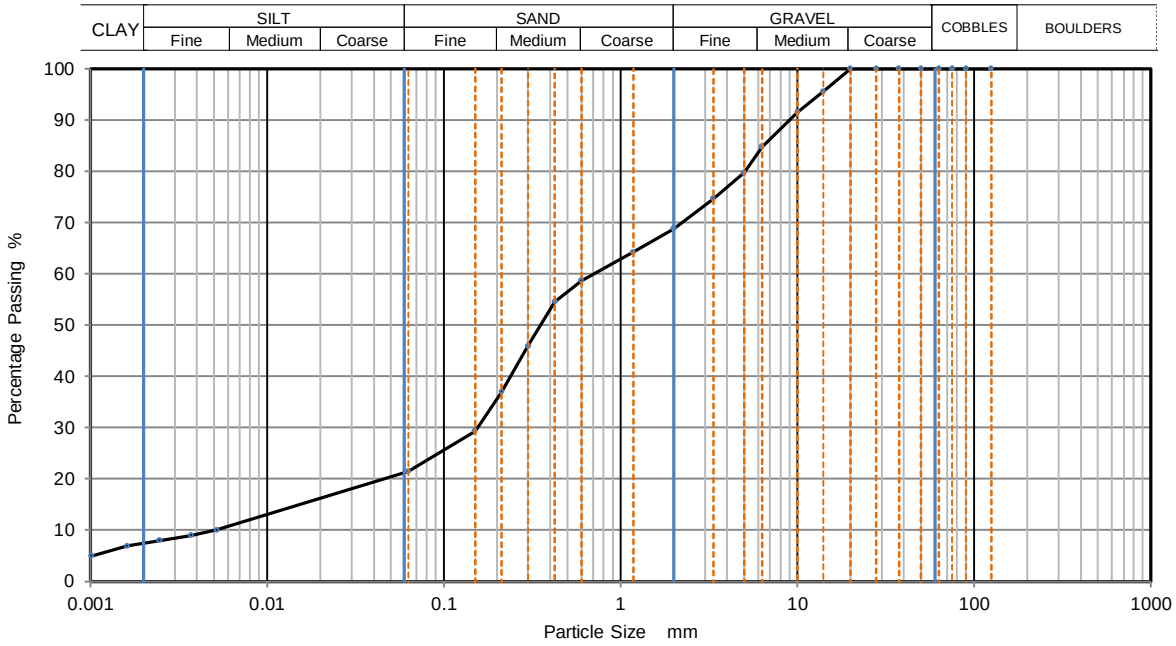
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 63 |
| Sand | 22 |
| Silt | 13 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 7.32 |
| D30 | mm | 1.02 |
| D10 | mm | 0.0419 |
| Uniformity Coefficient | | 170 |
| Curvature Coefficient | | 3.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH327 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033826 |
| Soil Description | Brown clayey gravelly SAND | | | Depth, m | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033826 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0052 | 10 |
| 90 | 100 | 0.0037 | 9 |
| 75 | 100 | 0.0025 | 8 |
| 63 | 100 | 0.0016 | 7 |
| 50 | 100 | 0.0010 | 5 |
| 37.5 | 100 | 0.0007 | 4 |
| 28 | 100 | 0.0001 | 1 |
| 20 | 100 | | |
| 14 | 96 | | |
| 10 | 92 | | |
| 6.3 | 85 | | |
| 5 | 80 | | |
| 3.35 | 75 | | |
| 2 | 69 | | |
| 1.18 | 64 | | |
| 0.6 | 59 | Particle density (assumed) | |
| 0.425 | 55 | 25.11 | Mg/m3 |
| 0.3 | 46 | | |
| 0.212 | 37 | | |
| 0.15 | 29 | | |
| 0.063 | 22 | | |

| Dry Mass of sample, g. | 2631 |
|---|---|

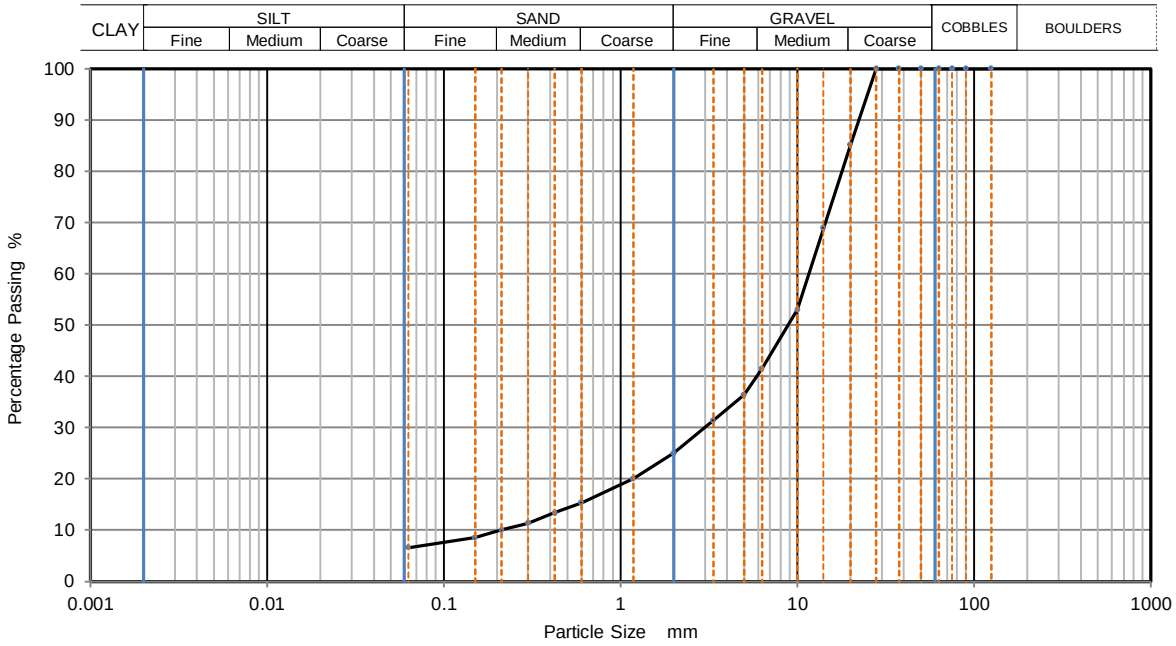
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 31 |
| Sand | 47 |
| Silt | 14 |
| Clay | 7 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.703 |
| D30 | mm | 0.154 |
| D10 | mm | 0.00472 |
| Uniformity Coefficient | | 150 |
| Curvature Coefficient | | 7.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH327 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033828 |
| Soil Description | Brown clayey sandy GRAVEL | | | Depth, m | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1033828 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 85 | | |
| 14 | 69 | | |
| 10 | 53 | | |
| 6.3 | 42 | | |
| 5 | 36 | | |
| 3.35 | 31 | | |
| 2 | 25 | | |
| 1.18 | 20 | | |
| 0.6 | 15 | | |
| 0.425 | 13 | | |
| 0.3 | 11 | | |
| 0.212 | 10 | | |
| 0.15 | 9 | | |
| 0.063 | 7 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 2294 |

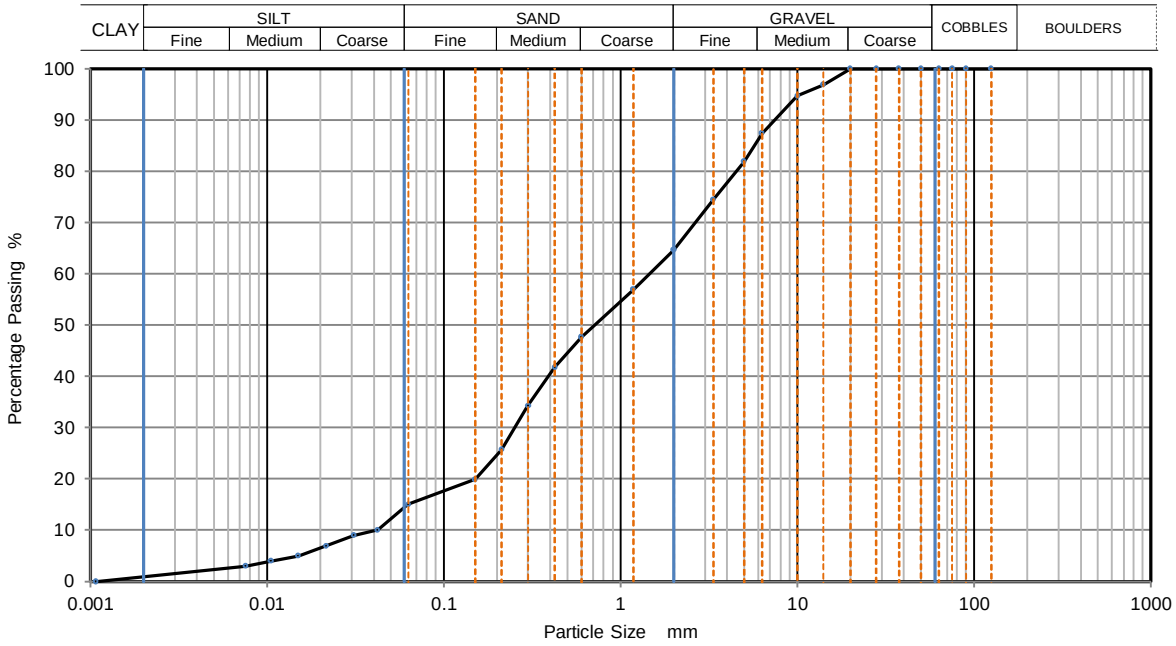
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 75 |
| Sand | 18 |
| | |
| Fines <0.063mm | 7 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 11.6 |
| D30 | mm | 2.99 |
| D10 | mm | 0.206 |
| Uniformity Coefficient | | 56 |
| Curvature Coefficient | | 3.7 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH328 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033830 |
| Soil Description | Brown clayey gravelly SAND | | | Depth, m | 1.20 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033830 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0421 | 10 |
| 90 | 100 | 0.0309 | 9 |
| 75 | 100 | 0.0215 | 7 |
| 63 | 100 | 0.0150 | 5 |
| 50 | 100 | 0.0105 | 4 |
| 37.5 | 100 | 0.0076 | 3 |
| 28 | 100 | 0.0011 | 0 |
| 20 | 100 | | |
| 14 | 97 | | |
| 10 | 95 | | |
| 6.3 | 87 | | |
| 5 | 82 | | |
| 3.35 | 75 | | |
| 2 | 65 | | |
| 1.18 | 57 | | |
| 0.6 | 48 | Particle density (assumed) | |
| 0.425 | 42 | 2.67 | Mg/m3 |
| 0.3 | 34 | | |
| 0.212 | 26 | | |
| 0.15 | 20 | | |
| 0.063 | 15 | | |

| Dry Mass of sample, g. | 2078 |
|---|---|

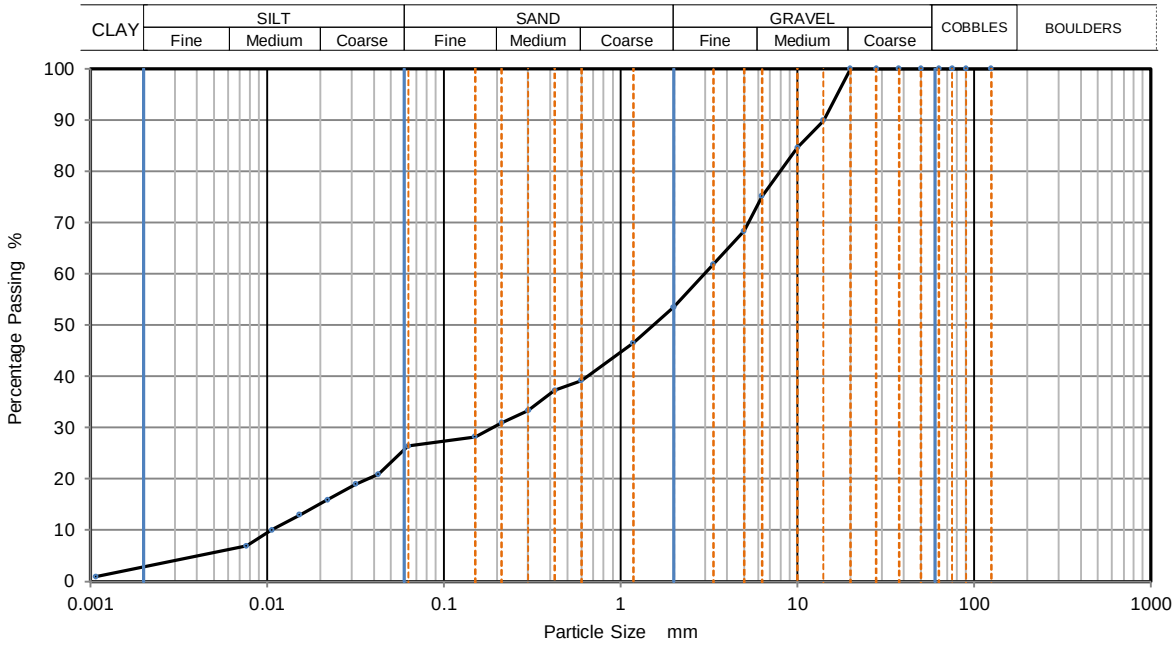
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 35 |
| Sand | 50 |
| Silt | 14 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 1.45 |
| D30 | mm | 0.252 |
| D10 | mm | 0.0424 |
| Uniformity Coefficient | | 34 |
| Curvature Coefficient | | 1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | BH328 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033832 |
| Soil Description | Brown clayey sandy GRAVEL | | | Depth, m | 3.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1033832 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 21 |
| 90 | 100 | 0.0316 | 19 |
| 75 | 100 | 0.0220 | 16 |
| 63 | 100 | 0.0153 | 13 |
| 50 | 100 | 0.0107 | 10 |
| 37.5 | 100 | 0.0076 | 7 |
| 28 | 100 | 0.0011 | 1 |
| 20 | 100 | | |
| 14 | 90 | | |
| 10 | 85 | | |
| 6.3 | 75 | | |
| 5 | 68 | | |
| 3.35 | 62 | | |
| 2 | 54 | | |
| 1.18 | 47 | | |
| 0.6 | 39 | Particle density (assumed) | |
| 0.425 | 37 | 2.67 Mg/m3 | |
| 0.3 | 33 | | |
| 0.212 | 31 | | |
| 0.15 | 28 | | |
| 0.063 | 26 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 2573 |

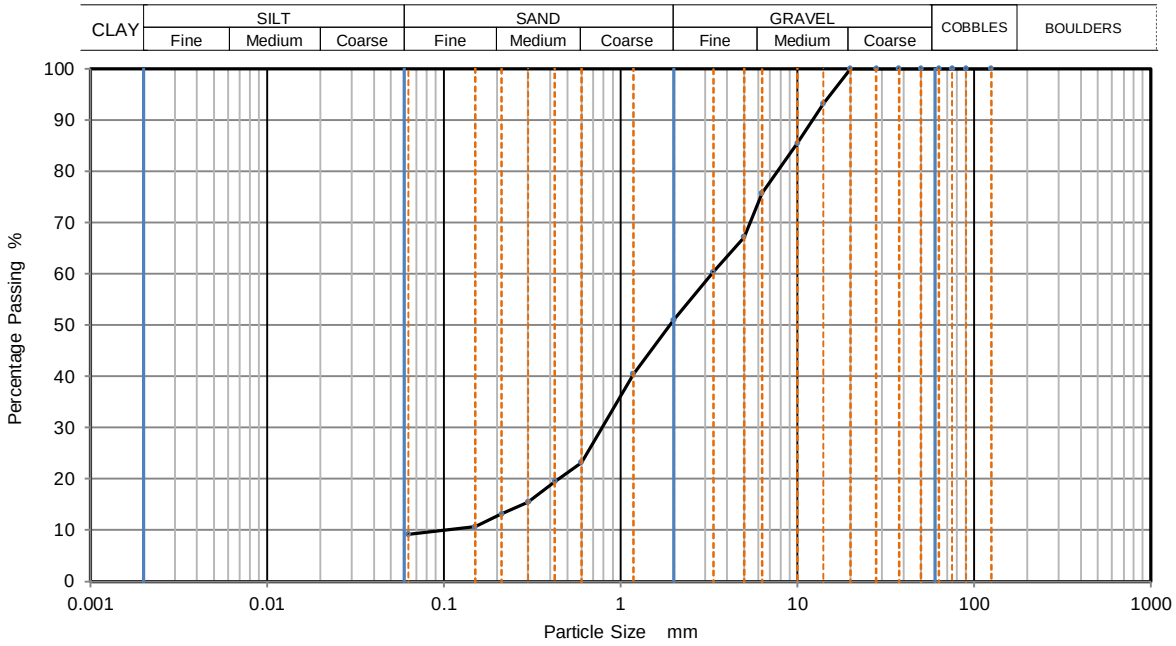
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 47 |
| Sand | 27 |
| Silt | 24 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 3 |
| D30 | mm | 0.187 |
| D10 | mm | 0.0106 |
| Uniformity Coefficient | | 280 |
| Curvature Coefficient | | 1.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | SoilSamp05 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1034019 |
| Soil Description | Brown TOPSOIL | | | Depth, m | 0.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1034019 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 100 | | |
| 14 | 93 | | |
| 10 | 86 | | |
| 6.3 | 76 | | |
| 5 | 67 | | |
| 3.35 | 60 | | |
| 2 | 51 | | |
| 1.18 | 41 | | |
| 0.6 | 23 | | |
| 0.425 | 20 | | |
| 0.3 | 16 | | |
| 0.212 | 13 | | |
| 0.15 | 11 | | |
| 0.063 | 9 | | |

| Dry Mass of sample, g. | 1286 |
|---|---|

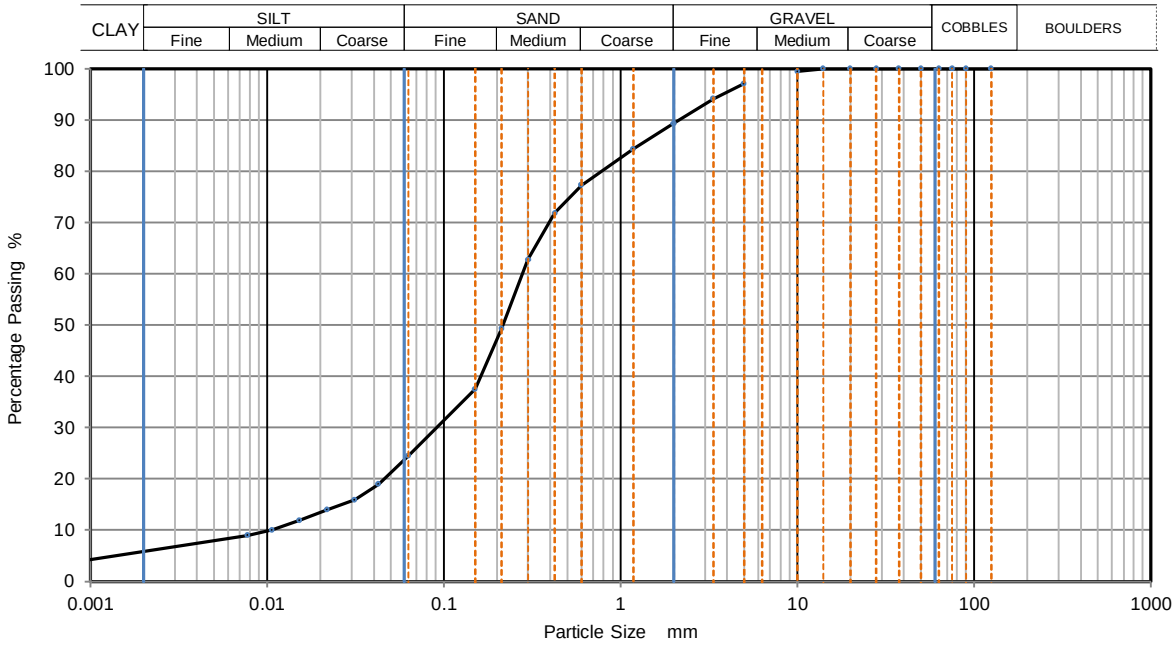
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 49 |
| Sand | 42 |
| | |
| Fines <0.063mm | 9 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 3.28 |
| D30 | mm | 0.782 |
| D10 | mm | 0.0983 |
| Uniformity Coefficient | | 33 |
| Curvature Coefficient | | 1.9 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031262 |
| Soil Description | Brown gravelly clayey SAND | | | Depth, m | 1.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031262 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 19 |
| 90 | 100 | 0.0313 | 16 |
| 75 | 100 | 0.0218 | 14 |
| 63 | 100 | 0.0152 | 12 |
| 50 | 100 | 0.0107 | 10 |
| 37.5 | 100 | 0.0077 | 9 |
| 28 | 100 | 0.0009 | 4 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| | | | |
| 5 | 97 | | |
| 3.35 | 94 | | |
| 2 | 89 | | |
| 1.18 | 84 | | |
| 0.6 | 77 | Particle density (assumed) | |
| 0.425 | 72 | 2.67 Mg/m3 | |
| 0.3 | 63 | | |
| 0.212 | 49 | | |
| 0.15 | 38 | | |
| 0.063 | 25 | | |

| Dry Mass of sample, g. | 16155 |
|---|---|

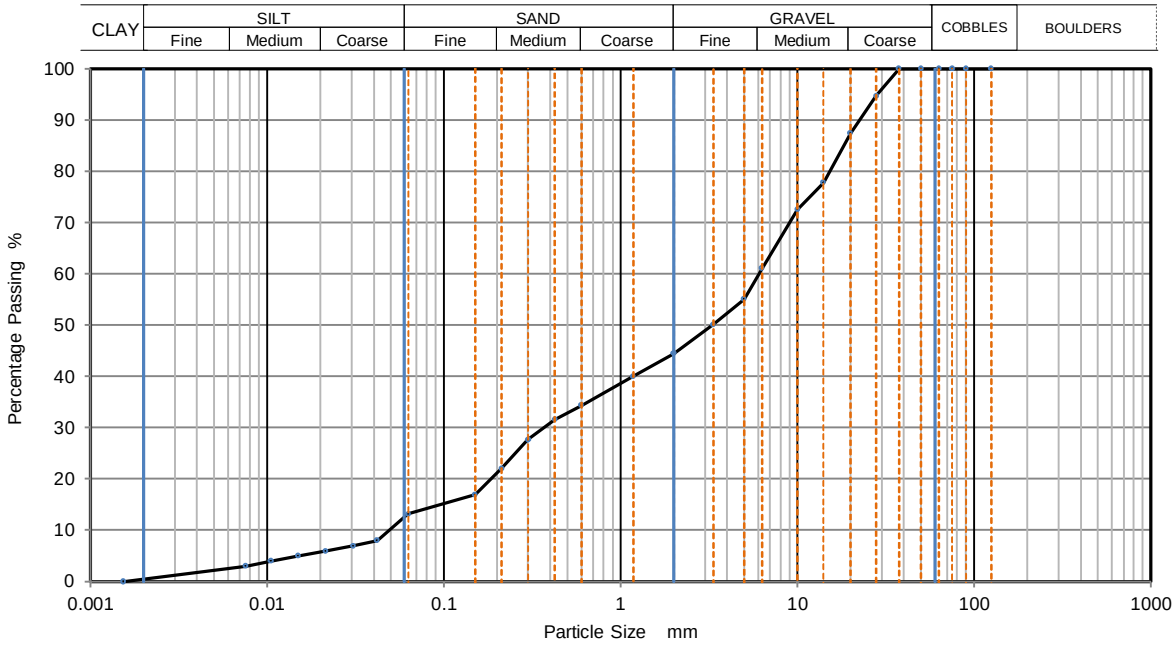
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 11 |
| Sand | 65 |
| Silt | 19 |
| Clay | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.279 |
| D30 | mm | 0.0908 |
| D10 | mm | 0.0105 |
| Uniformity Coefficient | | 27 |
| Curvature Coefficient | | 2.8 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031263 |
| Soil Description | | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031263 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0419 | 8 |
| 90 | 100 | 0.0307 | 7 |
| 75 | 100 | 0.0215 | 6 |
| 63 | 100 | 0.0150 | 5 |
| 50 | 100 | 0.0105 | 4 |
| 37.5 | 100 | 0.0076 | 3 |
| 28 | 95 | 0.0015 | 0 |
| 20 | 87 | | |
| 14 | 78 | | |
| 10 | 73 | | |
| 6.3 | 61 | | |
| 5 | 55 | | |
| 3.35 | 50 | | |
| 2 | 45 | | |
| 1.18 | 40 | | |
| 0.6 | 34 | Particle density (assumed) | |
| 0.425 | 32 | 2.67 | Mg/m3 |
| 0.3 | 28 | | |
| 0.212 | 22 | | |
| 0.15 | 17 | | |
| 0.063 | 13 | | |

| Dry Mass of sample, g. | 9990 |
|---|---|

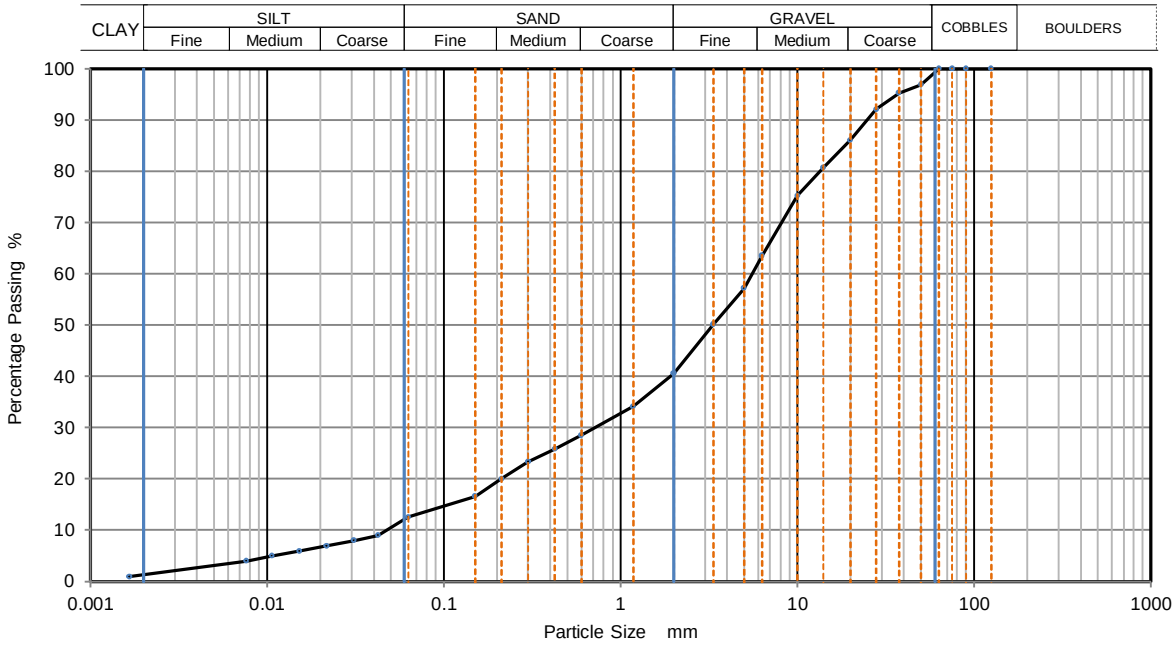
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 56 |
| Sand | 31 |
| Silt | 12 |
| Clay | 1 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 6.04 |
| D30 | mm | 0.368 |
| D10 | mm | 0.0479 |
| Uniformity Coefficient | | 130 |
| Curvature Coefficient | | 0.47 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031274 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 1.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031274 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0422 | 9 |
| 90 | 100 | 0.0310 | 8 |
| 75 | 100 | 0.0217 | 7 |
| 63 | 100 | 0.0152 | 6 |
| 50 | 97 | 0.0106 | 5 |
| 37.5 | 95 | 0.0077 | 4 |
| 28 | 92 | 0.0017 | 1 |
| 20 | 86 | | |
| 14 | 81 | | |
| 10 | 75 | | |
| 6.3 | 64 | | |
| 5 | 57 | | |
| 3.35 | 50 | | |
| 2 | 41 | | |
| 1.18 | 34 | | |
| 0.6 | 29 | Particle density (assumed) | |
| 0.425 | 26 | 2.67 Mg/m3 | |
| 0.3 | 23 | | |
| 0.212 | 20 | | |
| 0.15 | 17 | | |
| 0.063 | 13 | | |

| Dry Mass of sample, g. | 12667 |
|---|---|

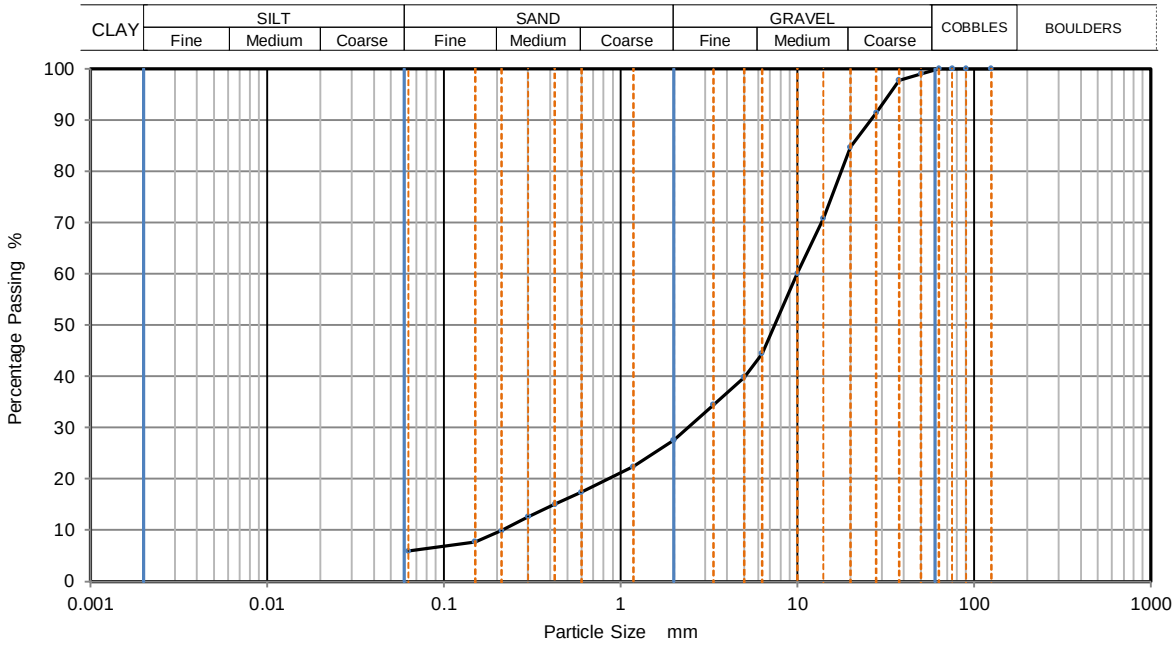
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 59 |
| Sand | 28 |
| Silt | 11 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 5.54 |
| D30 | mm | 0.711 |
| D10 | mm | 0.0478 |
| Uniformity Coefficient | | 120 |
| Curvature Coefficient | | 1.9 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031276 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 2.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031276 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 99 | | |
| 37.5 | 98 | | |
| 28 | 91 | | |
| 20 | 85 | | |
| 14 | 71 | | |
| 10 | 60 | | |
| 6.3 | 45 | | |
| 5 | 40 | | |
| 3.35 | 35 | | |
| 2 | 28 | | |
| 1.18 | 22 | | |
| 0.6 | 17 | | |
| 0.425 | 15 | | |
| 0.3 | 13 | | |
| 0.212 | 10 | | |
| 0.15 | 8 | | |
| 0.063 | 6 | | |

| Dry Mass of sample, g. | 9099 |
|---|---|

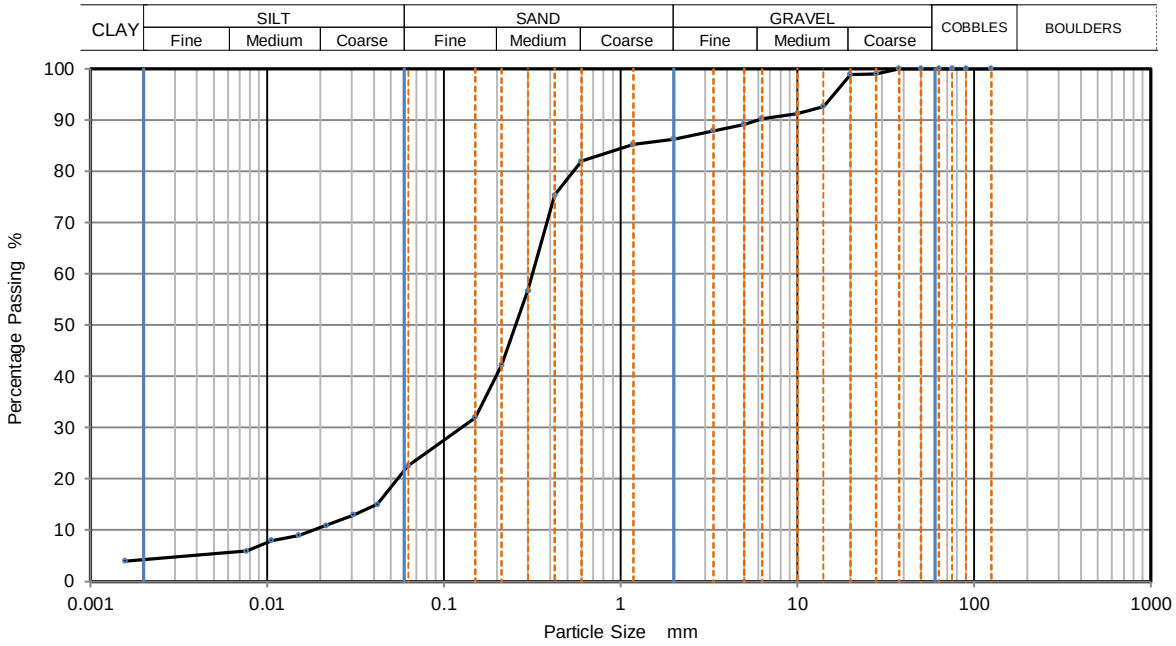
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 72 |
| Sand | 22 |
| | |
| Fines <0.063mm | 6 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 9.97 |
| D30 | mm | 2.39 |
| D10 | mm | 0.215 |
| Uniformity Coefficient | | 46 |
| Curvature Coefficient | | 2.7 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP306 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031281 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 2.40 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031281 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0420 | 15 |
| 90 | 100 | 0.0309 | 13 |
| 75 | 100 | 0.0216 | 11 |
| 63 | 100 | 0.0151 | 9 |
| 50 | 100 | 0.0106 | 8 |
| 37.5 | 100 | 0.0077 | 6 |
| 28 | 99 | 0.0016 | 4 |
| 20 | 99 | | |
| 14 | 93 | | |
| 10 | 91 | | |
| 6.3 | 90 | | |
| 5 | 89 | | |
| 3.35 | 88 | | |
| 2 | 86 | | |
| 1.18 | 85 | | |
| 0.6 | 82 | Particle density (assumed) | |
| 0.425 | 75 | 2.67 Mg/m3 | |
| 0.3 | 57 | | |
| 0.212 | 42 | | |
| 0.15 | 32 | | |
| 0.063 | 23 | | |

| Dry Mass of sample, g. | 12619 |
|---|---|

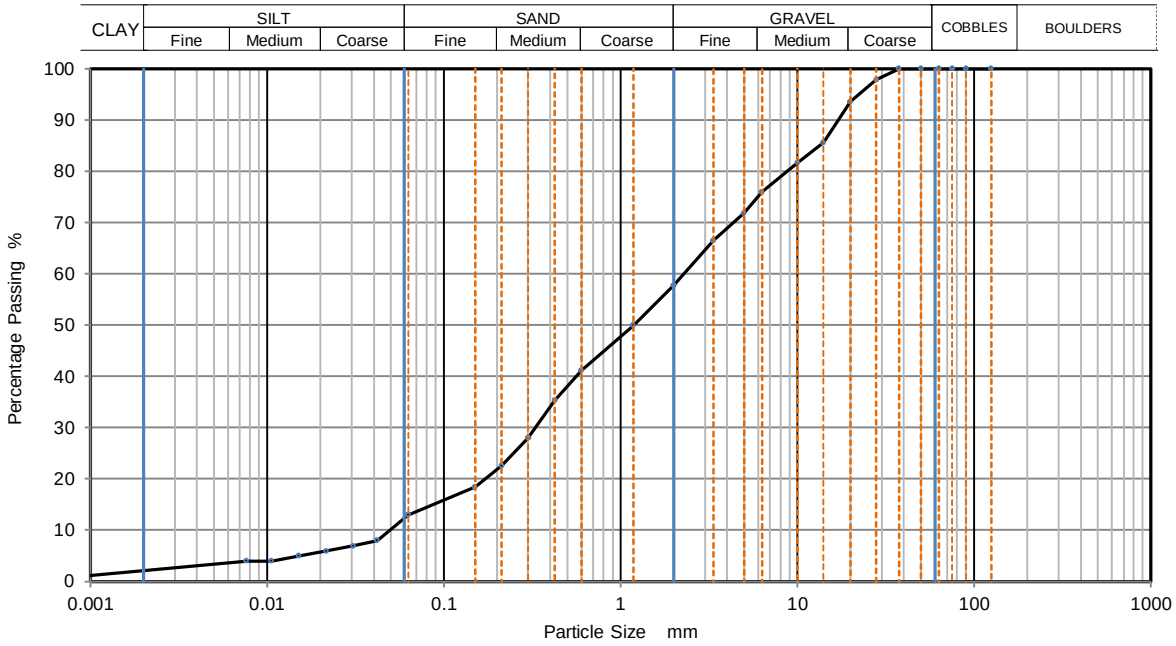
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 14 |
| Sand | 64 |
| Silt | 19 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.319 |
| D30 | mm | 0.125 |
| D10 | mm | 0.0186 |
| Uniformity Coefficient | | 17 |
| Curvature Coefficient | | 2.6 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP307 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031283 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 1.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031283 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0419 | 8 |
| 90 | 100 | 0.0307 | 7 |
| 75 | 100 | 0.0216 | 6 |
| 63 | 100 | 0.0151 | 5 |
| 50 | 100 | 0.0106 | 4 |
| 37.5 | 100 | 0.0077 | 4 |
| 28 | 98 | 0.0009 | 1 |
| 20 | 94 | | |
| 14 | 86 | | |
| 10 | 82 | | |
| 6.3 | 76 | | |
| 5 | 72 | | |
| 3.35 | 67 | | |
| 2 | 58 | | |
| 1.18 | 50 | | |
| 0.6 | 41 | Particle density (assumed) | |
| 0.425 | 35 | 2.67 | Mg/m3 |
| 0.3 | 28 | | |
| 0.212 | 23 | | |
| 0.15 | 19 | | |
| 0.063 | 13 | | |

| Dry Mass of sample, g. | 11590 |
|---|---|

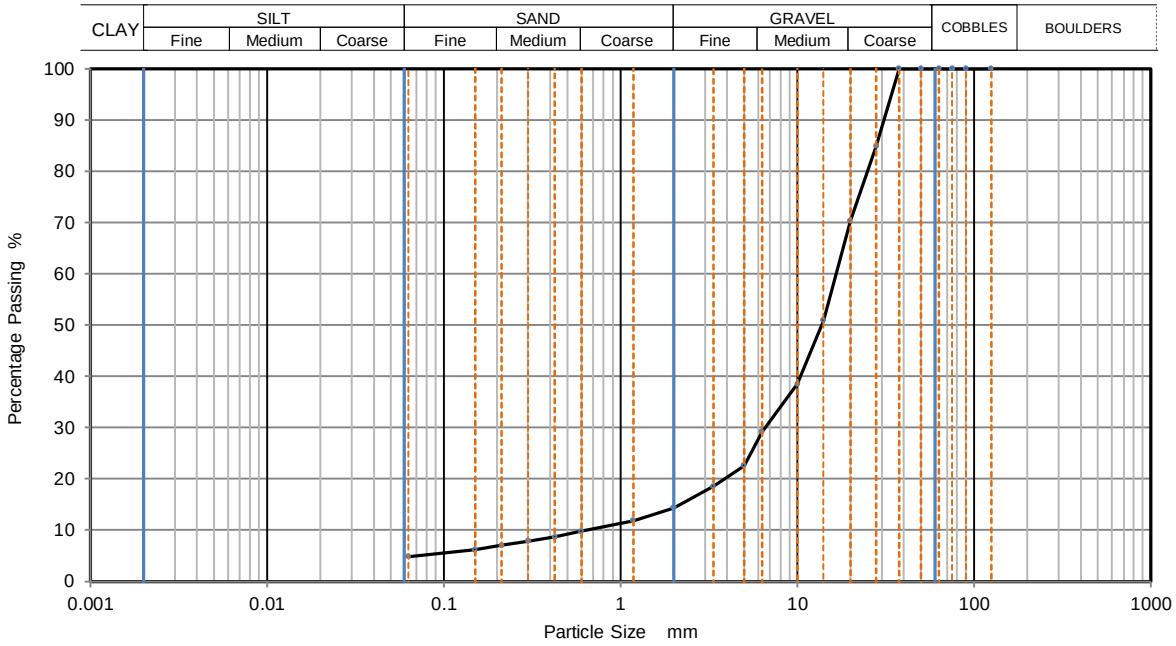
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 42 |
| Sand | 45 |
| Silt | 11 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 2.28 |
| D30 | mm | 0.329 |
| D10 | mm | 0.0489 |
| Uniformity Coefficient | | 47 |
| Curvature Coefficient | | 0.97 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP307 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031285 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth, m | 2.80 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031285 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 85 | | |
| 20 | 70 | | |
| 14 | 51 | | |
| 10 | 39 | | |
| 6.3 | 29 | | |
| 5 | 23 | | |
| 3.35 | 19 | | |
| 2 | 14 | | |
| 1.18 | 12 | | |
| 0.6 | 10 | Particle density (assumed) | |
| 0.425 | 9 | 2.67 | Mg/m3 |
| 0.3 | 8 | | |
| 0.212 | 7 | | |
| 0.15 | 6 | | |
| 0.063 | 5 | | |

| Dry Mass of sample, g. | 13812 |
|---|---|

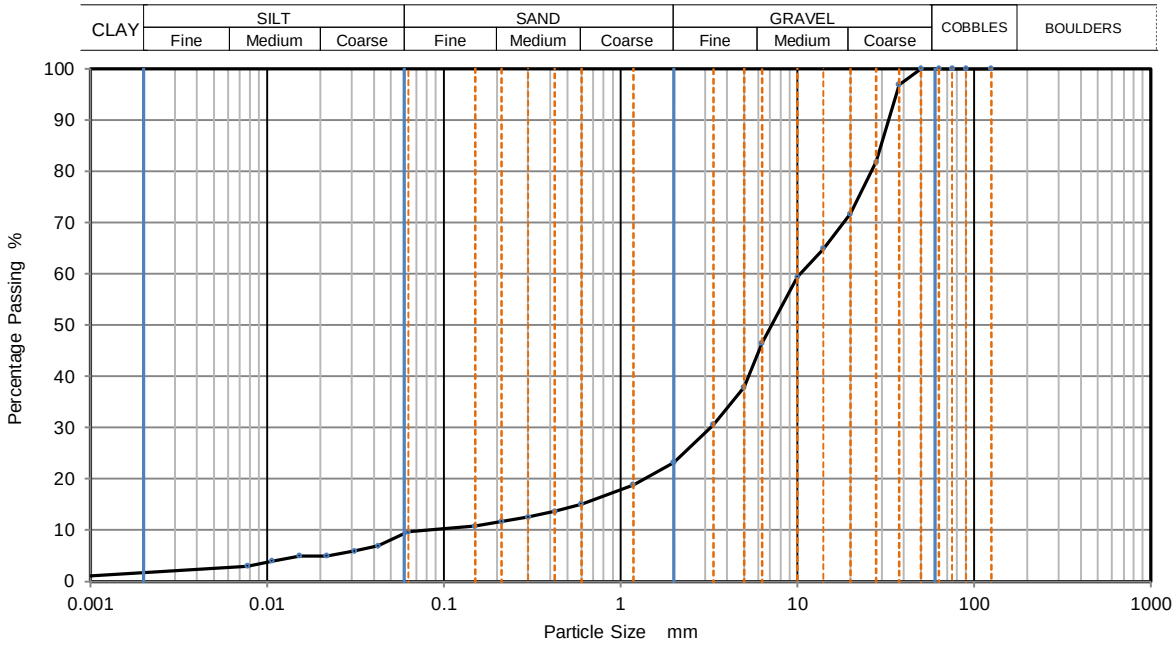
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 86 |
| Sand | 10 |
| | |
| Fines <0.063mm | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 16.5 |
| D30 | mm | 6.55 |
| D10 | mm | 0.638 |
| Uniformity Coefficient | | 26 |
| Curvature Coefficient | | 4.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP308 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031266 |
| Soil Description | Grey sandy clayey GRAVEL M/G | | | Depth, m | 0.60 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031266 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0424 | 7 |
| 90 | 100 | 0.0311 | 6 |
| 75 | 100 | 0.0217 | 5 |
| 63 | 100 | 0.0152 | 5 |
| 50 | 100 | 0.0107 | 4 |
| 37.5 | 97 | 0.0077 | 3 |
| 28 | 82 | 0.0009 | 1 |
| 20 | 72 | | |
| 14 | 65 | | |
| 10 | 59 | | |
| 6.3 | 47 | | |
| 5 | 38 | | |
| 3.35 | 31 | | |
| 2 | 23 | | |
| 1.18 | 19 | | |
| 0.6 | 15 | Particle density (assumed) | |
| 0.425 | 14 | 2.67 Mg/m3 | |
| 0.3 | 13 | | |
| 0.212 | 12 | | |
| 0.15 | 11 | | |
| 0.063 | 10 | | |

| Dry Mass of sample, g. | 17008 |
|---|---|

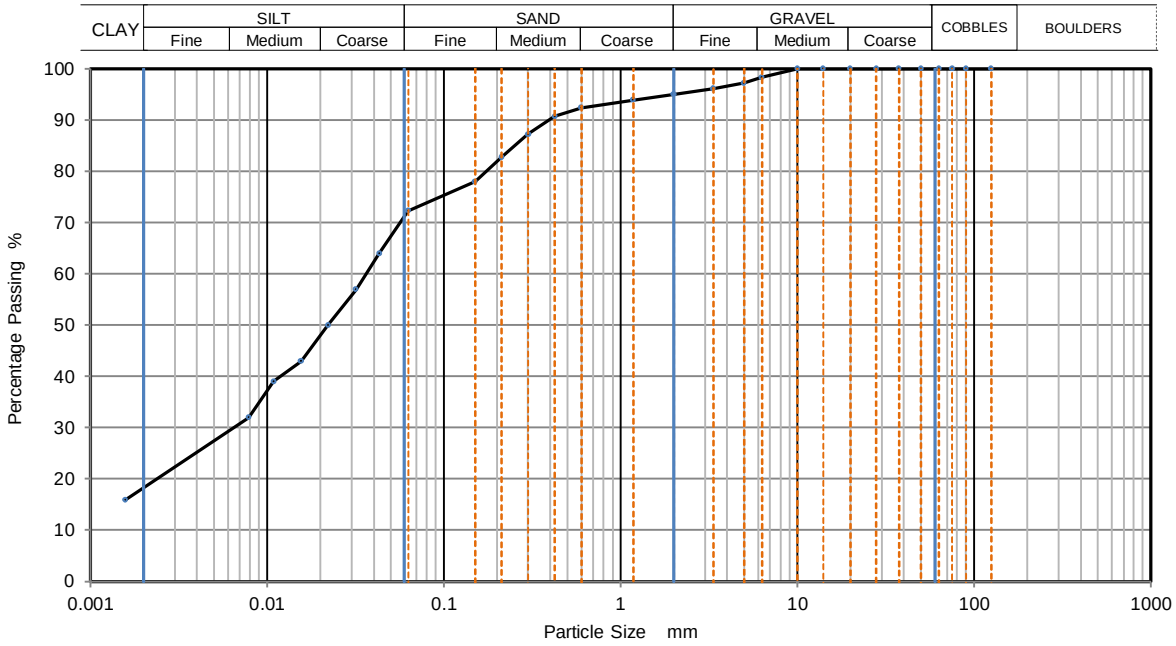
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 77 |
| Sand | 14 |
| Silt | 8 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 10.3 |
| D30 | mm | 3.21 |
| D10 | mm | 0.0811 |
| Uniformity Coefficient | | 130 |
| Curvature Coefficient | | 12 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP308 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031267 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 2.00 |
| Specimen Reference | 3 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031267 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0432 | 64 |
| 90 | 100 | 0.0318 | 57 |
| 75 | 100 | 0.0222 | 50 |
| 63 | 100 | 0.0155 | 43 |
| 50 | 100 | 0.0109 | 39 |
| 37.5 | 100 | 0.0078 | 32 |
| 28 | 100 | 0.0016 | 16 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 100 | | |
| 6.3 | 98 | | |
| 5 | 97 | | |
| 3.35 | 96 | | |
| 2 | 95 | | |
| 1.18 | 94 | | |
| 0.6 | 92 | Particle density (assumed) | |
| 0.425 | 91 | 2.67 Mg/m3 | |
| 0.3 | 87 | | |
| 0.212 | 83 | | |
| 0.15 | 78 | | |
| 0.063 | 72 | | |

Dry Mass of sample, g. 5130

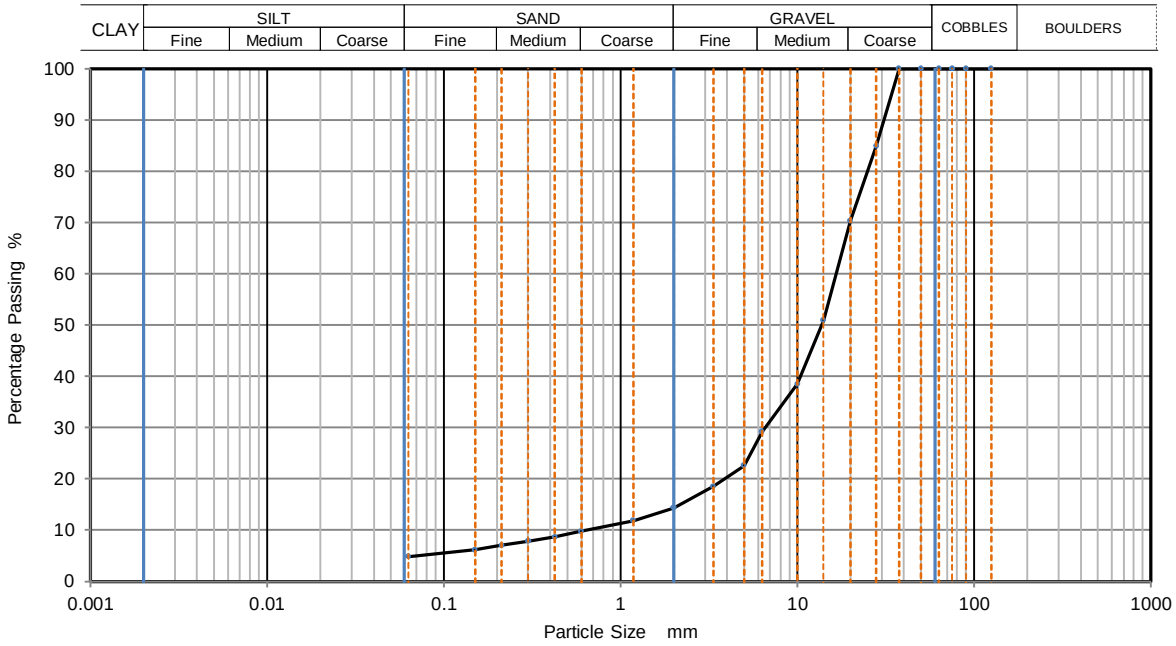
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 5 |
| Sand | 23 |
| Silt | 54 |
| Clay | 18 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0366 |
| D30 | mm | 0.00651 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP309 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031286 |
| Soil Description | Grey sandy clayey GRAVEL M/G | | | Depth, m | 0.50 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031286 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 85 | | |
| 20 | 70 | | |
| 14 | 51 | | |
| 10 | 39 | | |
| 6.3 | 29 | | |
| 5 | 23 | | |
| 3.35 | 19 | | |
| 2 | 14 | | |
| 1.18 | 12 | | |
| 0.6 | 10 | | |
| 0.425 | 9 | | |
| 0.3 | 8 | | |
| 0.212 | 7 | | |
| 0.15 | 6 | | |
| 0.063 | 5 | | |

| Dry Mass of sample, g. | 13812 |
|---|---|

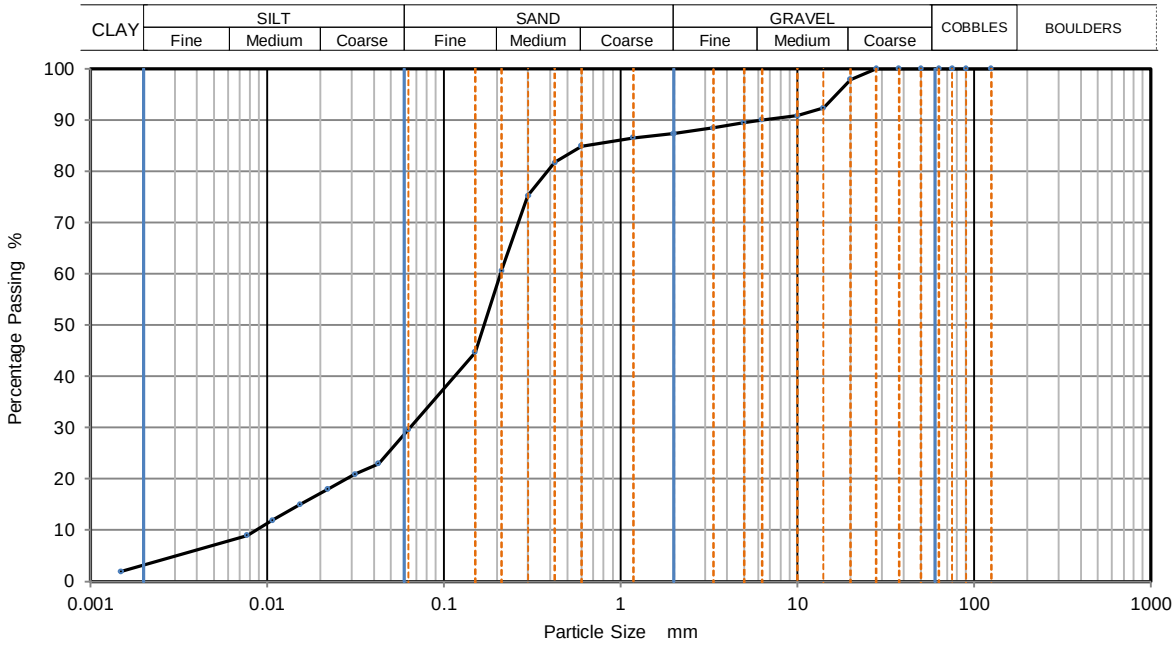
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 86 |
| Sand | 10 |
| | |
| Fines <0.063mm | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 16.5 |
| D30 | mm | 6.55 |
| D10 | mm | 0.638 |
| Uniformity Coefficient | | 26 |
| Curvature Coefficient | | 4.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP309 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031288 |
| Soil Description | Brown silty gravelly SAND | | | Depth, m | 2.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031288 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 23 |
| 90 | 100 | 0.0315 | 21 |
| 75 | 100 | 0.0220 | 18 |
| 63 | 100 | 0.0153 | 15 |
| 50 | 100 | 0.0107 | 12 |
| 37.5 | 100 | 0.0077 | 9 |
| 28 | 100 | 0.0015 | 2 |
| 20 | 98 | | |
| 14 | 92 | | |
| 10 | 91 | | |
| 6.3 | 90 | | |
| 5 | 90 | | |
| 3.35 | 88 | | |
| 2 | 87 | | |
| 1.18 | 87 | | |
| 0.6 | 85 | Particle density (assumed) | |
| 0.425 | 82 | 2.67 | Mg/m3 |
| 0.3 | 75 | | |
| 0.212 | 61 | | |
| 0.15 | 45 | | |
| 0.063 | 30 | | |

| | |
|---|---|
| Dry Mass of sample, g. | 5684 |

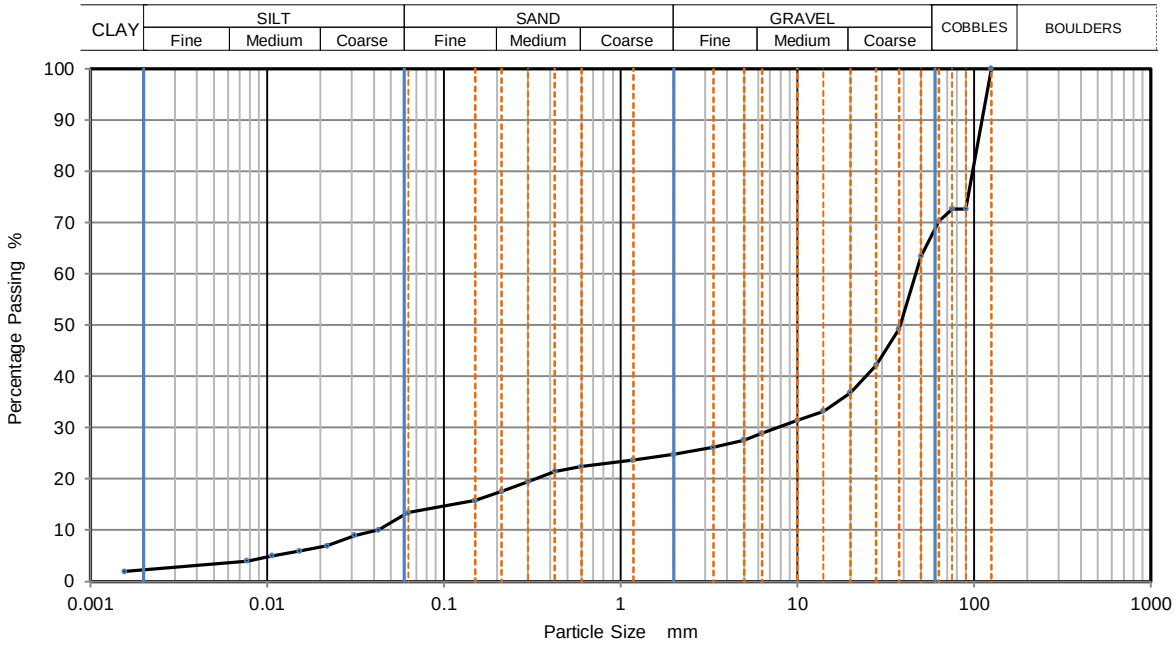
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 13 |
| Sand | 58 |
| Silt | 26 |
| Clay | 3 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.209 |
| D30 | mm | 0.0644 |
| D10 | mm | 0.00829 |
| Uniformity Coefficient | | 25 |
| Curvature Coefficient | | 2.4 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP310 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031270 |
| Soil Description | Brown sandy very gravelly CLAY with cobbles M/G | | | Depth, m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031270 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0427 | 10 |
| 90 | 73 | 0.0313 | 9 |
| 75 | 73 | 0.0218 | 7 |
| 63 | 70 | 0.0152 | 6 |
| 50 | 63 | 0.0106 | 5 |
| 37.5 | 49 | 0.0077 | 4 |
| 28 | 42 | 0.0016 | 2 |
| 20 | 37 | | |
| 14 | 33 | | |
| 10 | 31 | | |
| 6.3 | 29 | | |
| 5 | 28 | | |
| 3.35 | 26 | | |
| 2 | 25 | | |
| 1.18 | 24 | | |
| 0.6 | 22 | Particle density (assumed) | |
| 0.425 | 22 | 2.67 | Mg/m3 |
| 0.3 | 20 | | |
| 0.212 | 18 | | |
| 0.15 | 16 | | |
| 0.063 | 13 | | |

| Dry Mass of sample, g. | 13932 |
|---|---|

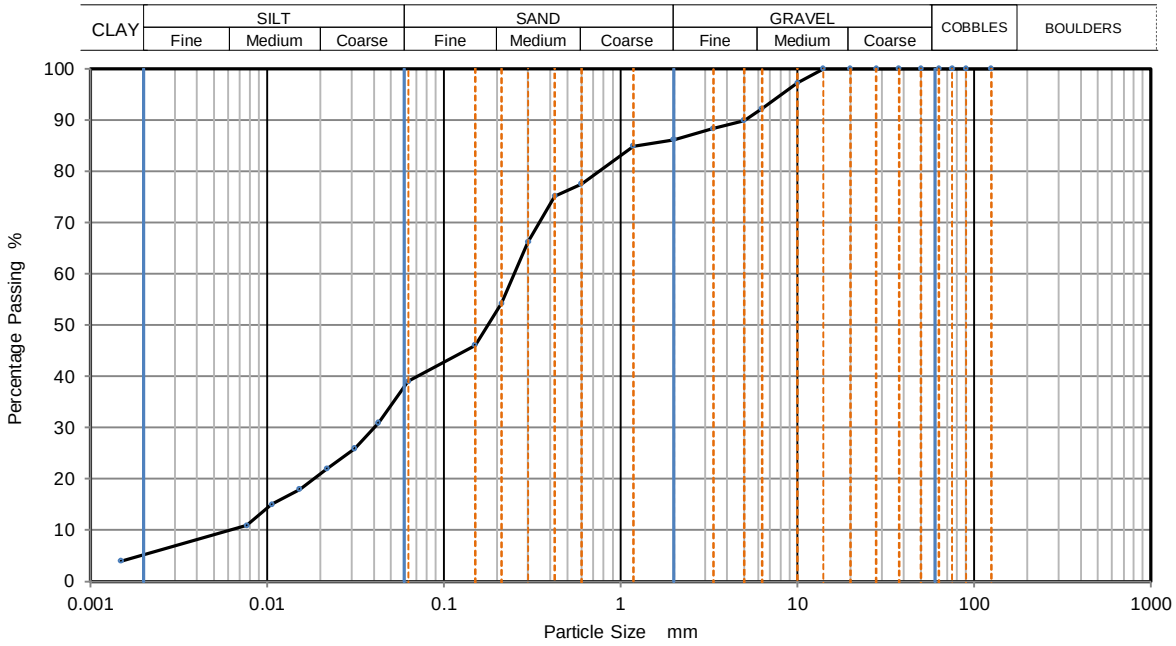
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 30 |
| Gravel | 45 |
| Sand | 11 |
| Silt | 12 |
| Clay | 2 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | 125 |
| D60 | mm | 46.7 |
| D30 | mm | 7.69 |
| D10 | mm | 0.04 |
| Uniformity Coefficient | | 1200 |
| Curvature Coefficient | | 32 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TP310 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031273 |
| Soil Description | Grey + brown sandy gravelly slightly organic CLAY | | | Depth, m | 2.60 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031273 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0428 | 31 |
| 90 | 100 | 0.0313 | 26 |
| 75 | 100 | 0.0219 | 22 |
| 63 | 100 | 0.0153 | 18 |
| 50 | 100 | 0.0107 | 15 |
| 37.5 | 100 | 0.0077 | 11 |
| 28 | 100 | 0.0015 | 4 |
| 20 | 100 | | |
| 14 | 100 | | |
| 10 | 97 | | |
| 6.3 | 92 | | |
| 5 | 90 | | |
| 3.35 | 88 | | |
| 2 | 86 | | |
| 1.18 | 85 | | |
| 0.6 | 78 | Particle density (assumed) | |
| 0.425 | 75 | 2.67 | Mg/m3 |
| 0.3 | 66 | | |
| 0.212 | 54 | | |
| 0.15 | 46 | | |
| 0.063 | 39 | | |

| Dry Mass of sample, g. | 4498 |
|---|---|

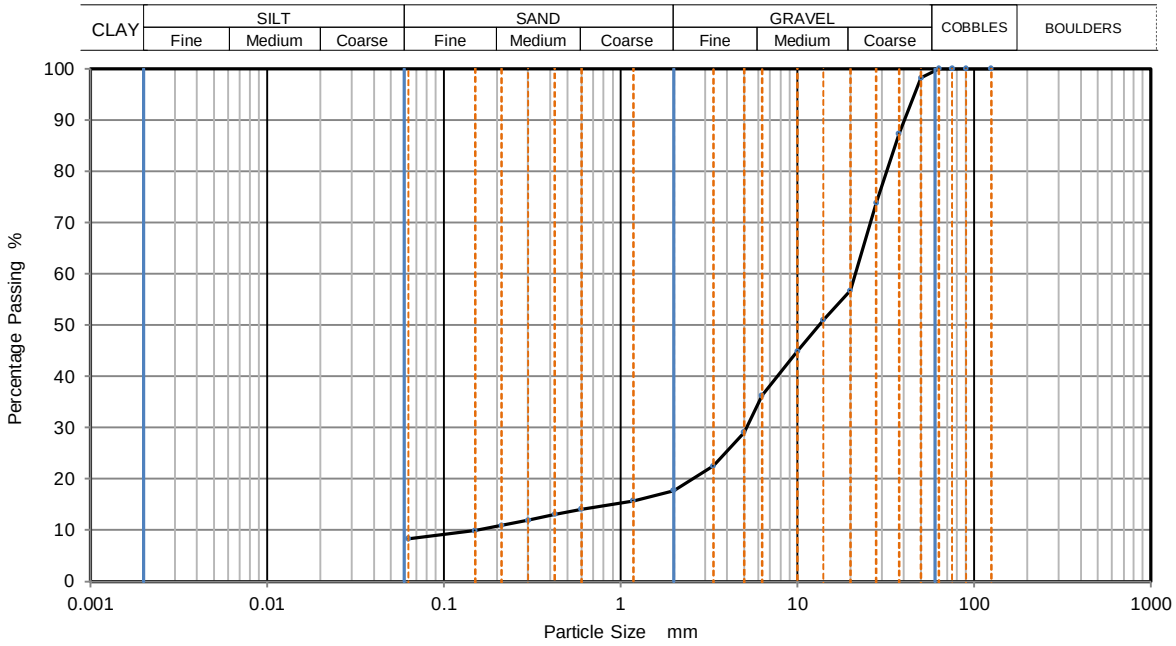
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 14 |
| Sand | 47 |
| Silt | 34 |
| Clay | 5 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.251 |
| D30 | mm | 0.0409 |
| D10 | mm | 0.00608 |
| Uniformity Coefficient | | 41 |
| Curvature Coefficient | | 1.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TT301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031256 |
| Soil Description | Brown sandy clayey GRAVEL M/G | | | Depth, m | 1.20 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clause 9.2 | | | KeyLAB ID | WA1031256 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | | |
| 90 | 100 | | |
| 75 | 100 | | |
| 63 | 100 | | |
| 50 | 98 | | |
| 37.5 | 87 | | |
| 28 | 74 | | |
| 20 | 57 | | |
| 14 | 51 | | |
| 10 | 45 | | |
| 6.3 | 36 | | |
| 5 | 29 | | |
| 3.35 | 23 | | |
| 2 | 18 | | |
| 1.18 | 16 | | |
| 0.6 | 14 | | |
| 0.425 | 13 | | |
| 0.3 | 12 | | |
| 0.212 | 11 | | |
| 0.15 | 10 | | |
| 0.063 | 8 | | |

| Dry Mass of sample, g. | 16677 |
|---|---|

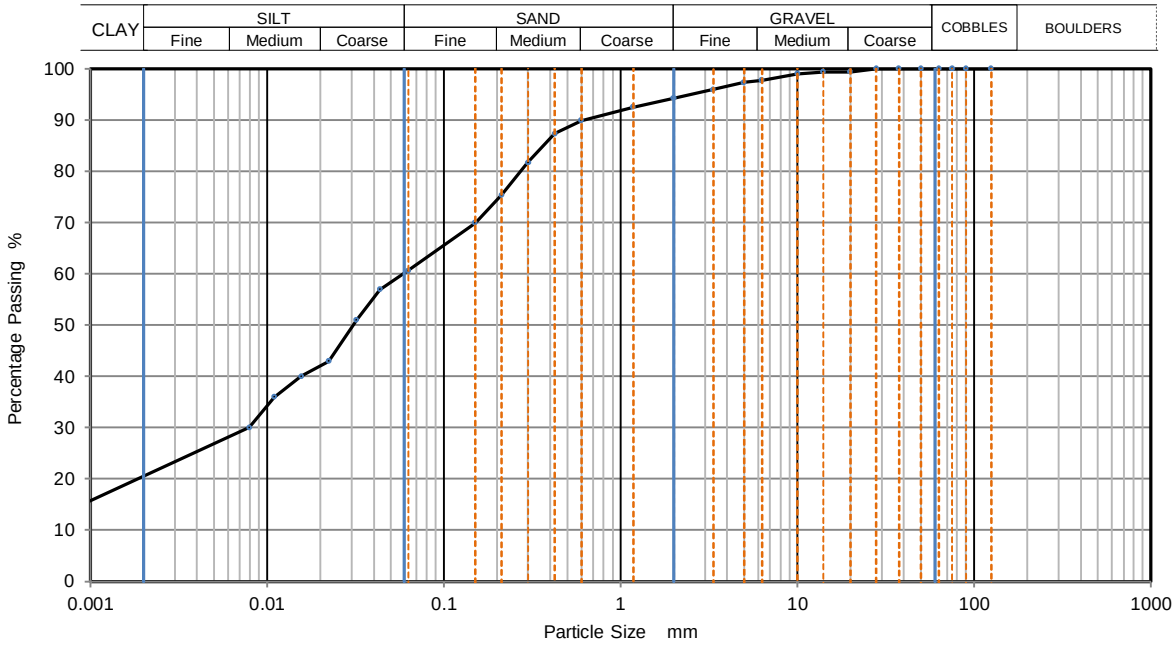
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 82 |
| Sand | 9 |
| | |
| Fines <0.063mm | 8 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 21.3 |
| D30 | mm | 5.15 |
| D10 | mm | 0.153 |
| Uniformity Coefficient | | 140 |
| Curvature Coefficient | | 8.1 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TT301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031257 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth, m | 2.20 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | LB |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031257 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0436 | 57 |
| 90 | 100 | 0.0320 | 51 |
| 75 | 100 | 0.0223 | 43 |
| 63 | 100 | 0.0156 | 40 |
| 50 | 100 | 0.0110 | 36 |
| 37.5 | 100 | 0.0079 | 30 |
| 28 | 100 | 0.0009 | 15 |
| 20 | 99 | | |
| 14 | 99 | | |
| 10 | 99 | | |
| 6.3 | 98 | | |
| 5 | 97 | | |
| 3.35 | 96 | | |
| 2 | 94 | | |
| 1.18 | 93 | | |
| 0.6 | 90 | Particle density (assumed) | |
| 0.425 | 87 | 2.67 Mg/m3 | |
| 0.3 | 82 | | |
| 0.212 | 75 | | |
| 0.15 | 70 | | |
| 0.063 | 61 | | |

| Dry Mass of sample, g. | 16725 |
|---|---|

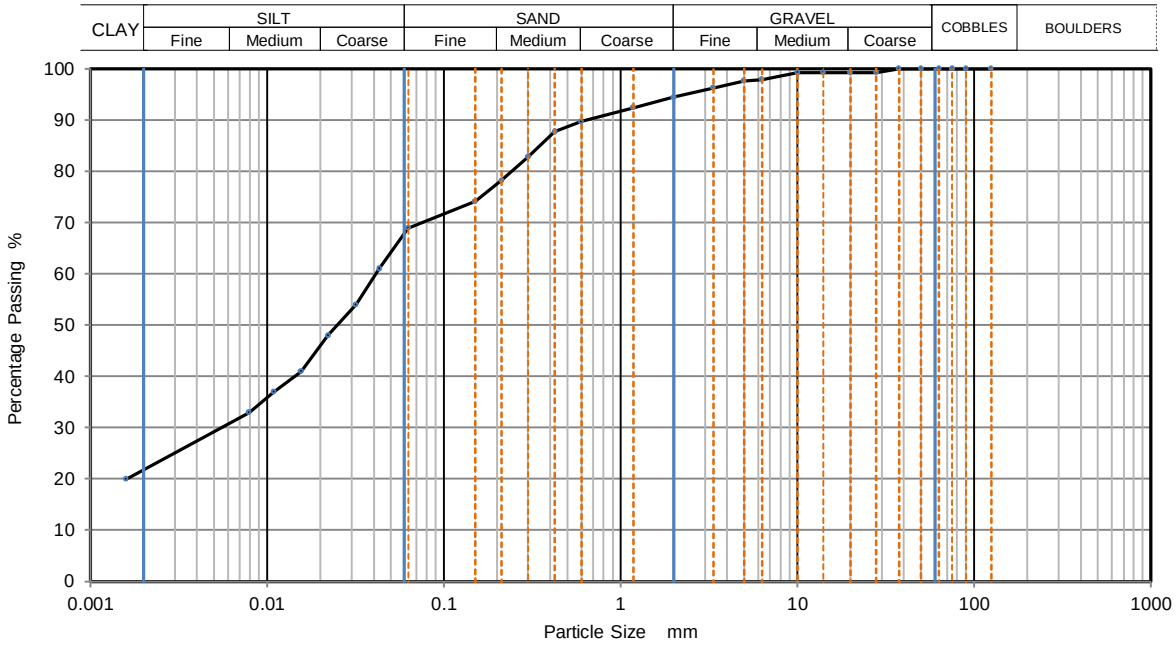
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 6 |
| Sand | 34 |
| Silt | 40 |
| Clay | 21 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0596 |
| D30 | mm | 0.00767 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TT303 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031254 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth, m | 0.50 |
| Specimen Reference | 3 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031254 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0432 | 61 |
| 90 | 100 | 0.0318 | 54 |
| 75 | 100 | 0.0222 | 48 |
| 63 | 100 | 0.0155 | 41 |
| 50 | 100 | 0.0109 | 37 |
| 37.5 | 100 | 0.0079 | 33 |
| 28 | 99 | 0.0016 | 20 |
| 20 | 99 | | |
| 14 | 99 | | |
| 10 | 99 | | |
| 6.3 | 98 | | |
| 5 | 98 | | |
| 3.35 | 96 | | |
| 2 | 94 | | |
| 1.18 | 92 | | |
| 0.6 | 90 | Particle density (assumed) | |
| 0.425 | 88 | 2.67 | Mg/m3 |
| 0.3 | 83 | | |
| 0.212 | 78 | | |
| 0.15 | 74 | | |
| 0.063 | 69 | | |

| Dry Mass of sample, g. | 4544 |
|---|---|

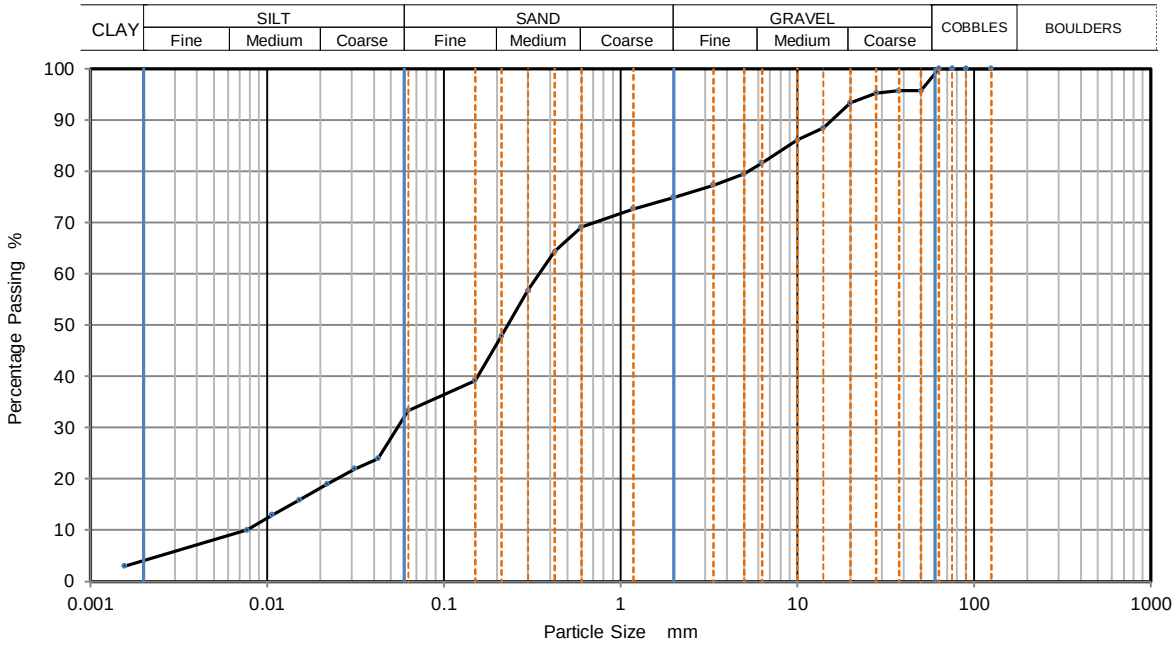
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 6 |
| Sand | 26 |
| Silt | 48 |
| Clay | 21 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.0414 |
| D30 | mm | 0.00571 |
| D10 | mm | |
| Uniformity Coefficient | | |
| Curvature Coefficient | | |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **PARTICLE SIZE DISTRIBUTION** | | | Job Ref | **326R** |
| | | | | Borehole/Pit No. | TT303A |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031253 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth, m | 1.00 |
| Specimen Reference | 3 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 2:1990, clauses 9.2 and 9.5 | | | KeyLAB ID | WA1031253 |




| Sieving | | Sedimentation | |
|---|---|---|---|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125 | 100 | 0.0425 | 24 |
| 90 | 100 | 0.0313 | 22 |
| 75 | 100 | 0.0218 | 19 |
| 63 | 100 | 0.0152 | 16 |
| 50 | 96 | 0.0107 | 13 |
| 37.5 | 96 | 0.0077 | 10 |
| 28 | 95 | 0.0016 | 3 |
| 20 | 93 | | |
| 14 | 88 | | |
| 10 | 86 | | |
| 6.3 | 82 | | |
| 5 | 80 | | |
| 3.35 | 77 | | |
| 2 | 75 | | |
| 1.18 | 73 | | |
| 0.6 | 69 | Particle density (assumed) | |
| 0.425 | 64 | 2.67 | Mg/m3 |
| 0.3 | 57 | | |
| 0.212 | 48 | | |
| 0.15 | 39 | | |
| 0.063 | 33 | | |

| Dry Mass of sample, g. | 5287 |
|---|---|

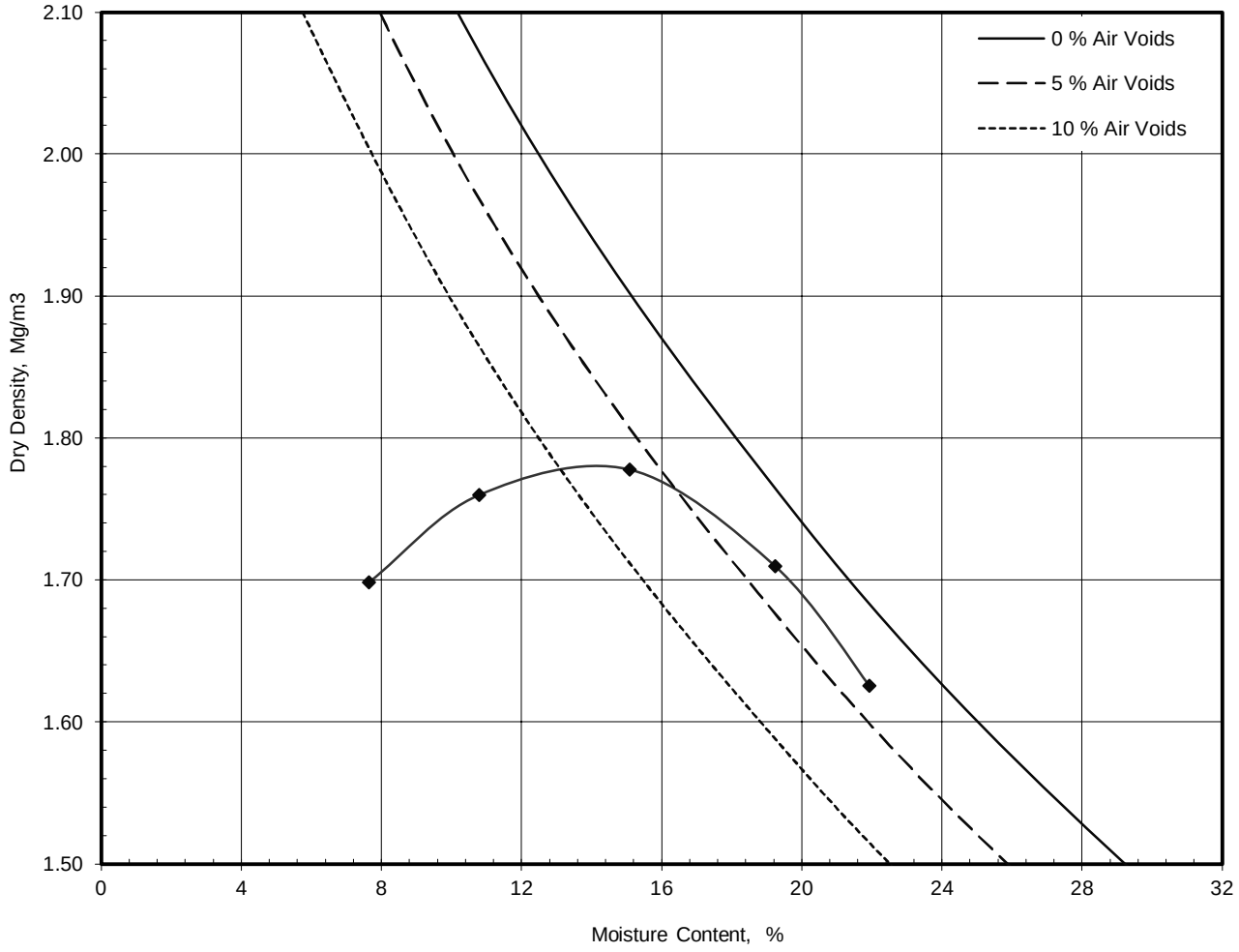
| **Sample Proportions** | % dry mass |
|---|---|
| Very coarse | 0 |
| Gravel | 25 |
| Sand | 42 |
| Silt | 29 |
| Clay | 4 |

| **Grading Analysis** | | |
|---|---|---|
| D100 | mm | |
| D60 | mm | 0.349 |
| D30 | mm | 0.0545 |
| D10 | mm | 0.00715 |
| Uniformity Coefficient | | 49 |
| Curvature Coefficient | | 1.2 |

Remarks

Preparation and testing in accordance with BS1377 unless noted below

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH301 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1030286 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth | 0.30 m |
| Specimen Ref. | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.3, 2.5kg rammer | | | Keylab ID | WA1030286 |
| | | | | Compaction Test Reference/No. | |

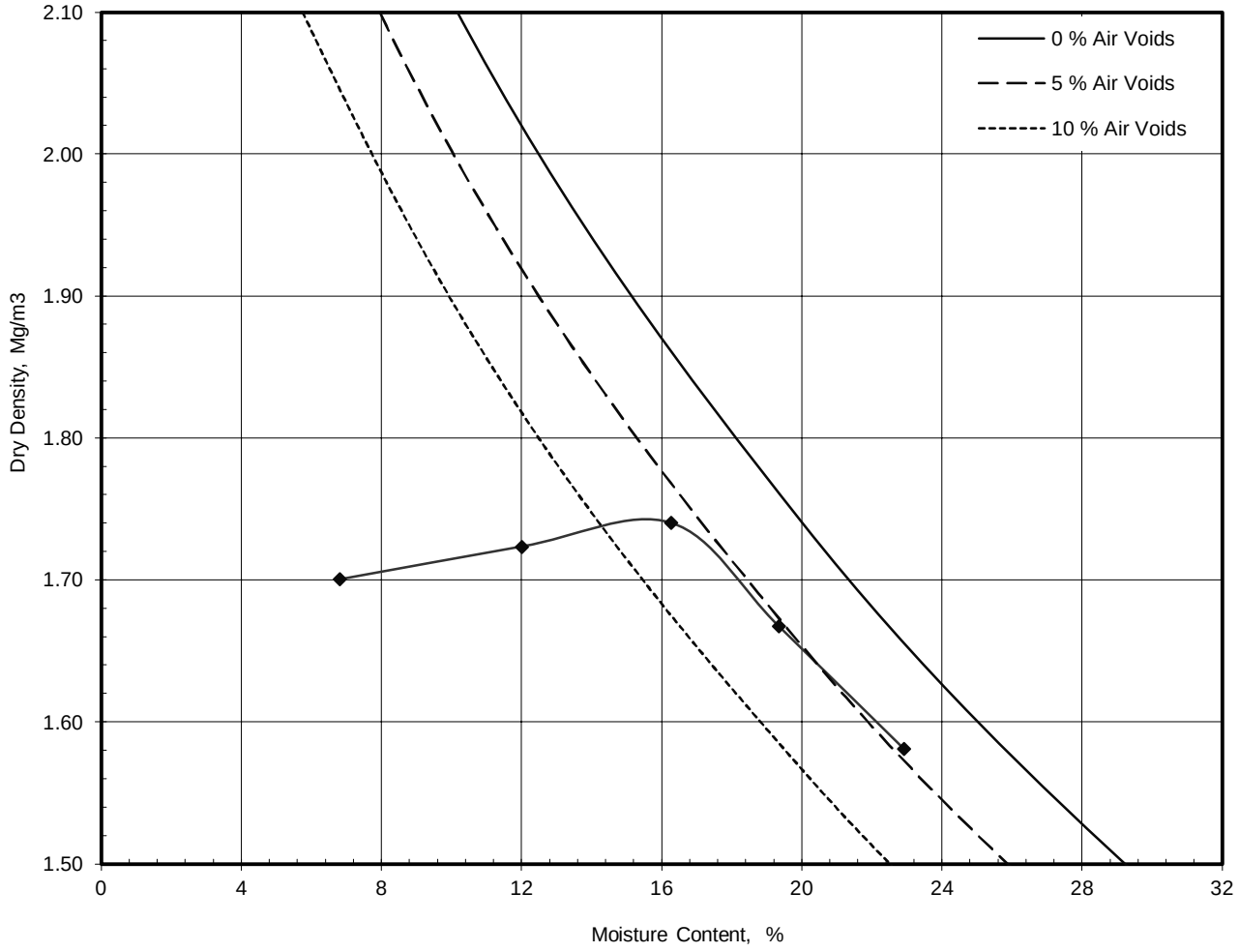



| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | 1 LITRE |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 0 |
| Material Retained on 20.0 mm Sieve | % | 1 |
| Particle Density - Assumed | Mg/m³ | 2.67 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.78** |
| **Optimum Moisture Content** | % | **14** |

Remarks

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH313 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1020712 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth | 0.50 m |
| Specimen Ref. | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.4, 2.5kg rammer | | | Keylab ID | WA1020712 |
| | | | | Compaction Test Reference/No. | |

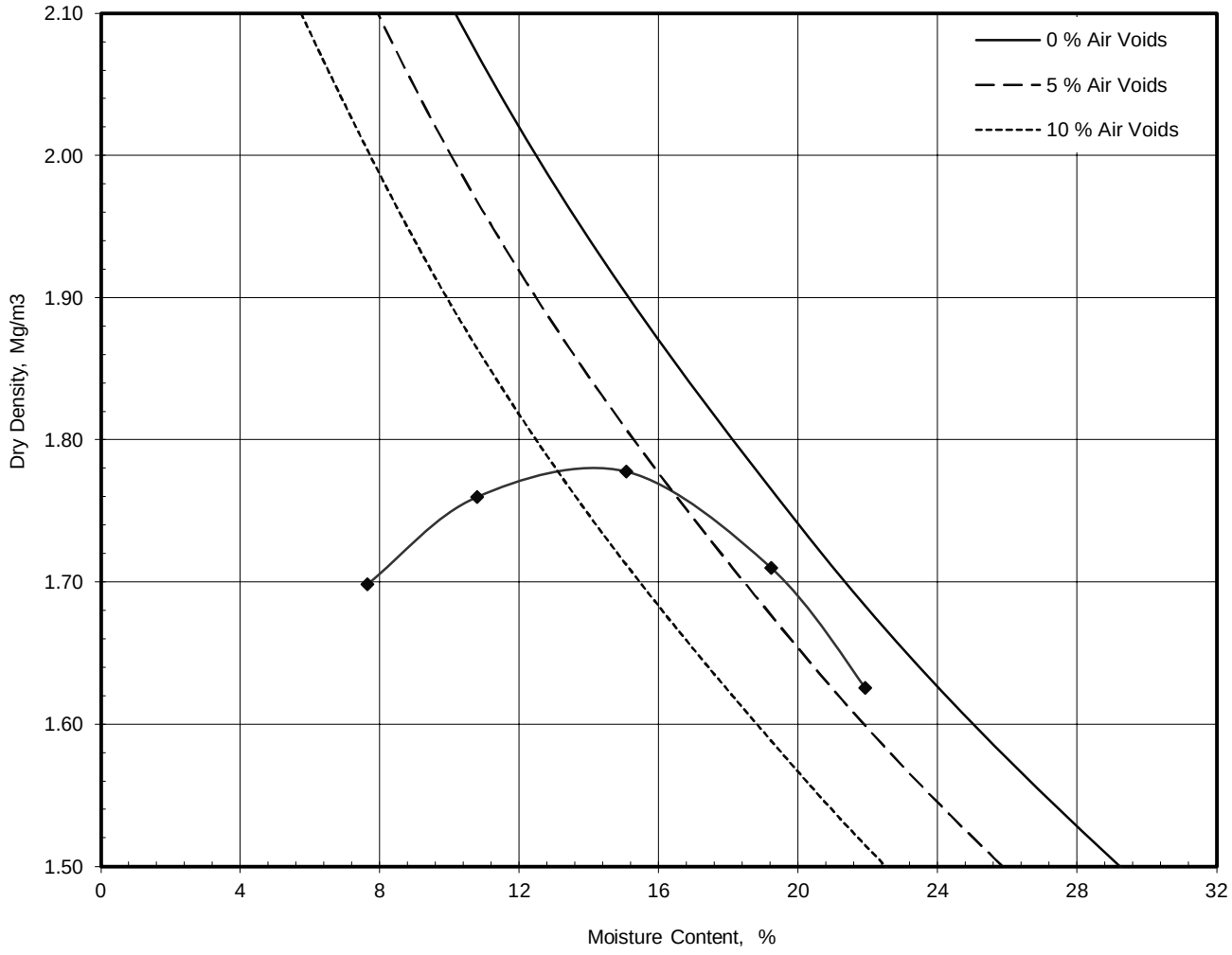



| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | CBR |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 4 |
| Material Retained on 20.0 mm Sieve | % | 13 |
| Particle Density - Assumed | Mg/m³ | 2.67 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.75** |
| **Optimum Moisture Content** | % | **16** |

Remarks

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH301 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1030286 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth | 0.30 m |
| Specimen Ref. | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.3, 2.5kg rammer | | | Keylab ID | WA1030286 |
| | | | | Compaction Test Reference/No. | |

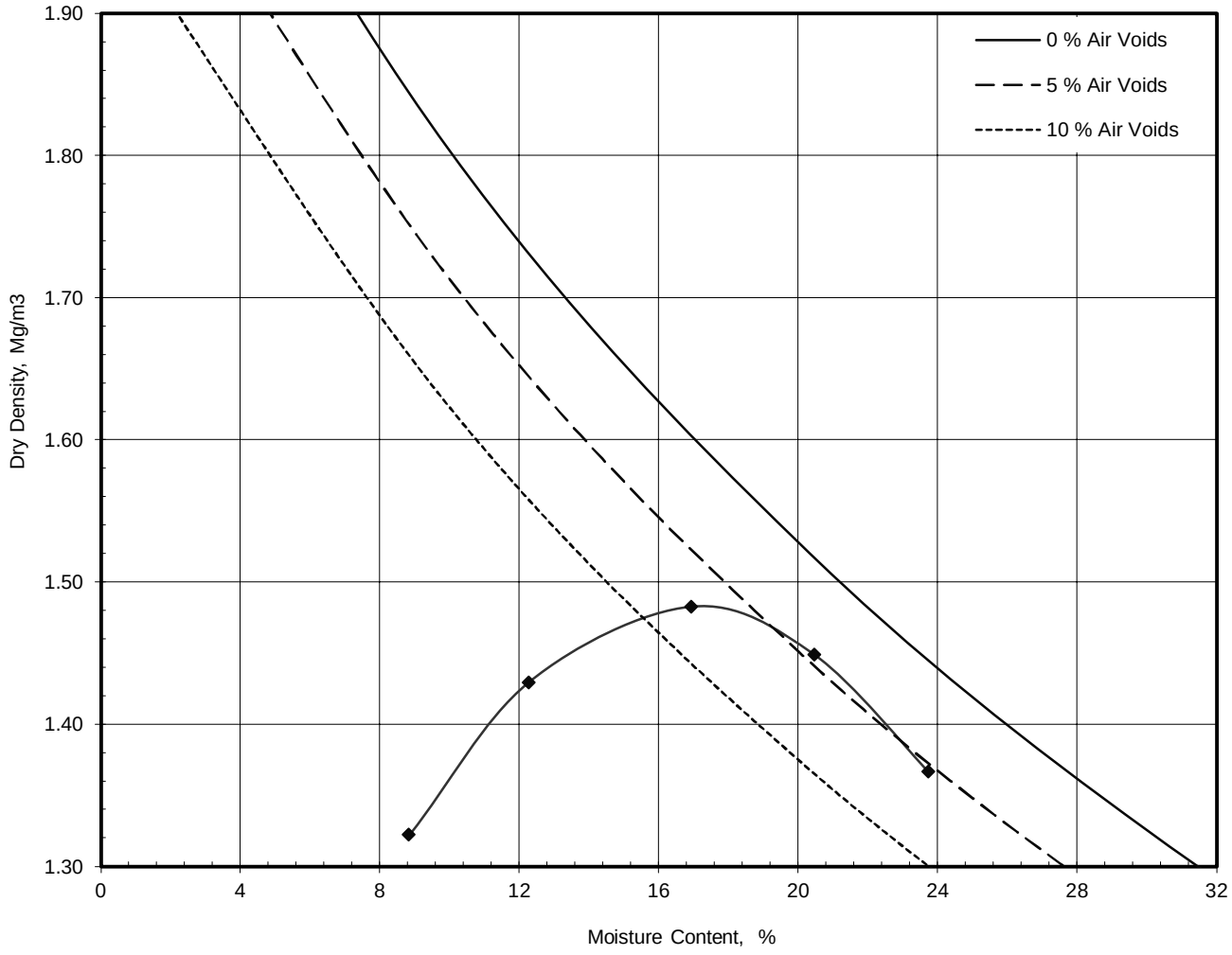



| | | |
|---|---|---|
| Preparation | | Material used was air dried |
| Mould Type | | 1 LITRE |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 0 |
| Material Retained on 20.0 mm Sieve | % | 1 |
| Particle Density - Assumed | Mg/m³ | 2.67 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.78** |
| **Optimum Moisture Content** | % | **14** |

Remarks

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH303 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1020646 |
| Soil Description | | | | Depth | 0.30 m |
| Specimen Ref. | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.4, 2.5kg rammer | | | Keylab ID | WA1020646 |
| | | | | Compaction Test Reference/No. | |



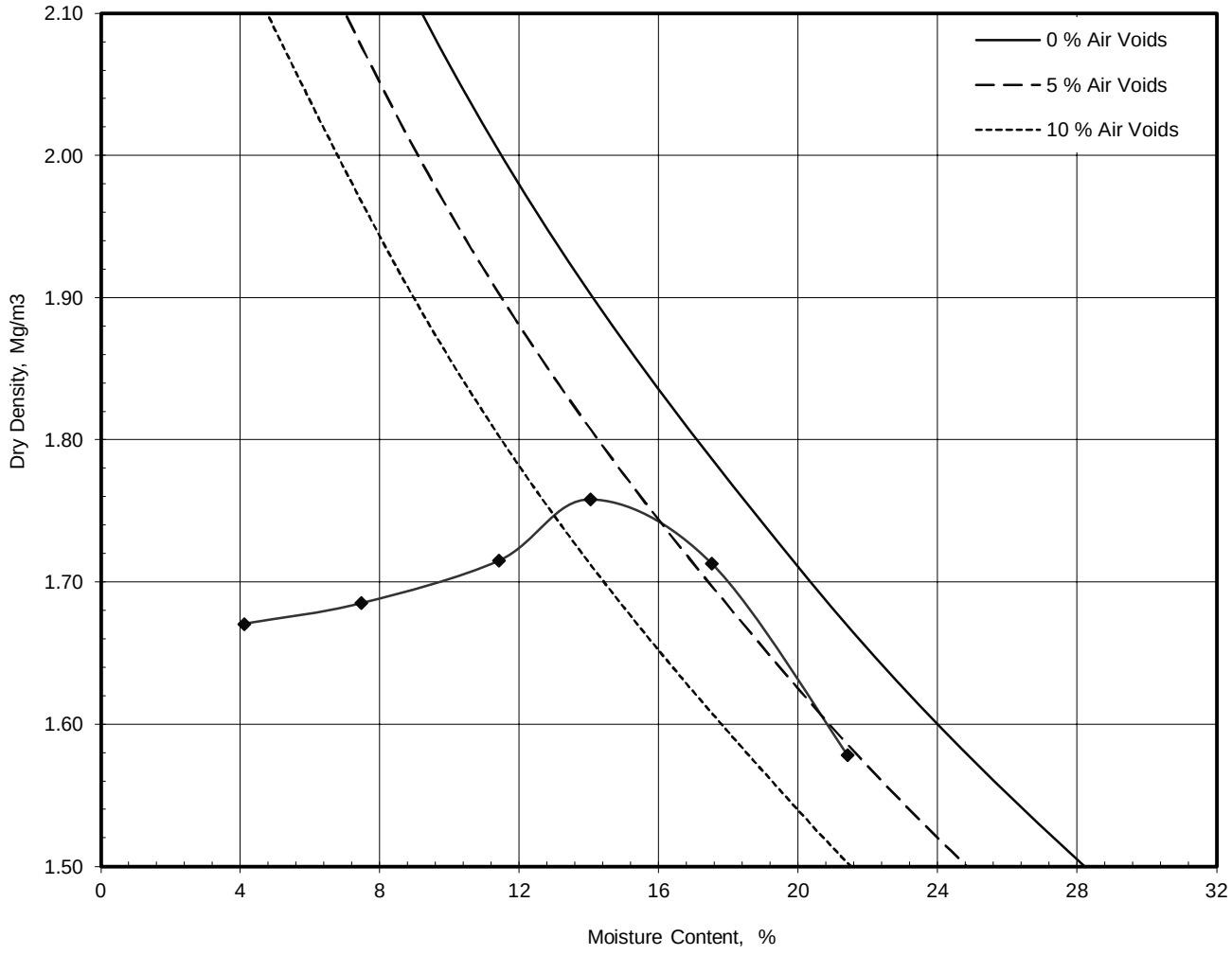

| | | |
|---|---|---|
| Preparation | | Material used was air dried |
| Mould Type | | CBR |
| Samples Used | | Separate specimens tested |
| Material Retained on 37.5 mm Sieve | % | 7 |
| Material Retained on 20.0 mm Sieve | % | 20 |
| Particle Density - Assumed | Mg/m³ | 2.20 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.49** |
| **Optimum Moisture Content** | % | **17** |

Remarks

BH303@0.30m+BH303@1.2m Combined

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH308 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1031311 |
| Soil Description | Brown SAND + GRAVEL with cobbles | | | Depth | 0.50 m |
| Specimen Ref. | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.3, 2.5kg rammer | | | Keylab ID | WA1031311 |
| | | | | Compaction Test Reference/No. | |



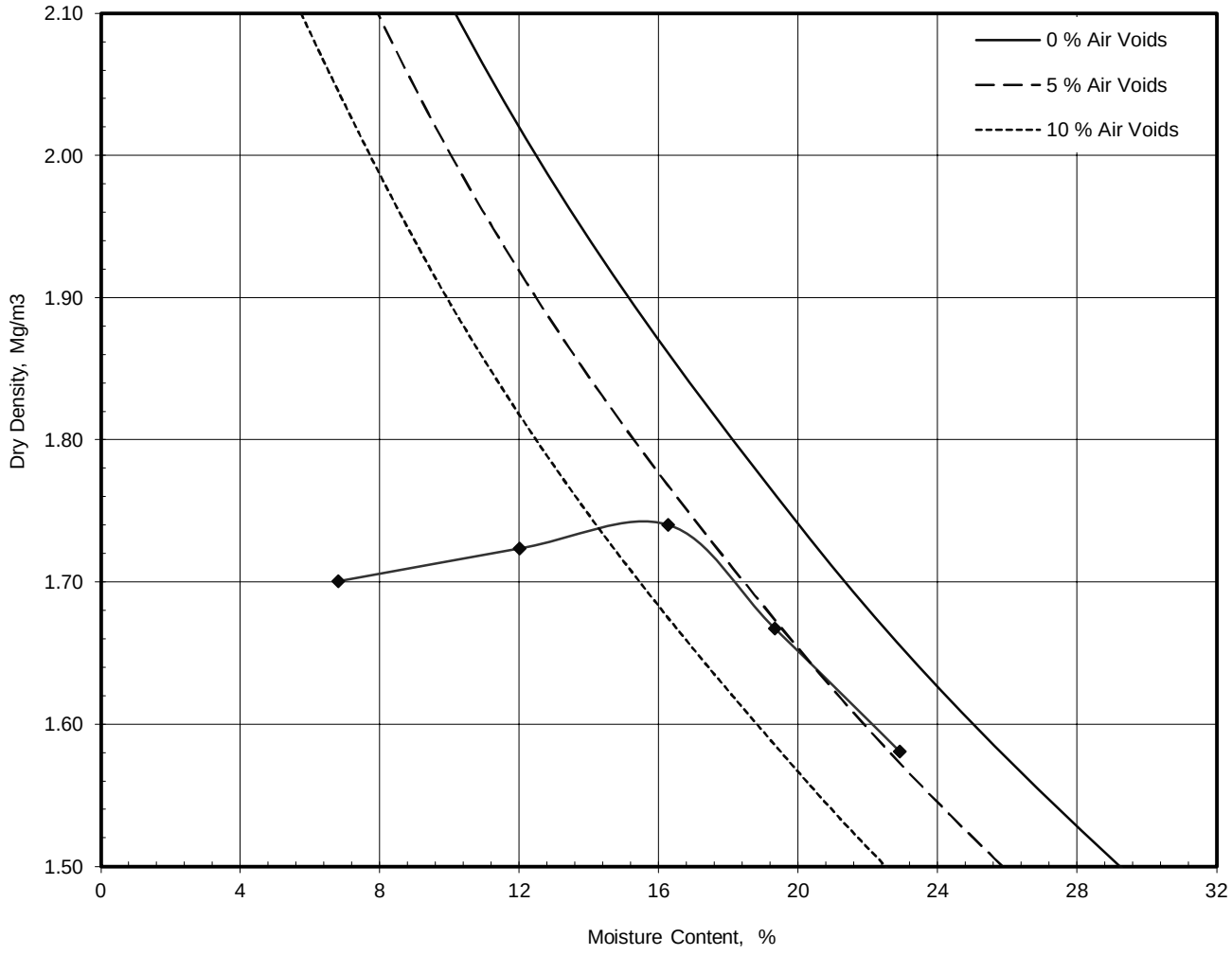

| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | 1 LITRE |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 31 |
| Material Retained on 20.0 mm Sieve | % | 43 |
| Particle Density - Assumed | Mg/m³ | 2.60 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.76** |
| **Optimum Moisture Content** | % | **14** |

Remarks

Test carried out Non-Standard, grading in Zone X.

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH313 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1020712 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth | 0.50 m |
| Specimen Ref. | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.4, 2.5kg rammer | | | Keylab ID | WA1020712 |
| | | | | Compaction Test Reference/No. | |

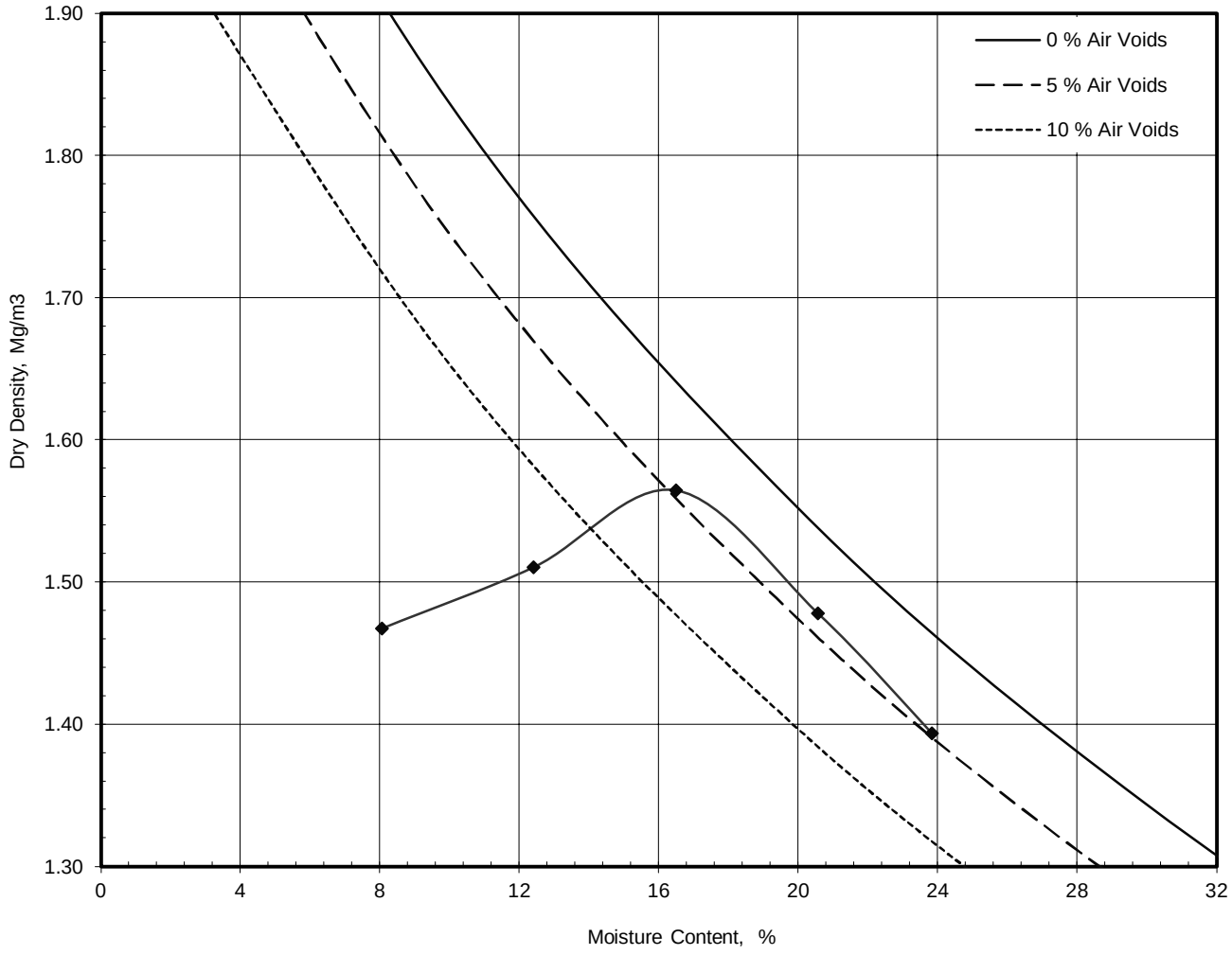



| | | |
|---|---|---|
| Preparation | | Material used was air dried |
| Mould Type | | CBR |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 4 |
| Material Retained on 20.0 mm Sieve | % | 13 |
| Particle Density - Assumed | Mg/m³ | 2.67 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.75** |
| **Optimum Moisture Content** | % | **16** |

Remarks

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH324 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1030367 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth | 1.00 m |
| Specimen Ref. | 4 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.3, 2.5kg rammer | | | Keylab ID | WA1030367 |
| | | | | Compaction Test Reference/No. | |

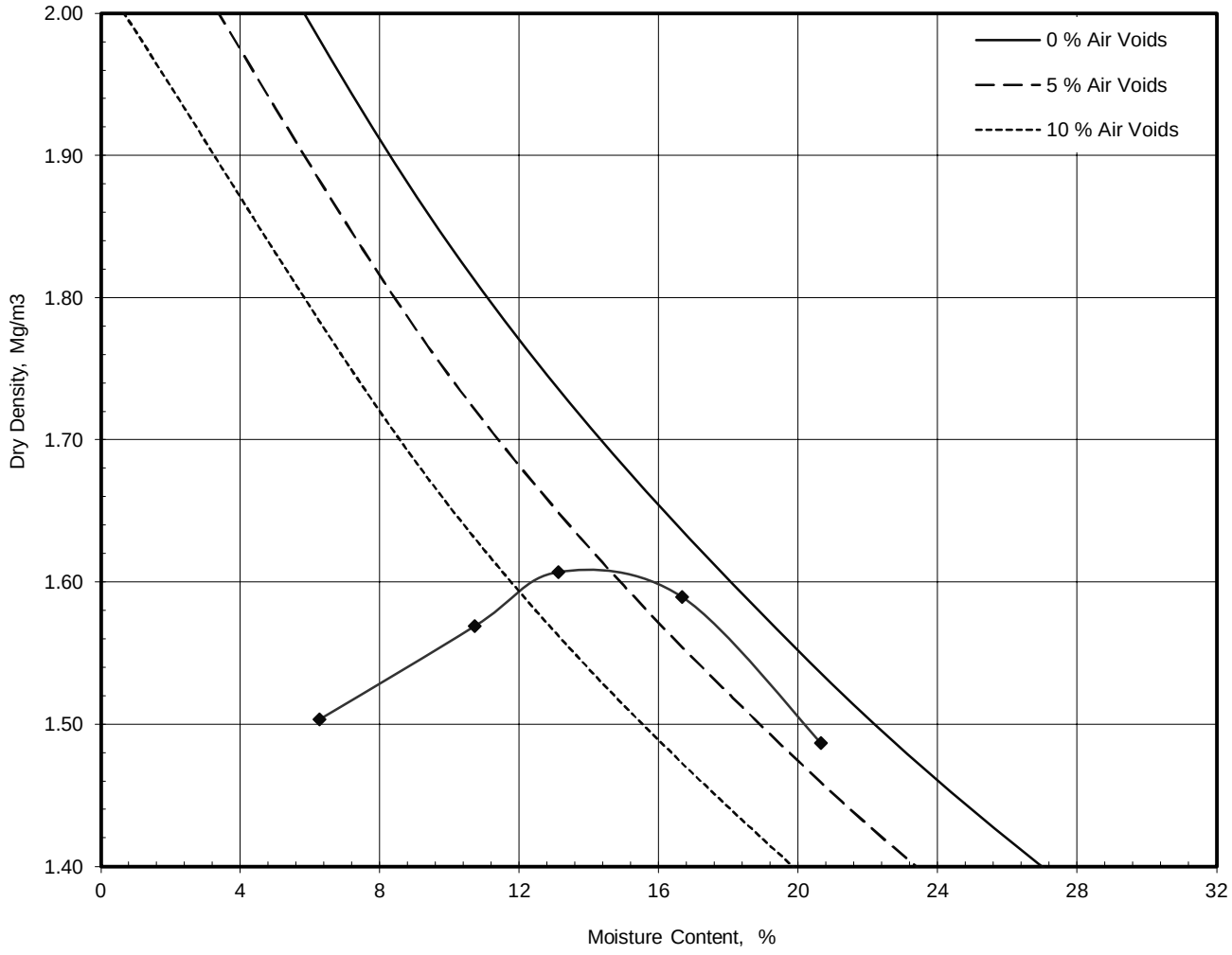



| | | |
|---|---|---|
| Preparation | | Material used was air dried |
| Mould Type | | 1 LITRE |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 0 |
| Material Retained on 20.0 mm Sieve | % | 4 |
| Particle Density - Assumed | Mg/m³ | 2.25 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.57** |
| **Optimum Moisture Content** | % | **16** |

Remarks

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH324 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1030377 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth | 2.00 m |
| Specimen Ref. | 3 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.3, 2.5kg rammer | | | Keylab ID | WA1030377 |
| | | | | Compaction Test Reference/No. | |

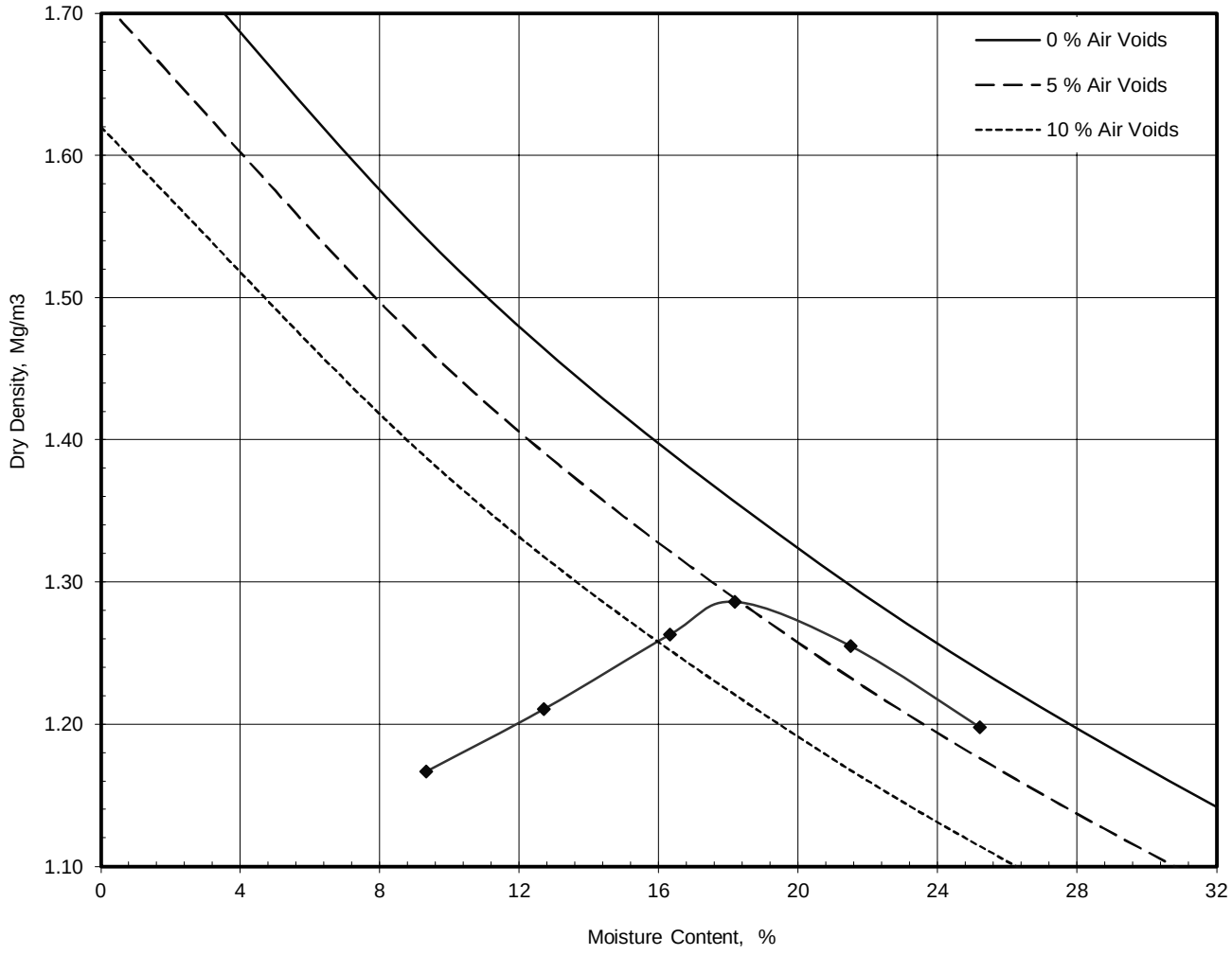



| | | |
|---|---|---|
| Preparation | | Material used was air dried |
| Mould Type | | 1 LITRE |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 0 |
| Material Retained on 20.0 mm Sieve | % | 0 |
| Particle Density - Assumed | Mg/m³ | 2.25 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.61** |
| **Optimum Moisture Content** | % | **14** |

Remarks

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH328 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1033831 |
| Soil Description | Brown clayey gravelly SAND | | | Depth | 2.00 m |
| Specimen Ref. | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.3, 2.5kg rammer | | | Keylab ID | WA1033831 |
| | | | | Compaction Test Reference/No. | |



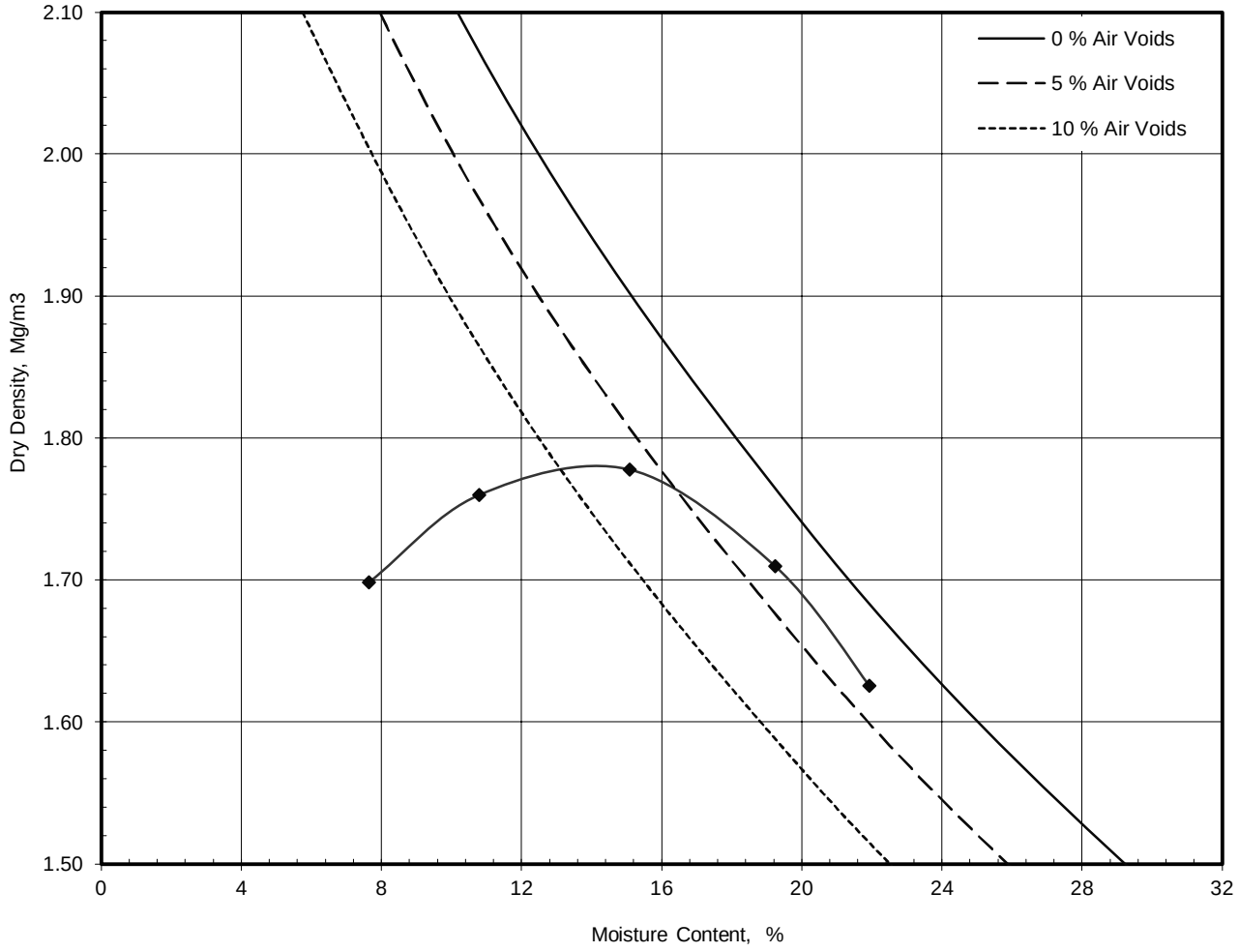

| | | |
|---|---|---|
| Preparation | | Material used was air dried |
| Mould Type | | 1 LITRE |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 10 |
| Material Retained on 20.0 mm Sieve | % | 25 |
| Particle Density - Assumed | Mg/m³ | 1.80 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.29** |
| **Optimum Moisture Content** | % | **18** |

Remarks

Test carried out Non-Standard, grading Zone X

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH301 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1030286 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth | 0.30 m |
| Specimen Ref. | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.3, 2.5kg rammer | | | Keylab ID | WA1030286 |
| | | | | Compaction Test Reference/No. | |

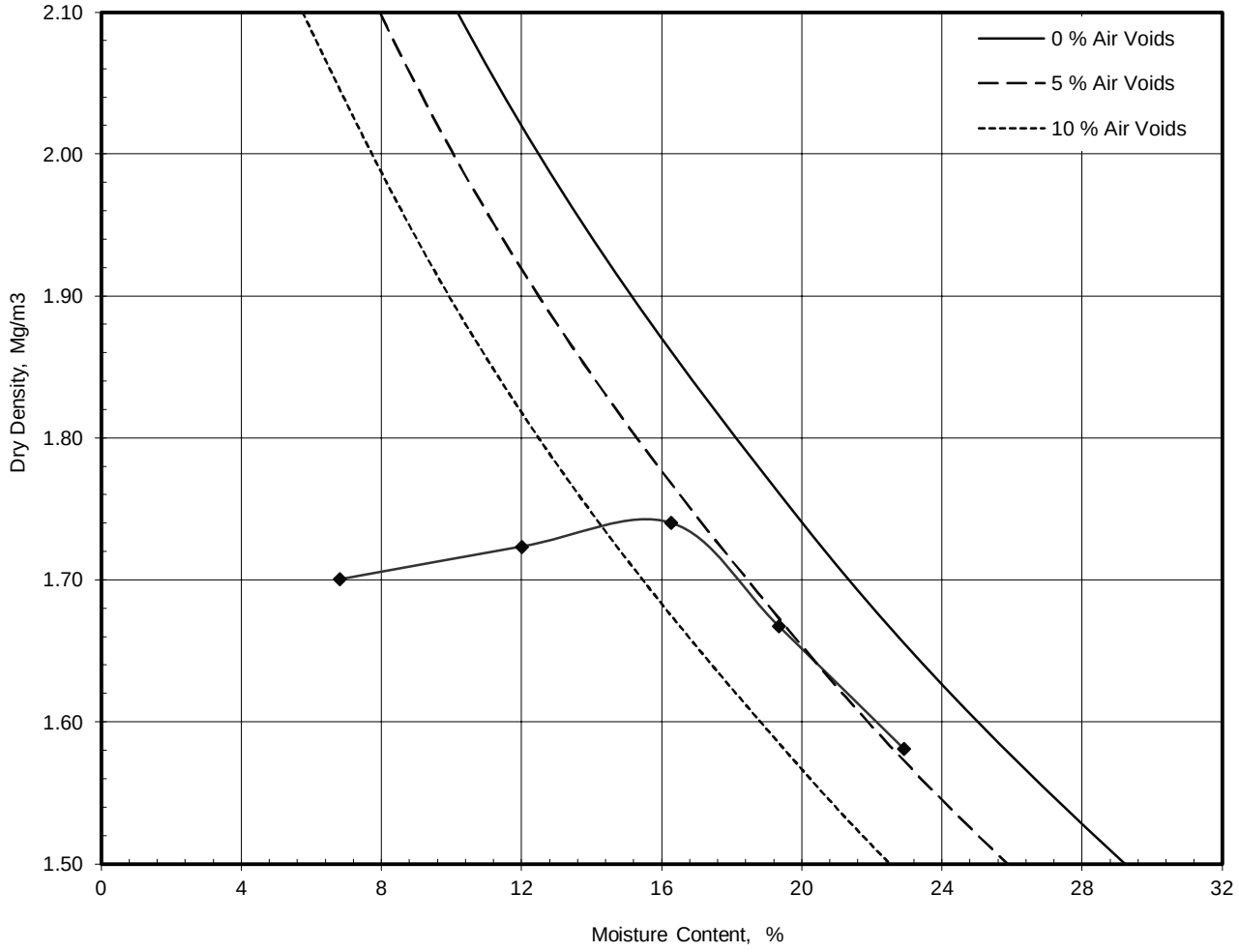



| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | 1 LITRE |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 0 |
| Material Retained on 20.0 mm Sieve | % | 1 |
| Particle Density - Assumed | Mg/m³ | 2.67 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.78** |
| **Optimum Moisture Content** | % | **14** |

Remarks

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Dry Density / Moisture Content Relationship Light Compaction** | | | Job Ref | **326R** |
| | | | | Borehole / Pit No | BH313 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1020712 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth | 0.50 m |
| Specimen Ref. | 2 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.4, 2.5kg rammer | | | Keylab ID | WA1020712 |
| | | | | Compaction Test Reference/No. | |

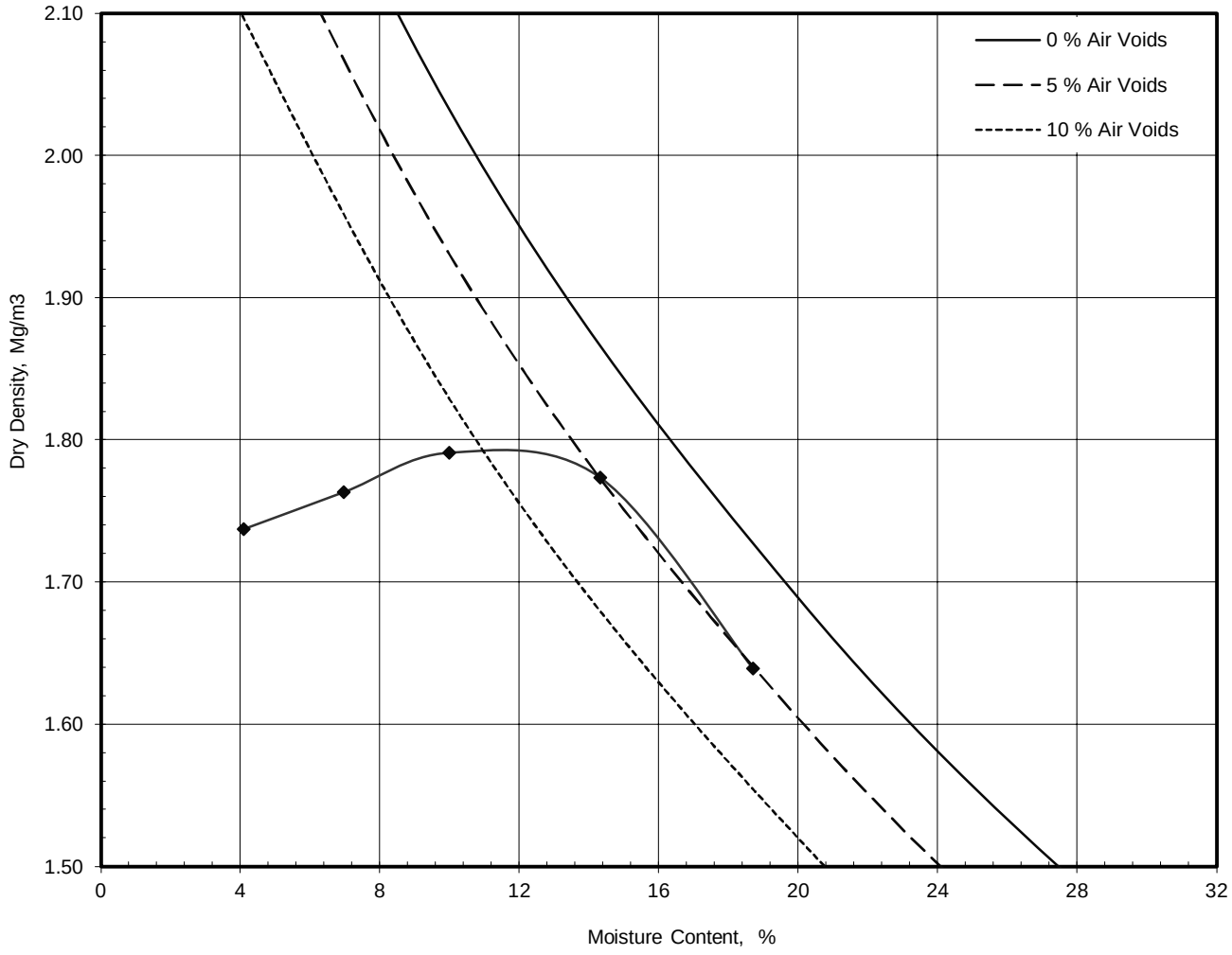



| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | CBR |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 4 |
| Material Retained on 20.0 mm Sieve | % | 13 |
| Particle Density - Assumed | Mg/m³ | 2.67 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.75** |
| **Optimum Moisture Content** | % | **16** |

Remarks

| bam ritchies | **Dry Density / Moisture Content Relationship Heavy Compaction** | | | Job Ref | **326R** |
|---|---|---|---|---|---|
| | | | | Borehole / Pit No | BH301 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1030278 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth | 0.50 m |
| Specimen Ref. | 5 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.5, 4.5kg rammer | | | Keylab ID | WA1030278 |
| | | | | Compaction Test Reference/No. | |



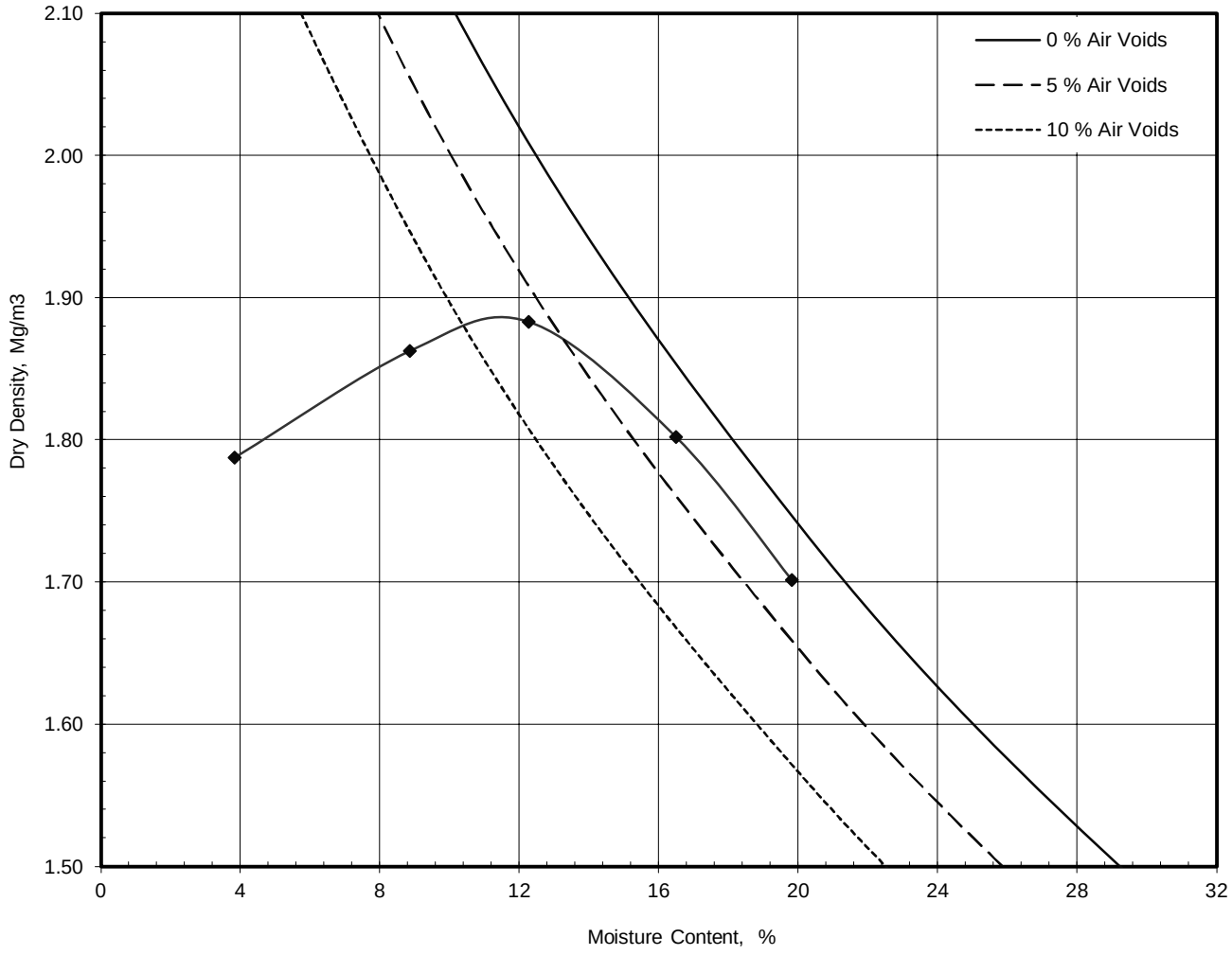

| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | 1 LITRE |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 0 |
| Material Retained on 20.0 mm Sieve | % | 1 |
| Particle Density - Assumed | Mg/m³ | 2.55 |

| **Maximum Dry Density** | Mg/m³ | **1.79** |
|---|---|---|

| **Optimum Moisture Content** | % | **12** |
|---|---|---|

Remarks

| bam ritchies | **Dry Density / Moisture Content Relationship Heavy Compaction** | | | Job Ref | **326R** |
|---|---|---|---|---|---|
| | | | | Borehole / Pit No | BH301 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1033054 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth | 3.00 m |
| Specimen Ref. | 5 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.5, 4.5kg rammer | | | Keylab ID | WA1033054 |
| | | | | Compaction Test Reference/No. | |

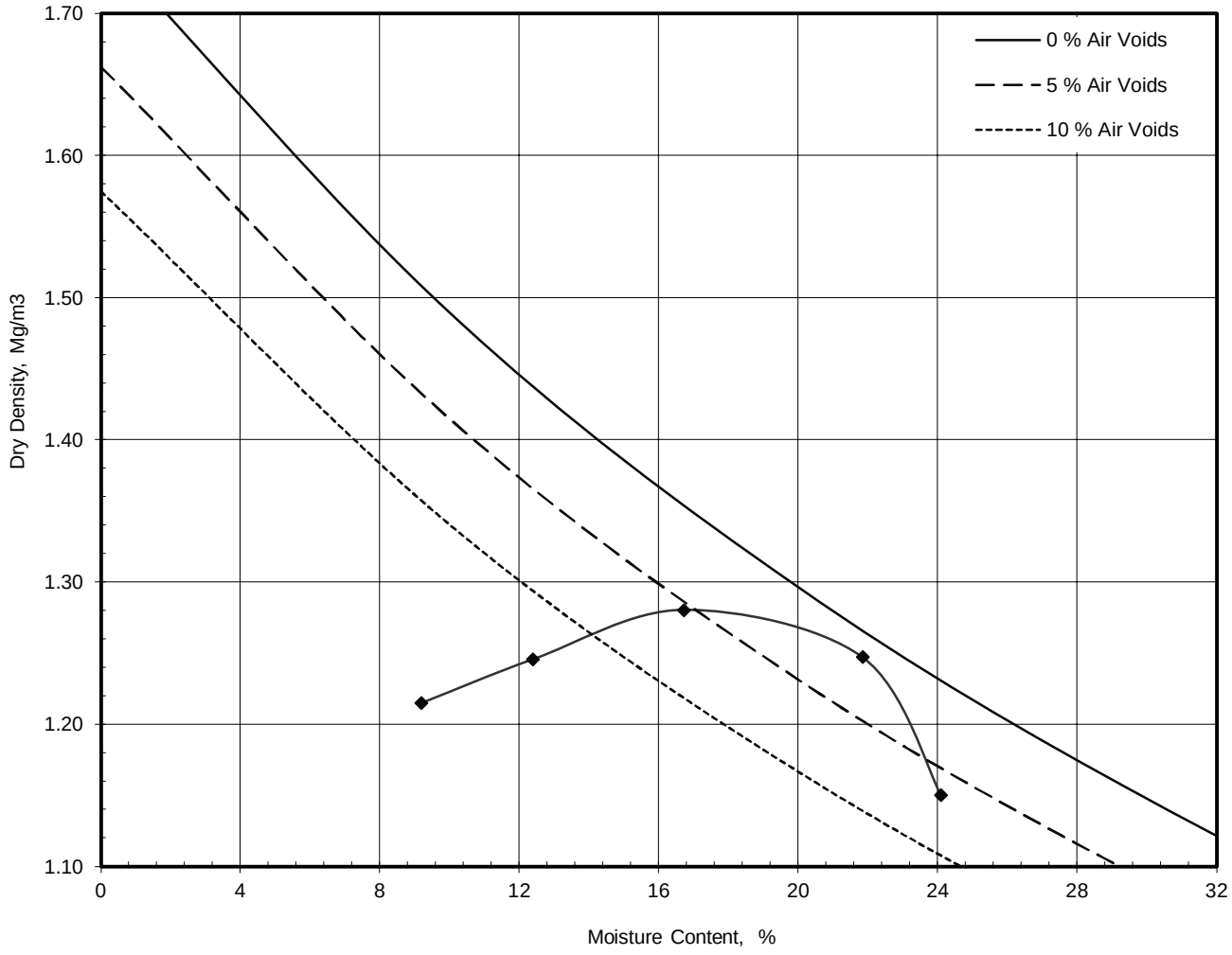



| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | 1 LITRE |
| Samples Used | | Single sample tested |
| Material Retained on 37.5 mm Sieve | % | 0 |
| Material Retained on 20.0 mm Sieve | % | 0 |
| Particle Density - Assumed | Mg/m³ | 2.67 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.89** |
| **Optimum Moisture Content** | % | **12** |

Remarks

| bam ritchies | **Dry Density / Moisture Content Relationship Heavy Compaction** | | | Job Ref | **326R** |
|---|---|---|---|---|---|
| | | | | Borehole / Pit No | BH304 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1020671 |
| Soil Description | | | | Depth | 0.30 m |
| Specimen Ref. | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.6, 4.5kg rammer | | | Keylab ID | WA1020671 |
| | | | | Compaction Test Reference/No. | |




| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | CBR |
| Samples Used | | Separate specimens tested |
| Material Retained on 37.5 mm Sieve | % | 3 |
| Material Retained on 20.0 mm Sieve | % | 14 |
| Particle Density - Assumed | Mg/m³ | 1.75 |

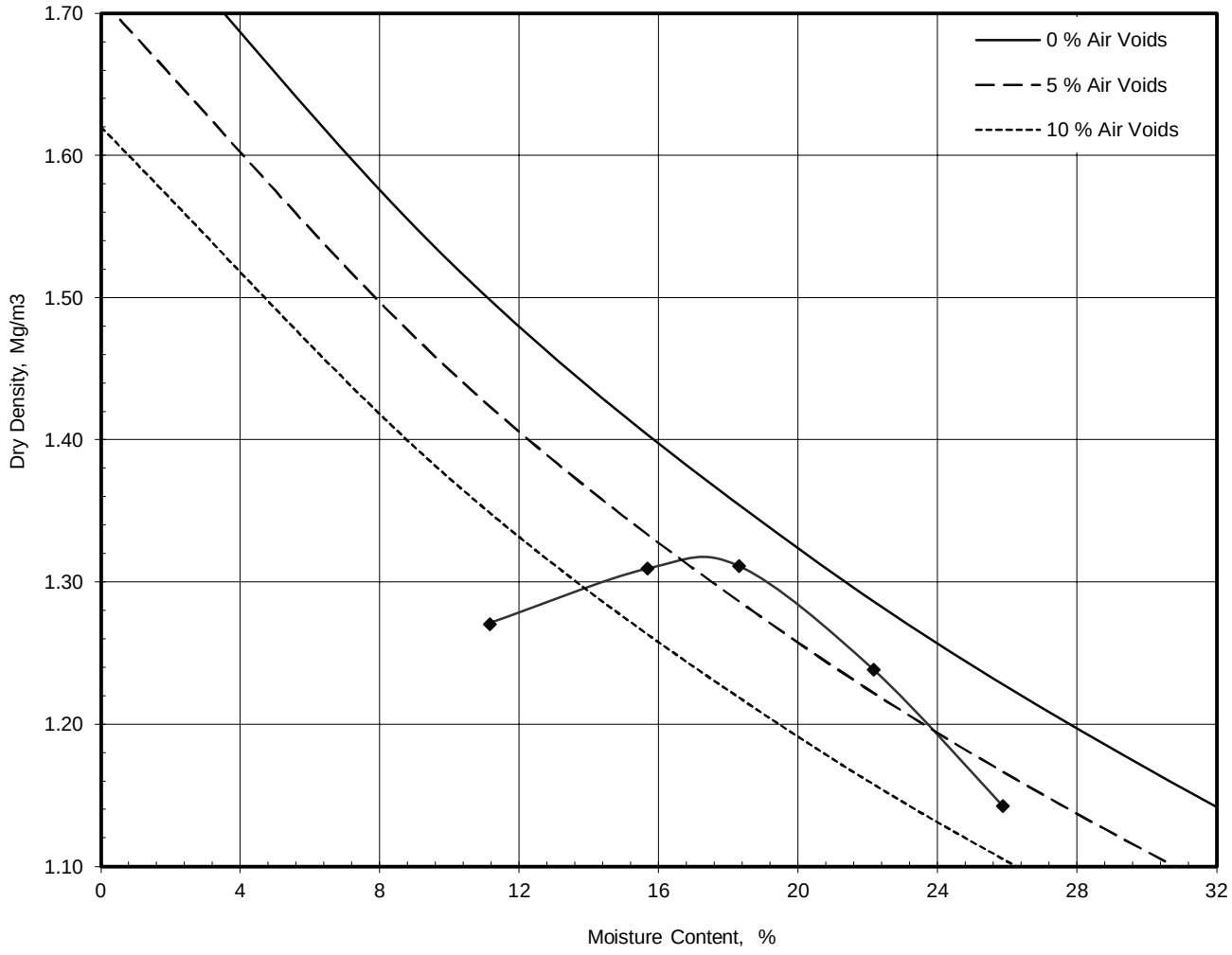
| **Maximum Dry Density** | Mg/m³ | **1.28** |
|---|---|---|

| **Optimum Moisture Content** | % | **17** |
|---|---|---|

Remarks

BH304@0.3M +BH304@0.5M

| bam ritchies | **Dry Density / Moisture Content Relationship Heavy Compaction** | | | Job Ref | **326R** |
|---|---|---|---|---|---|
| | | | | Borehole / Pit No | BH305 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1029566 |
| Soil Description | Grey gravelly clayey SAND | | | Depth | 0.50 m |
| Specimen Ref. | 4 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.5, 4.5kg rammer | | | Keylab ID | WA1029566 |
| | | | | Compaction Test Reference/No. | |

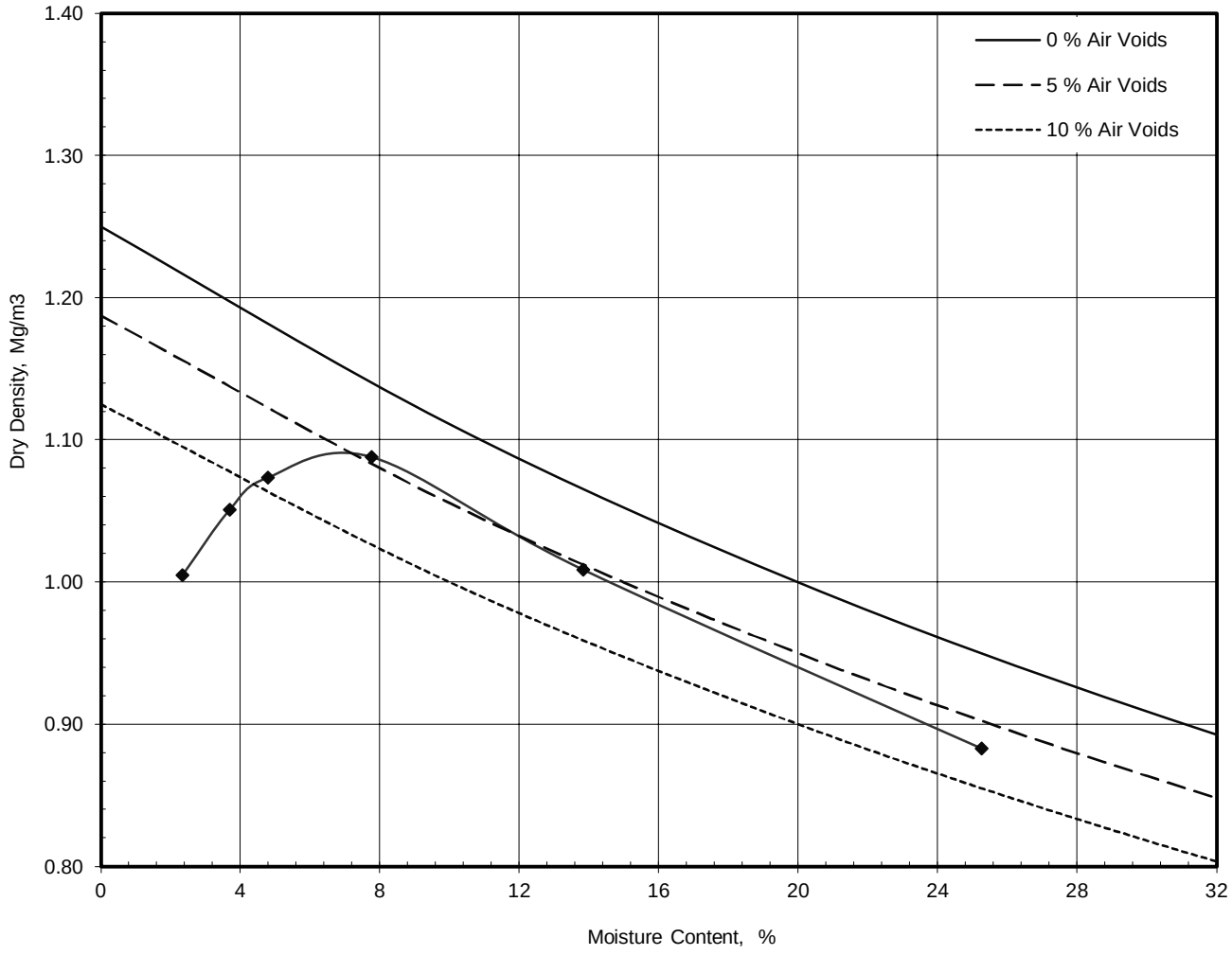



| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | 1 LITRE |
| Samples Used | | Separate specimens tested |
| Material Retained on 37.5 mm Sieve | % | 0 |
| Material Retained on 20.0 mm Sieve | % | 0 |
| Particle Density - Assumed | Mg/m³ | 1.80 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.32** |
| **Optimum Moisture Content** | % | **17** |

Remarks

| bam ritchies | **Dry Density / Moisture Content Relationship Heavy Compaction** | | | Job Ref | **326R** |
|---|---|---|---|---|---|
| | | | | Borehole / Pit No | BH314 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1029596 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth | 1.00 m |
| Specimen Ref. | 1 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.5, 4.5kg rammer | | | Keylab ID | WA1029596 |
| | | | | Compaction Test Reference/No. | |

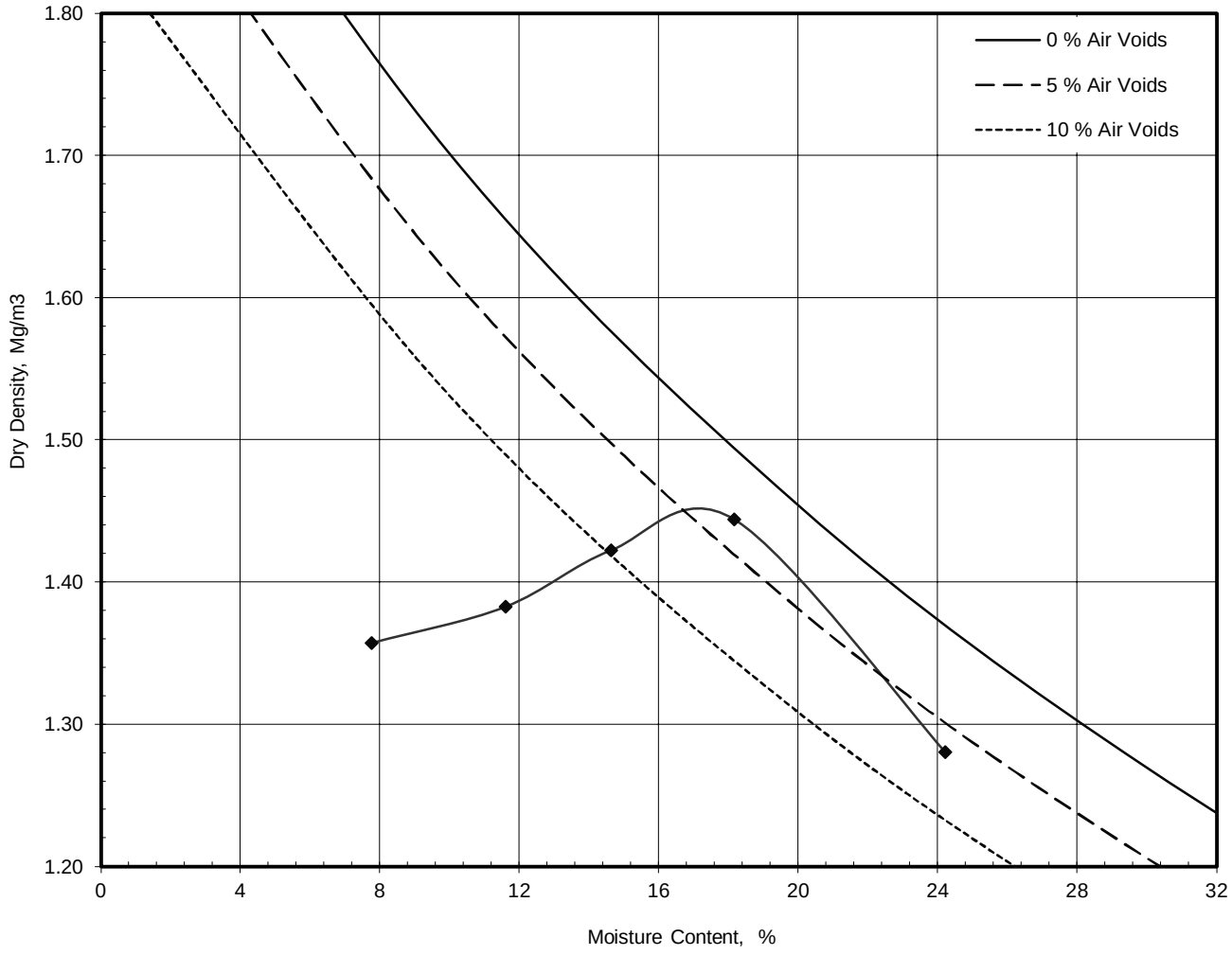



| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | 1 LITRE |
| Samples Used | | Separate specimens tested |
| Material Retained on 37.5 mm Sieve | % | 0 |
| Material Retained on 20.0 mm Sieve | % | 0 |
| Particle Density - Assumed | Mg/m³ | 1.25 |

| | | |
|---|---|---|
| **Maximum Dry Density** | Mg/m³ | **1.09** |
| **Optimum Moisture Content** | % | **6.9** |

Remarks

| bam ritchies | **Dry Density / Moisture Content Relationship Heavy Compaction** | | | Job Ref | **326R** |
|---|---|---|---|---|---|
| | | | | Borehole / Pit No | TP305 |
| Site Name | **Victoria North HIF Infrastructure & Enabling Works** | | | Sample No | WA1031276 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth | 2.00 m |
| Specimen Ref. | 3 | Specimen Depth | m | Sample Type | B |
| Test Method | BS1377:Part 4:1990, clause 3.6, 4.5kg rammer | | | Keylab ID | WA1031276 |
| | | | | Compaction Test Reference/No. | |




| Preparation | | Material used was air dried |
|---|---|---|
| Mould Type | | CBR |
| Samples Used | | Separate specimens tested |
| Material Retained on 37.5 mm Sieve | % | 2 |
| Material Retained on 20.0 mm Sieve | % | 15 |
| Particle Density - Assumed | Mg/m³ | 2.05 |

| **Maximum Dry Density** | Mg/m³ | **1.45** |
|---|---|---|

| **Optimum Moisture Content** | % | **17** |
|---|---|---|

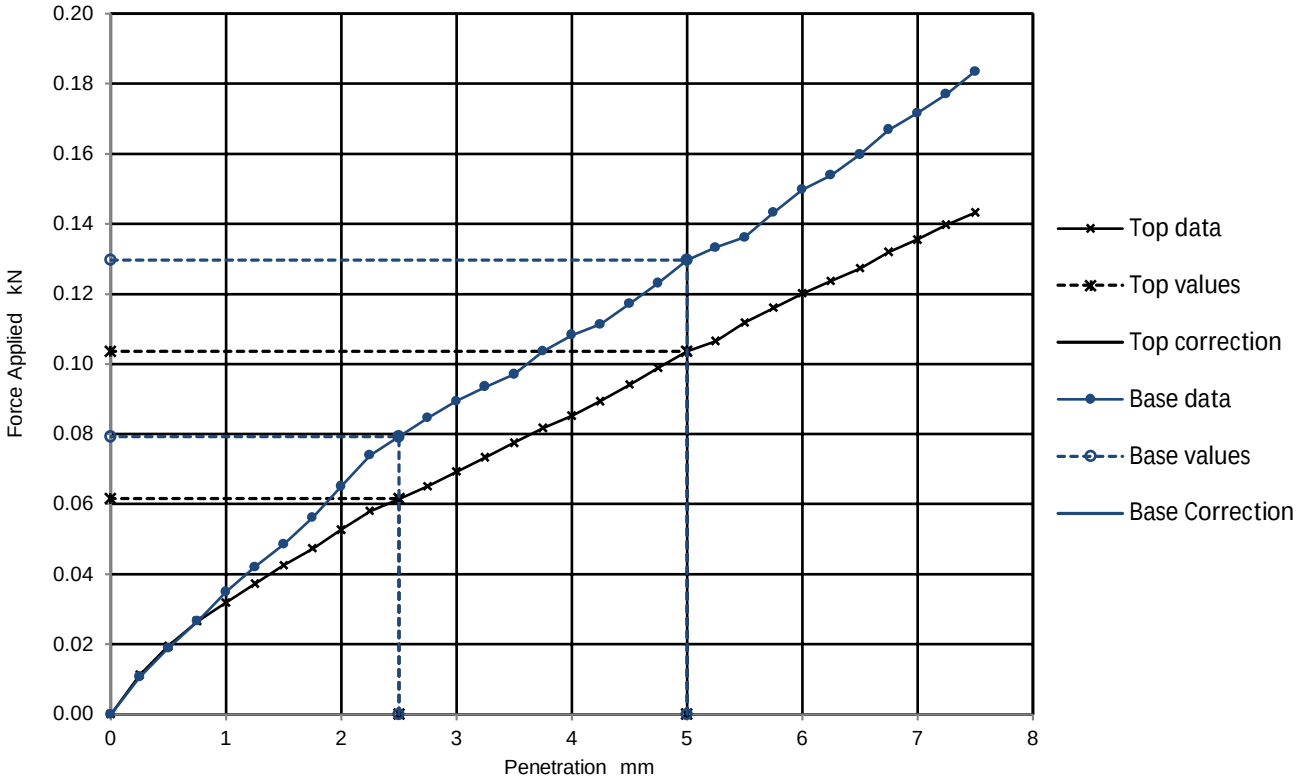
Remarks

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **California Bearing Ratio ( CBR )** | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030278 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth m | 0.50 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1030278 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 3 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.95 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.57 | Mg/m3 | | 4 | kPa |
| | Moisture content | 24.1 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 0.5 | 0.5 | 0.5 | 0.6 | 21.6 |
| BASE | No | 0.6 | 0.7 | 0.7 | | 22.9 |

General remarks, Test specific remarks,

| | | |
|---|---|---|
| | | |

1

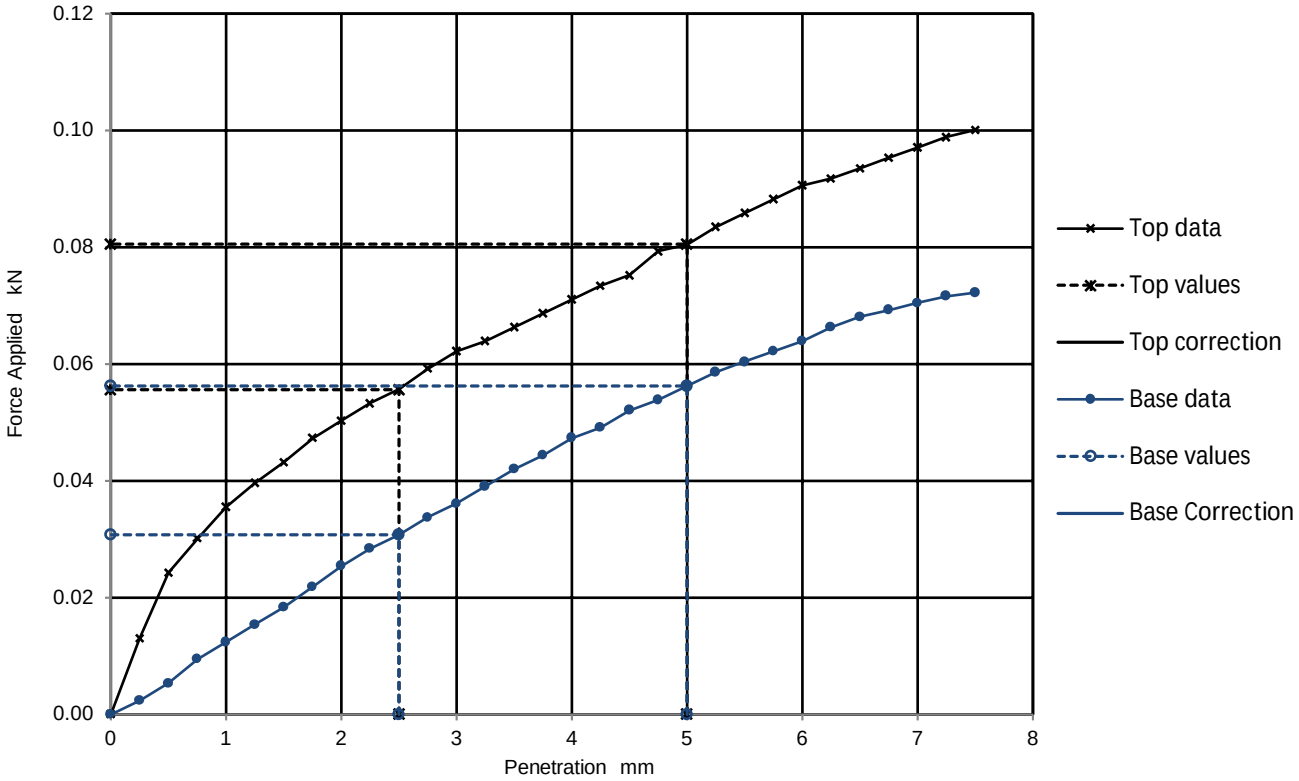
1

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033054 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth m | 3.00 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1033054 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 2 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.97 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.57 | Mg/m3 | | 4 | kPa |
| | Moisture content | 25.2 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 0.4 | 0.4 | 0.4 | 0.4 | 23.1 |
| BASE | No | 0.2 | 0.3 | 0.3 | | 23.4 |

General remarks, Test specific remarks,

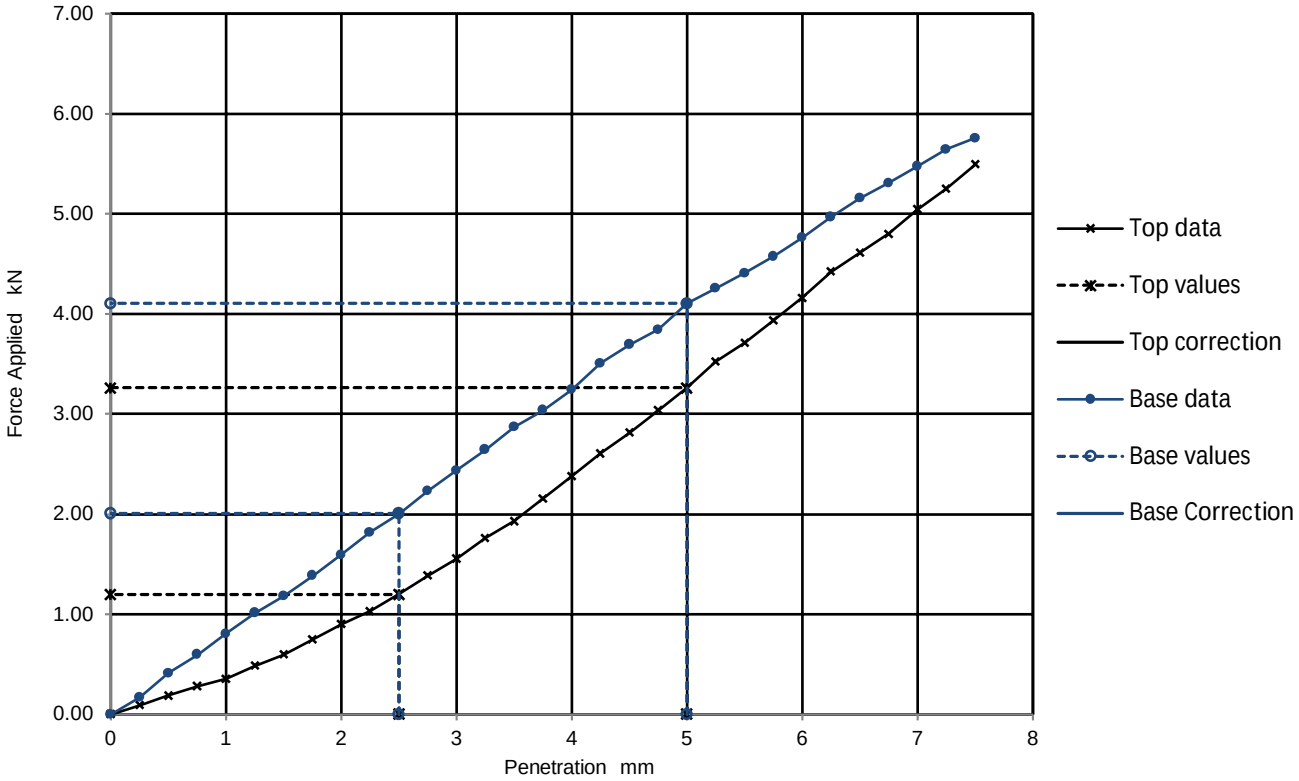
| | | |
|---|---|---|
| | | 1 |
| | | 2 |

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **California Bearing Ratio ( CBR )** | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029566 |
| Soil Description | Grey gravelly clayey SAND | | | Depth m | 0.50 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1029566 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 8 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.43 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.14 | Mg/m3 | | 4 | kPa |
| | Moisture content | 25.8 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % 2.5mm | 5mm | Highest | Average | Moisture Content % |
|---|---|---|---|---|---|---|
| TOP | No | 9.1 | 16.0 | 16.0 | 18.4 | 23.8 |
| BASE | No | 15.0 | 21.0 | 21.0 | | 27.2 |

General remarks, Test specific remarks,

| | | |
|---|---|---|
| | | |

1

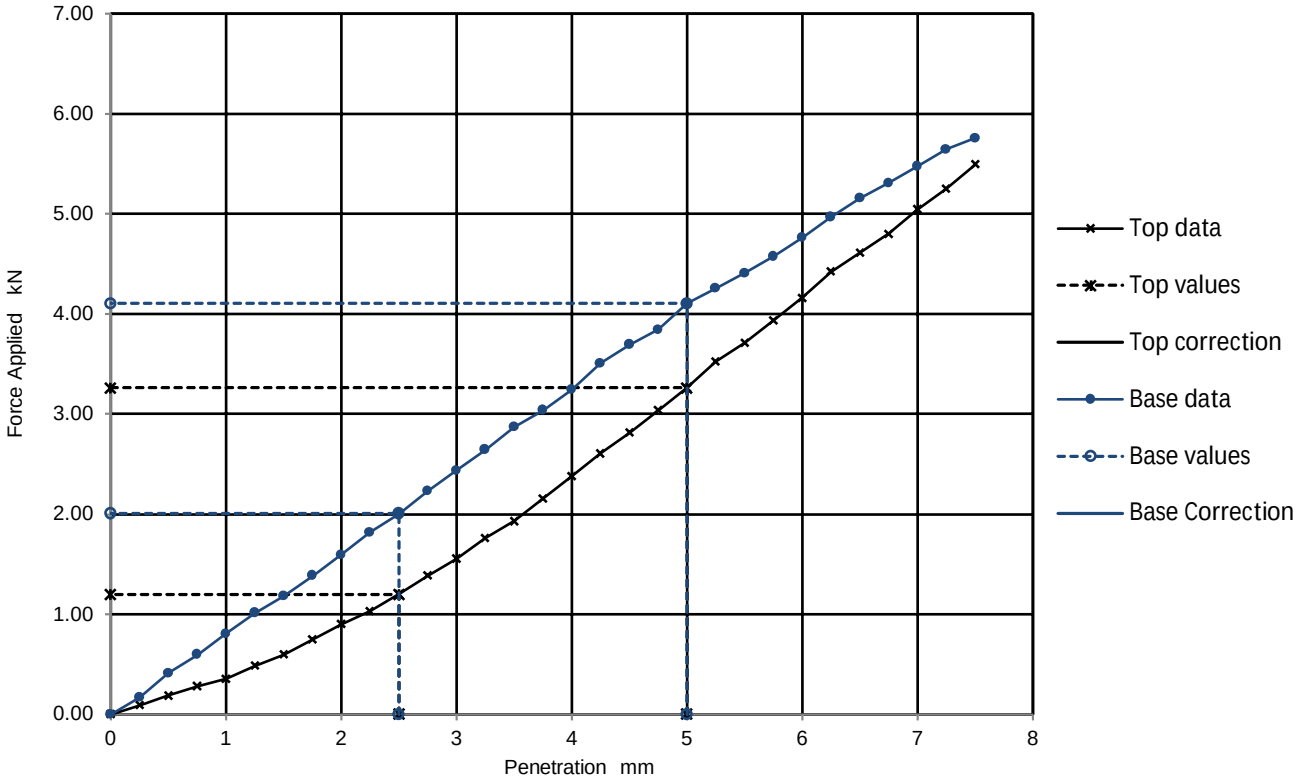
3

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029570 |
| Soil Description | Grey gravelly clayey SAND M/G | | | Depth m | 1.20 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1029570 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 8 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.43 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.14 | Mg/m3 | | 4 | kPa |
| | Moisture content | 25.8 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % 2.5mm | 5mm | Highest | Average | Moisture Content % |
|---|---|---|---|---|---|---|
| TOP | No | 9.1 | 16.0 | 16.0 | 18.4 | 23.8 |
| BASE | No | 15.0 | 21.0 | 21.0 | | 27.2 |

General remarks,

Test specific remarks,

1

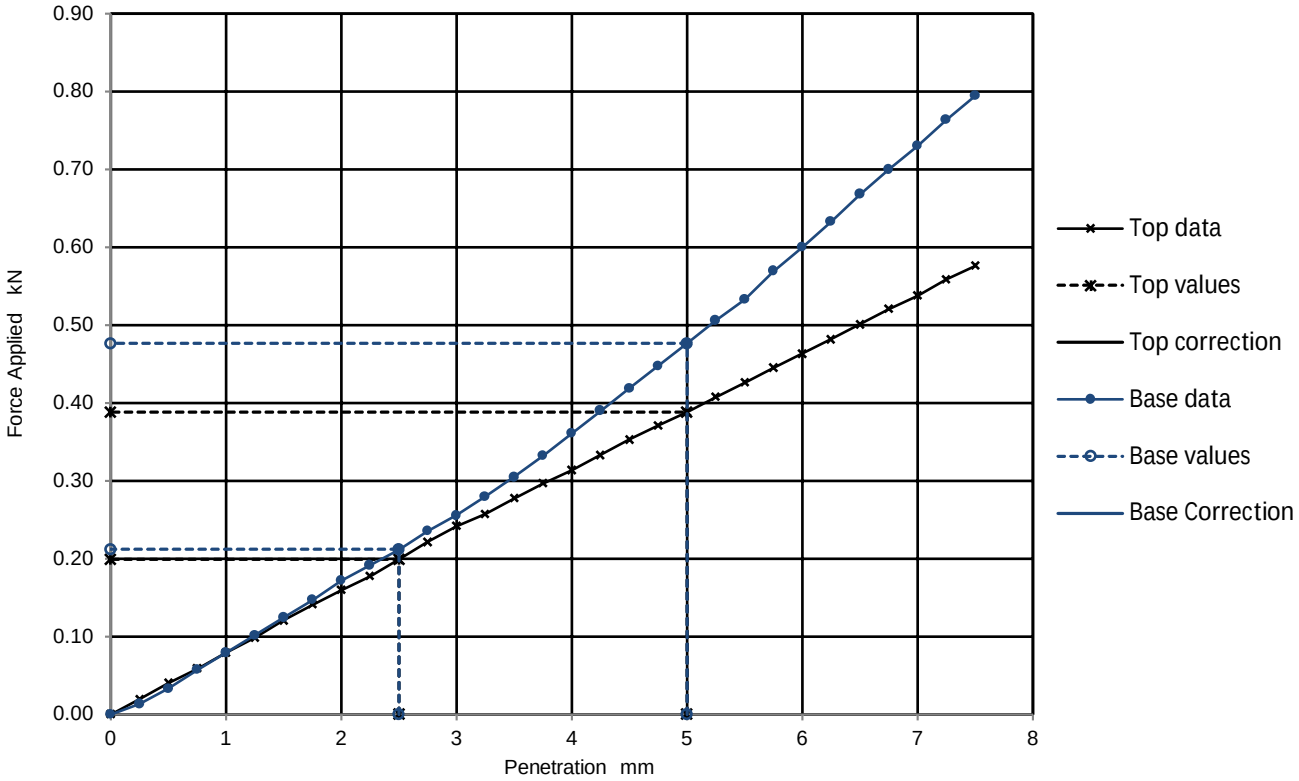
4

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TP304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031262 |
| Soil Description | Brown gravelly clayey SAND | | | Depth m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1031262 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 2 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 2.00 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.71 | Mg/m3 | | 4 | kPa |
| | Moisture content | 17.2 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % 2.5mm | 5mm | Highest | Average | Moisture Content % |
|---|---|---|---|---|---|---|
| TOP | No | 1.5 | 1.9 | 1.9 | 2.2 | 16.6 |
| BASE | No | 1.6 | 2.4 | 2.4 | | 16.5 |

General remarks,

Test specific remarks,

1

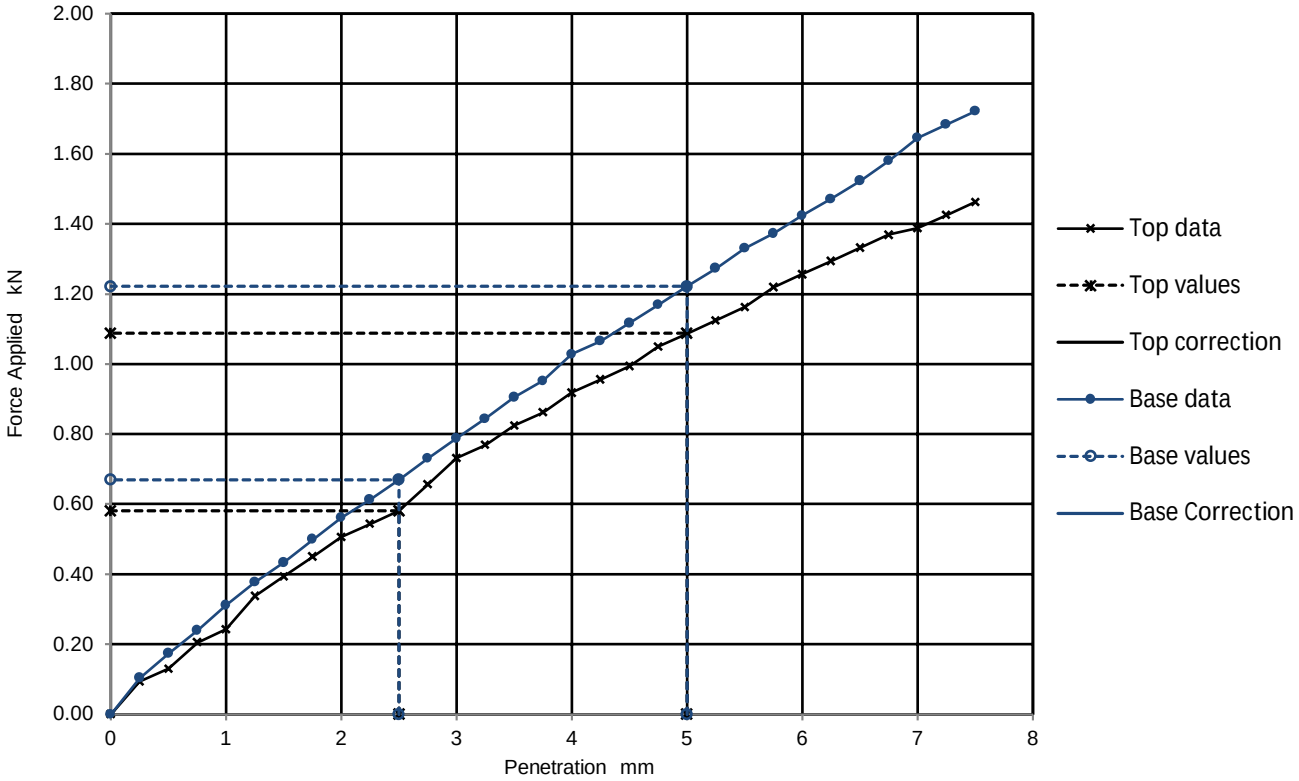
1

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TP305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031274 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1031274 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 10 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.58 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.22 | Mg/m3 | | 4 | kPa |
| | Moisture content | 29.2 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 4.4 | 5.4 | 5.4 | 5.8 | 27.1 |
| BASE | No | 5.1 | 6.1 | 6.1 | | 30.5 |

General remarks, Test specific remarks,

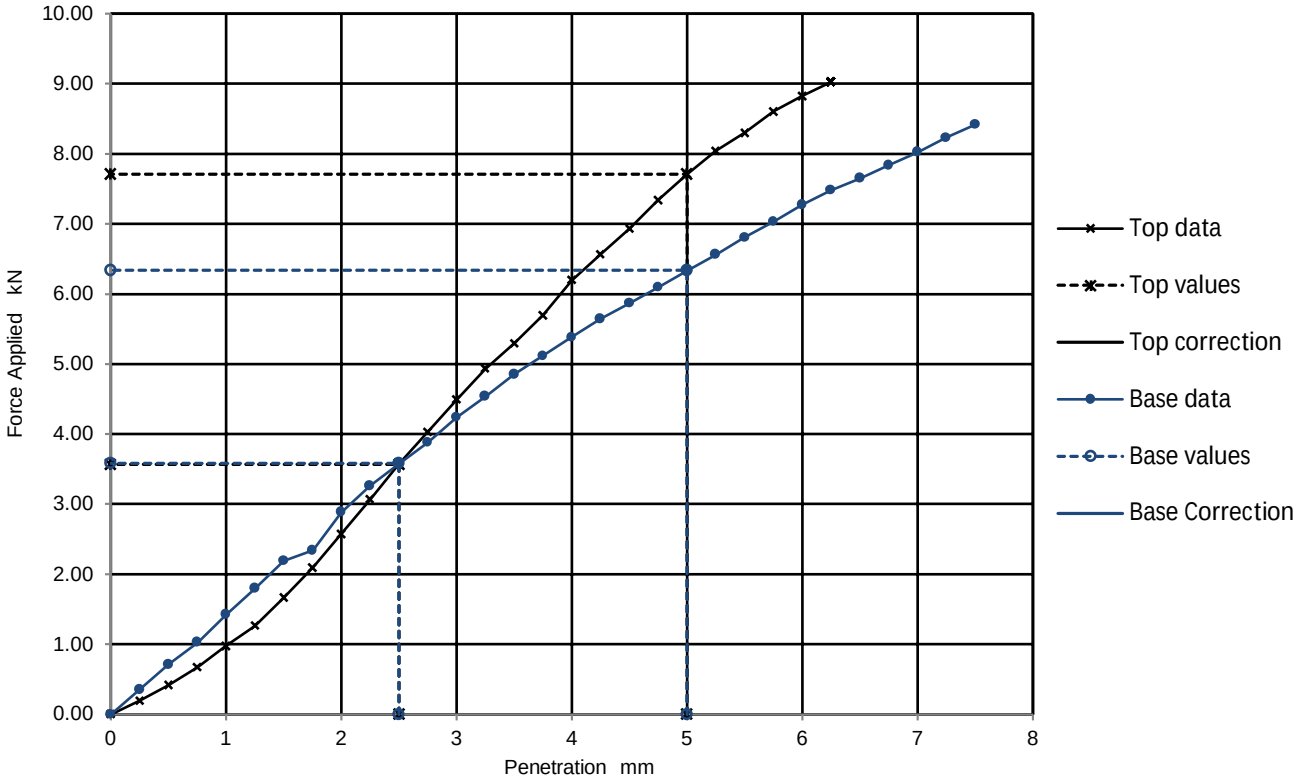
| | | |
|---|---|---|
| | | 1 |
| | | 2 |

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TP306 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031279 |
| Soil Description | Grey gravelly SAND M/G | | | Depth m | 0.50 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1031279 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 10 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.29 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 0.97 | Mg/m3 | | 4 | kPa |
| | Moisture content | 32.5 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 27.0 | 39.0 | 39.0 | 35.1 | 32.5 |
| BASE | No | 27.0 | 32.0 | 32.0 | | 34.0 |

General remarks,

Test specific remarks,

| | | |
|---|---|---|
| | | |

1

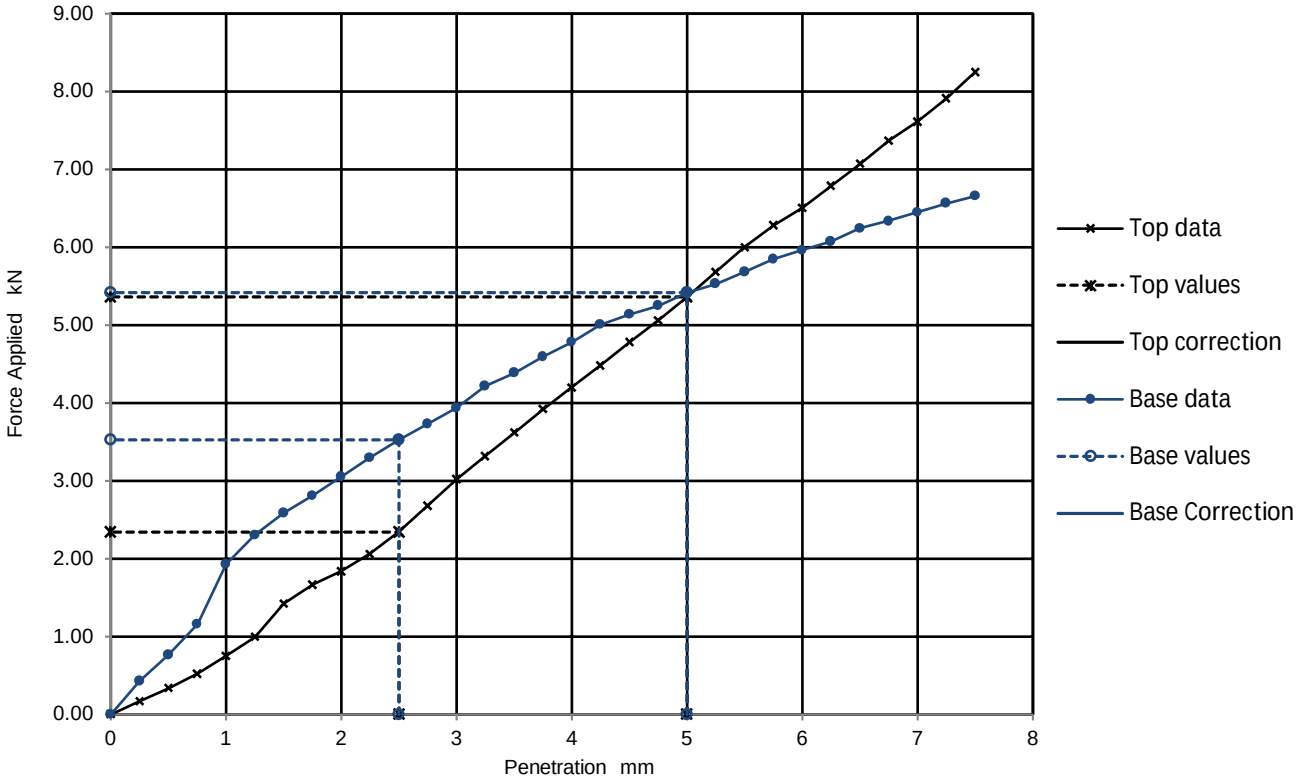
3

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TP307 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031283 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Specimen Description | | | | KeyLAB ID | WA1031283 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 6 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.39 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.11 | Mg/m3 | | 4 | kPa |
| | Moisture content | 25.7 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 18.0 | 27.0 | 27.0 | 27.0 | 24.3 |
| BASE | No | 27.0 | 27.0 | 27.0 | | 26.6 |

General remarks, Test specific remarks,

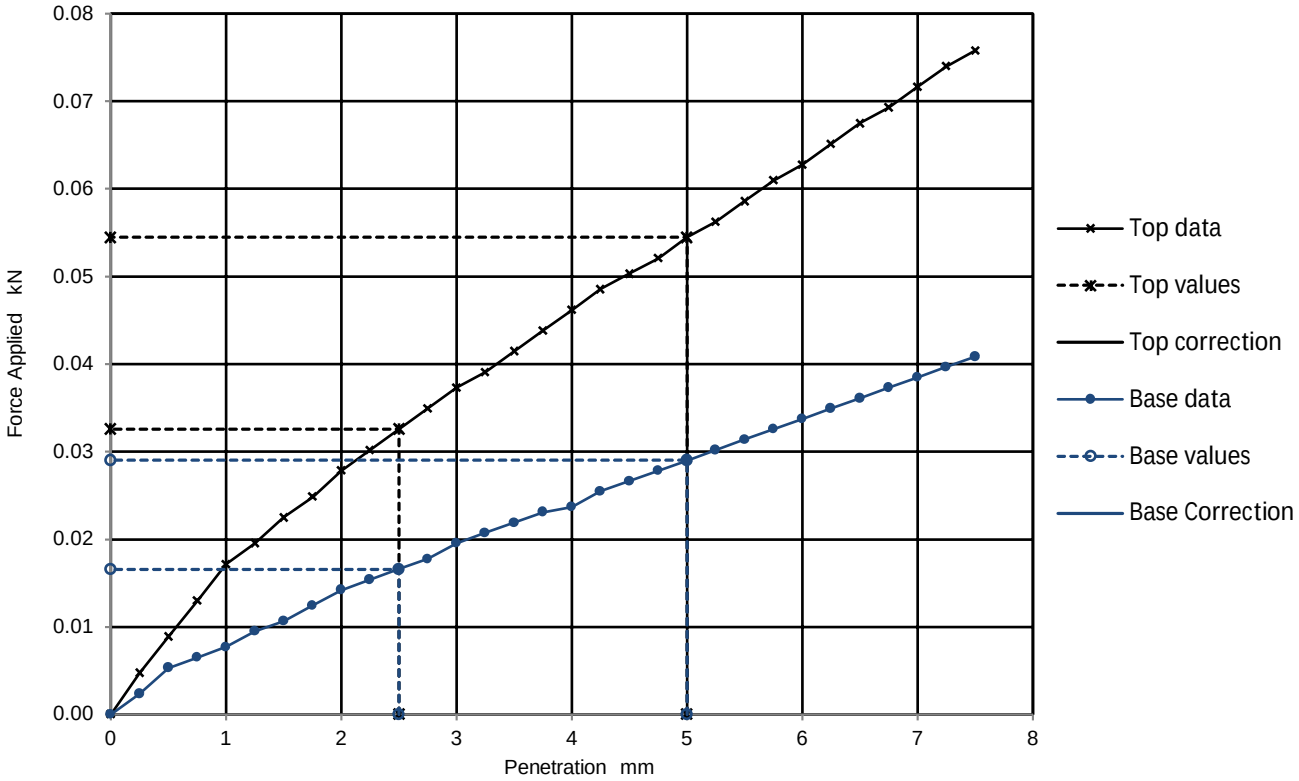
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|---|---|---|
| | | 1 |
| | | 4 |

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TT301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031257 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth m | 2.20 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Specimen Description | | | | KeyLAB ID | WA1031257 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 2 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.93 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.61 | Mg/m3 | | 4 | kPa |
| | Moisture content | 20.0 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 0.3 | 0.3 | 0.3 | 0.2 | 25.7 |
| BASE | No | 0.1 | 0.2 | 0.2 | | 25.7 |

General remarks,

Test specific remarks,

1

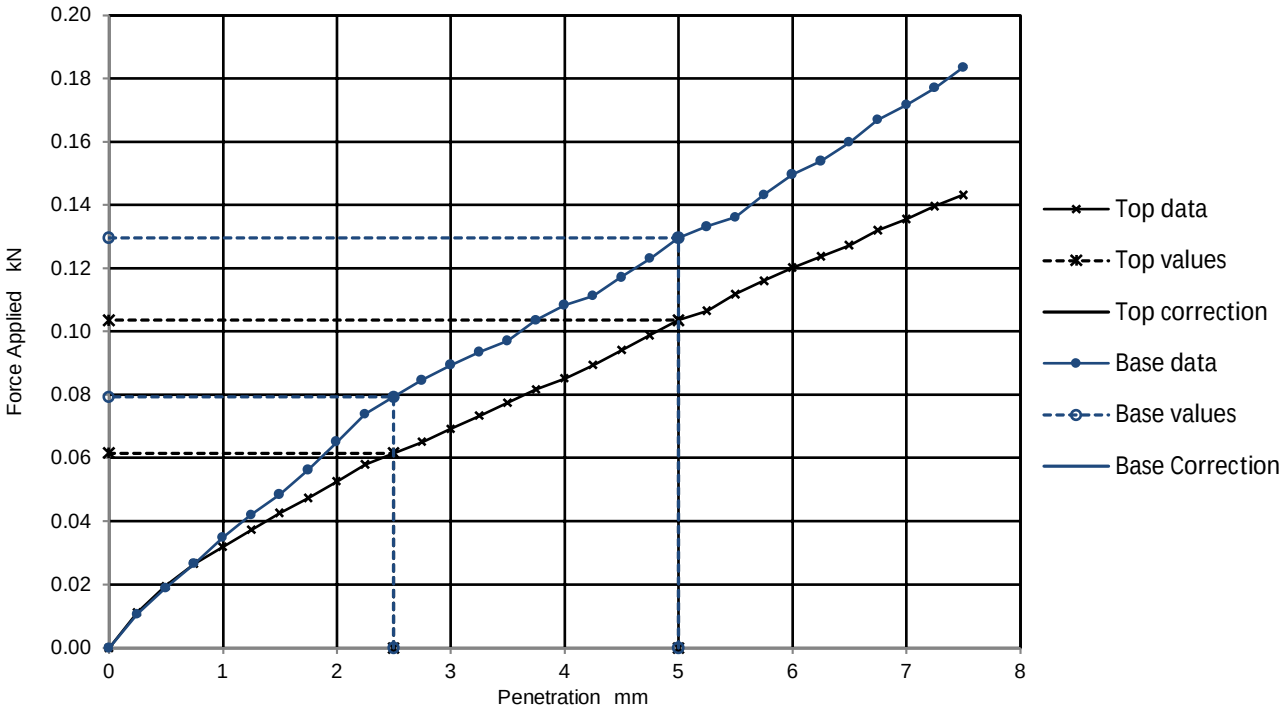
5

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030278 |
| Soil Description | Brown sandy gravelly CLAY M/G | | | Depth m | 0.50 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1030278 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 3 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.95 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.57 | Mg/m3 | | 4 | kPa |
| | Moisture content | 24.1 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 0.5 | 0.5 | 0.5 | 0.6 | 21.6 |
| BASE | No | 0.6 | 0.7 | 0.7 | | 22.9 |

General remarks, Test specific remarks,

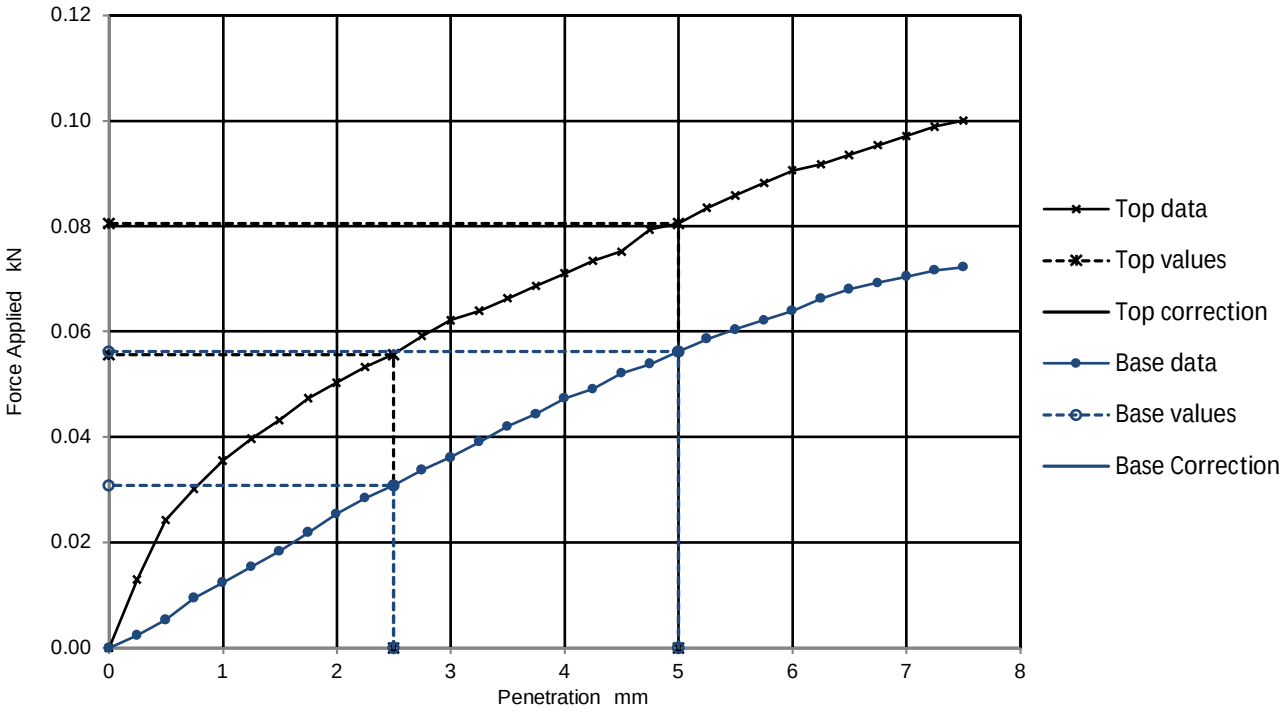
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| | | 1 |

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1033054 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth m | 3.00 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1033054 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 2 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.97 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.57 | Mg/m3 | | 4 | kPa |
| | Moisture content | 25.2 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 0.4 | 0.4 | 0.4 | 0.4 | 23.1 |
| BASE | No | 0.2 | 0.3 | 0.3 | | 23.4 |

General remarks, Test specific remarks,

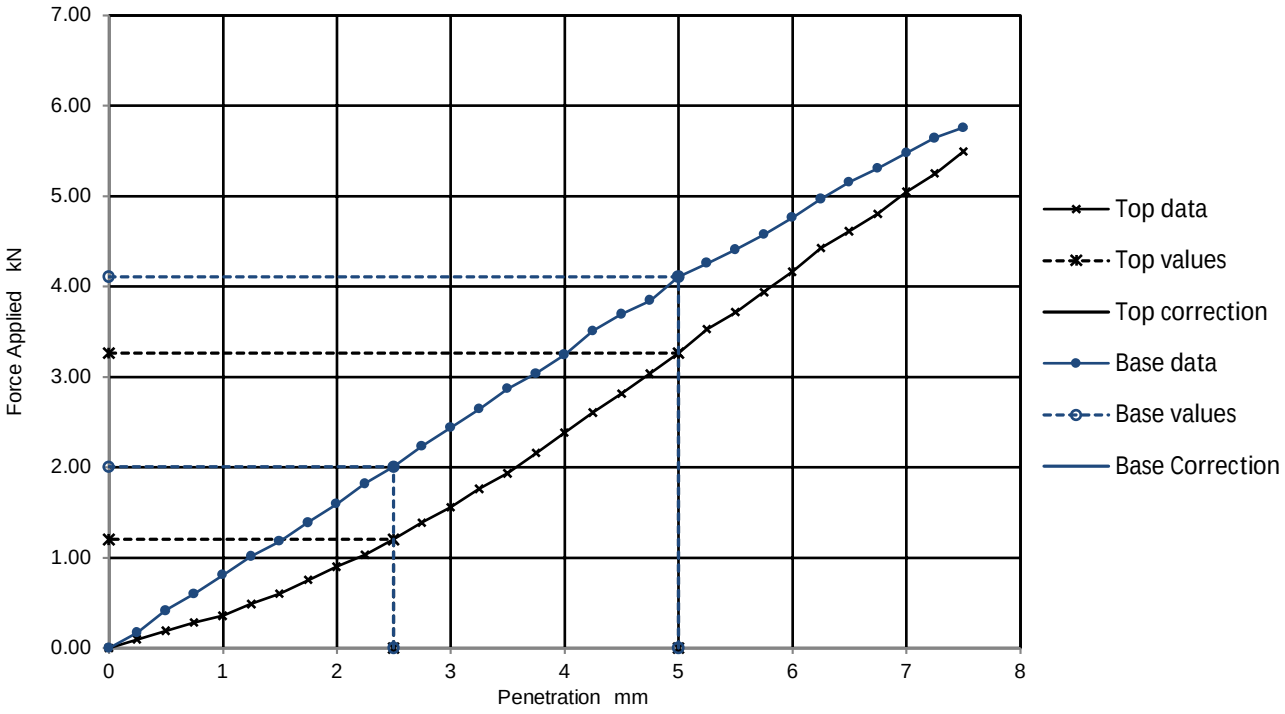
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|---|---|---|
| | | 1 |
| | | 2 |

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029566 |
| Soil Description | Grey gravelly clayey SAND | | | Depth m | 0.50 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1029566 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 8 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.43 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.14 | Mg/m3 | | 4 | kPa |
| | Moisture content | 25.8 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 9.1 | 16.0 | 16.0 | 18.4 | 23.8 |
| BASE | No | 15.0 | 21.0 | 21.0 | | 27.2 |

General remarks,

Test specific remarks,

1

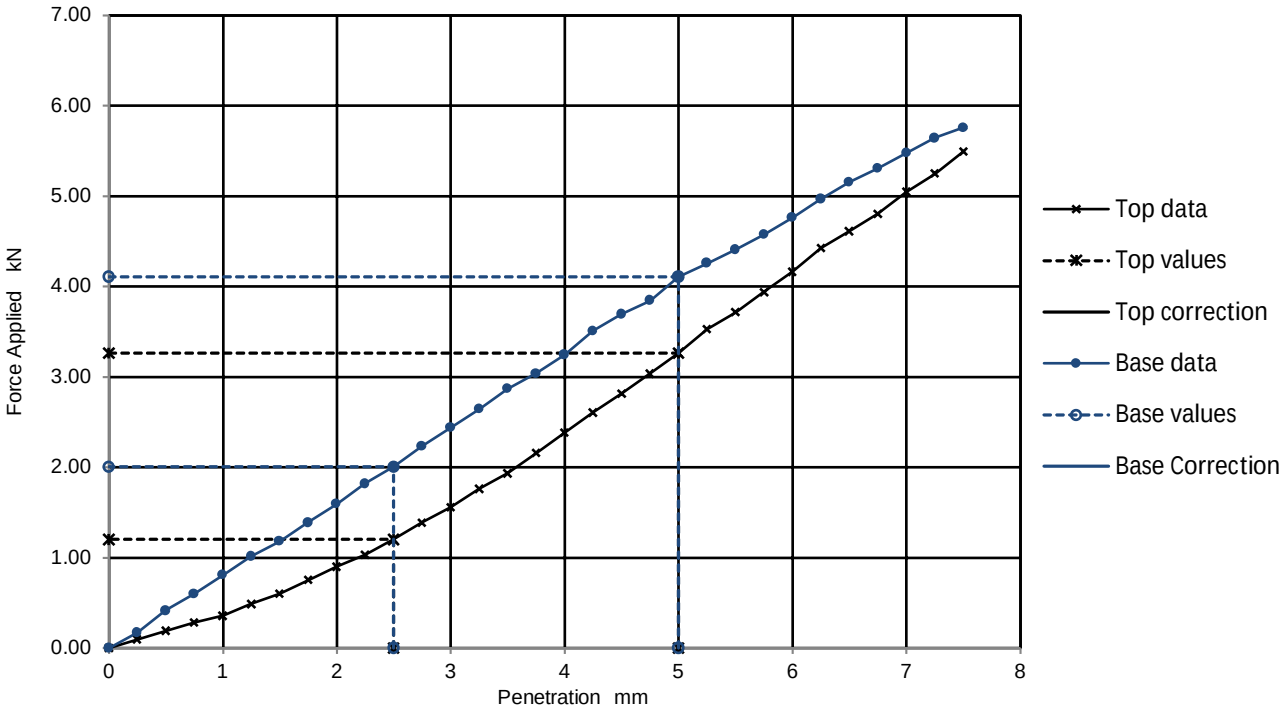
3

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029570 |
| Soil Description | Grey gravelly clayey SAND M/G | | | Depth m | 1.20 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1029570 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 8 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.43 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.14 | Mg/m3 | | 4 | kPa |
| | Moisture content | 25.8 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 9.1 | 16.0 | 16.0 | 18.4 | 23.8 |
| BASE | No | 15.0 | 21.0 | 21.0 | | 27.2 |

General remarks,

Test specific remarks,

1

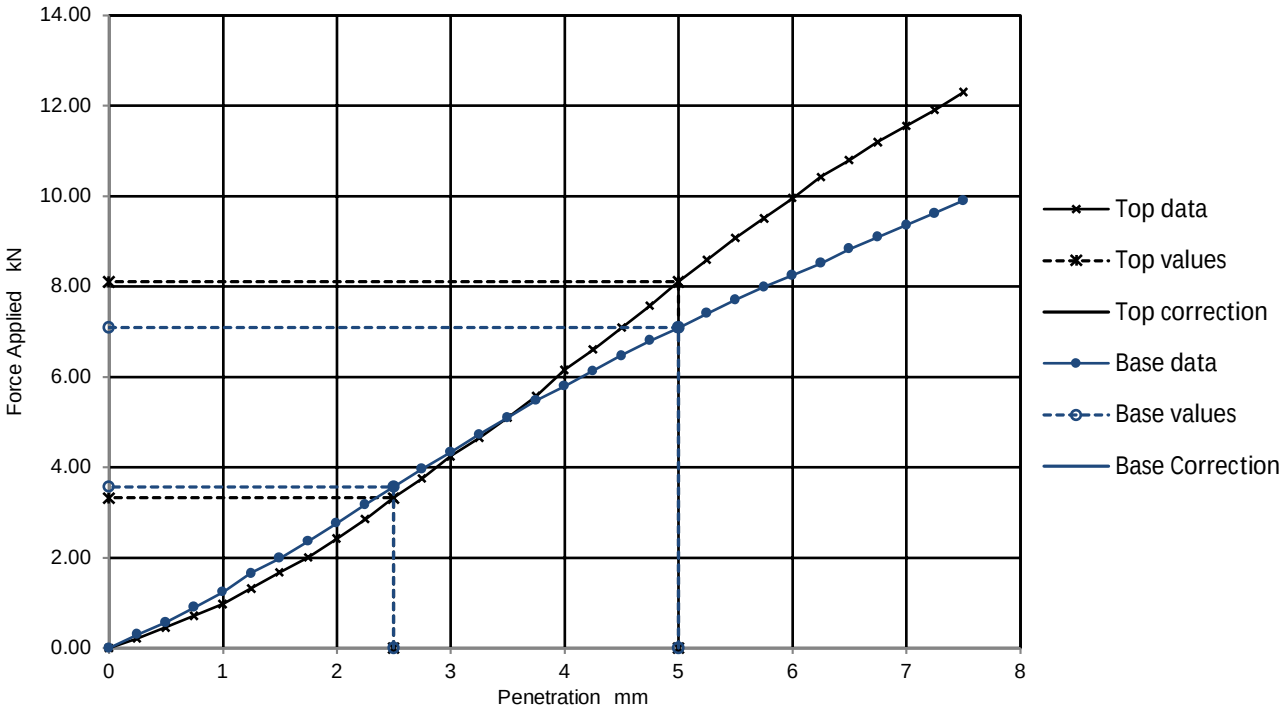
4

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH312 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031301 |
| Soil Description | Grey SAND + GRAVEL | | | Depth m | 1.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1031301 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 13 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 2.04 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.82 | Mg/m3 | | 4 | kPa |
| | Moisture content | 11.8 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 25.0 | 41.0 | 41.0 | 38.0 | 12.4 |
| BASE | No | 27.0 | 35.0 | 35.0 | | 12.6 |

General remarks, Test specific remarks,

| | | |
|---|---|---|
| | | |

1

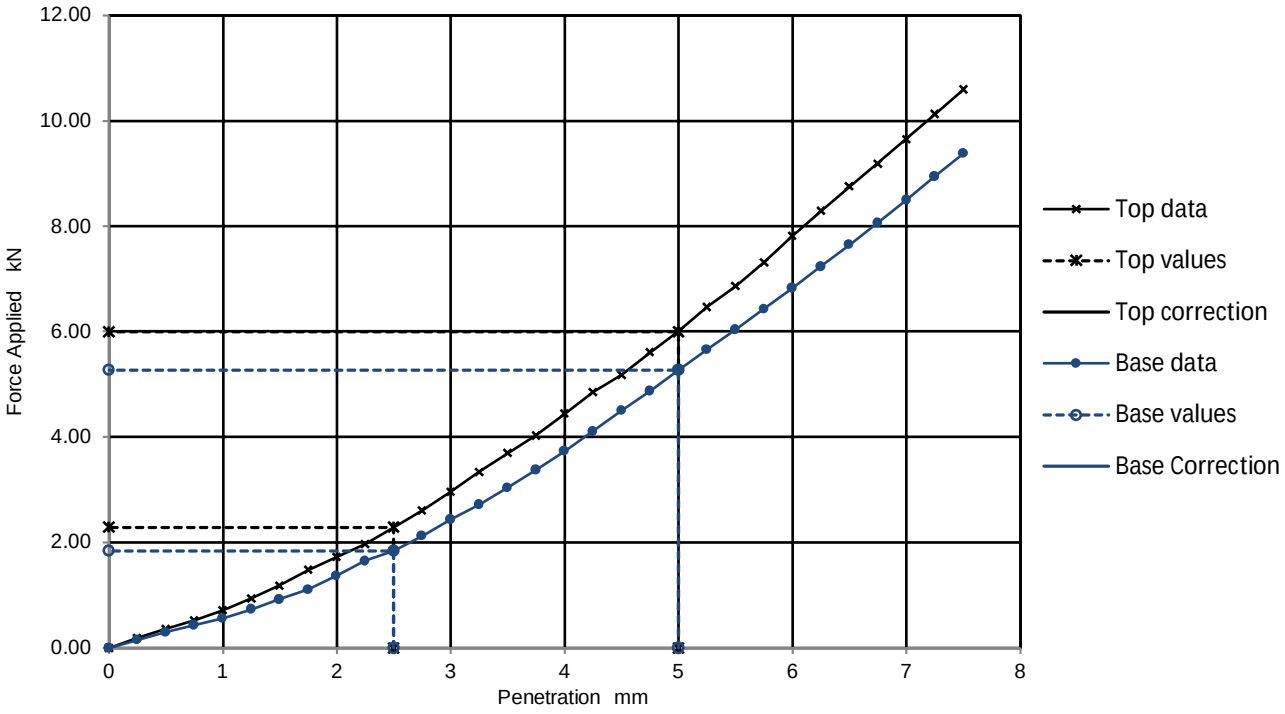
5

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH314 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029606 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth m | 2.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1029606 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 6 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.58 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.25 | Mg/m3 | | 4 | kPa |
| | Moisture content | 26.8 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 17.0 | 30.0 | 30.0 | 28.2 | 32.3 |
| BASE | No | 14.0 | 26.0 | 26.0 | | 32.5 |

General remarks, Test specific remarks,

| | | |
|---|---|---|
| | | |

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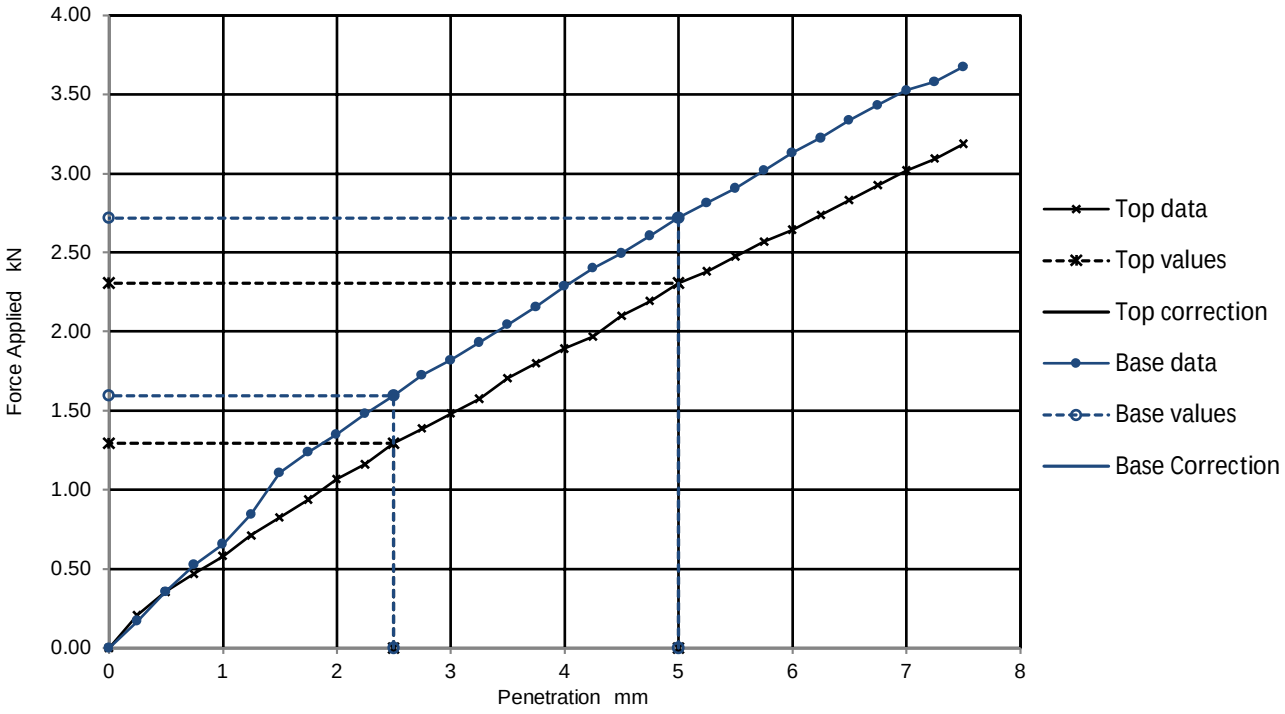
6

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH324 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1030367 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth m | 1.00 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1030367 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 6 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.81 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.55 | Mg/m3 | | 4 | kPa |
| | Moisture content | 16.5 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 9.8 | 12.0 | 12.0 | 12.6 | 17.0 |
| BASE | No | 12.0 | 14.0 | 14.0 | | 16.9 |

General remarks, Test specific remarks,

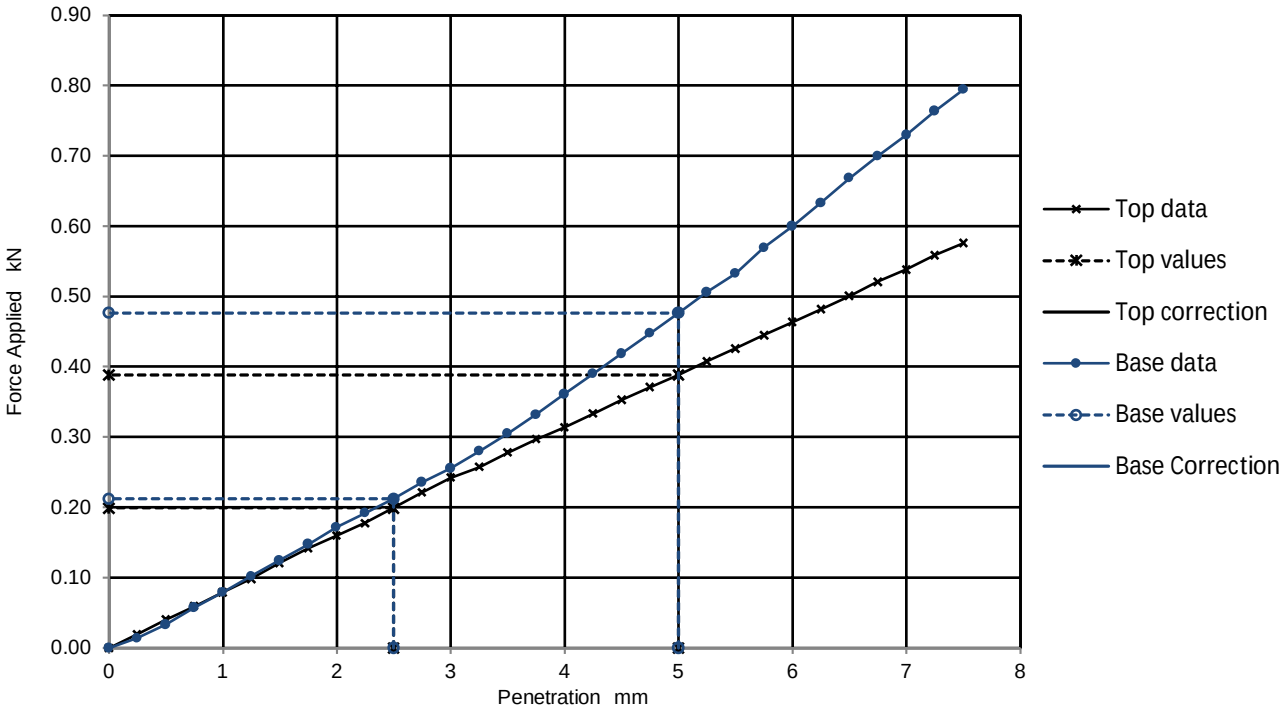
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| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TP304 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031262 |
| Soil Description | Brown gravelly clayey SAND | | | Depth m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1031262 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 2 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 2.00 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.71 | Mg/m3 | | 4 | kPa |
| | Moisture content | 17.2 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 1.5 | 1.9 | 1.9 | 2.2 | 16.6 |
| BASE | No | 1.6 | 2.4 | 2.4 | | 16.5 |

General remarks, Test specific remarks,

| | | |
|---|---|---|
| | | |

1

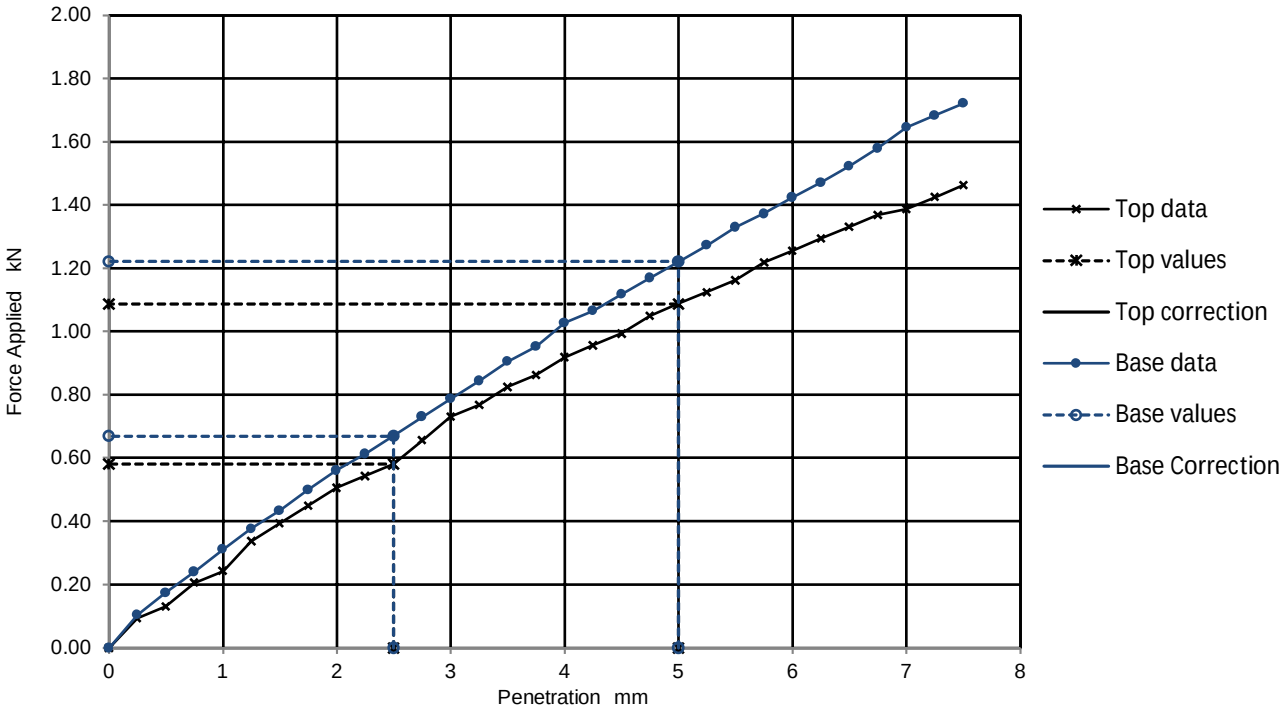
8

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TP305 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031274 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1031274 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 10 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.58 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.22 | Mg/m3 | | 4 | kPa |
| | Moisture content | 29.2 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 4.4 | 5.4 | 5.4 | 5.8 | 27.1 |
| BASE | No | 5.1 | 6.1 | 6.1 | | 30.5 |

General remarks, Test specific remarks,

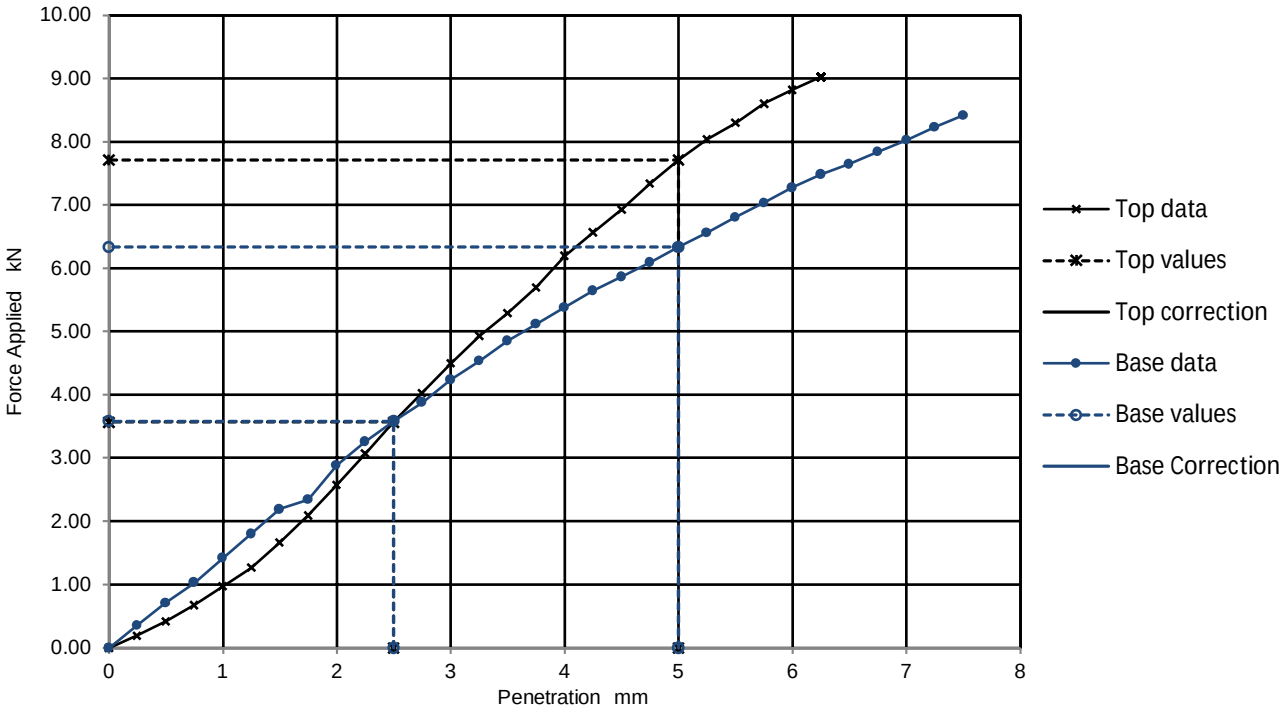
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| | | |

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TP306 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031279 |
| Soil Description | Grey gravelly SAND M/G | | | Depth m | 0.50 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | B |
| Specimen Description | | | | KeyLAB ID | WA1031279 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 10 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.29 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 0.97 | Mg/m3 | | 4 | kPa |
| | Moisture content | 32.5 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 27.0 | 39.0 | 39.0 | 35.1 | 32.5 |
| BASE | No | 27.0 | 32.0 | 32.0 | | 34.0 |

General remarks, Test specific remarks,

| | | |
|---|---|---|
| | | |

1

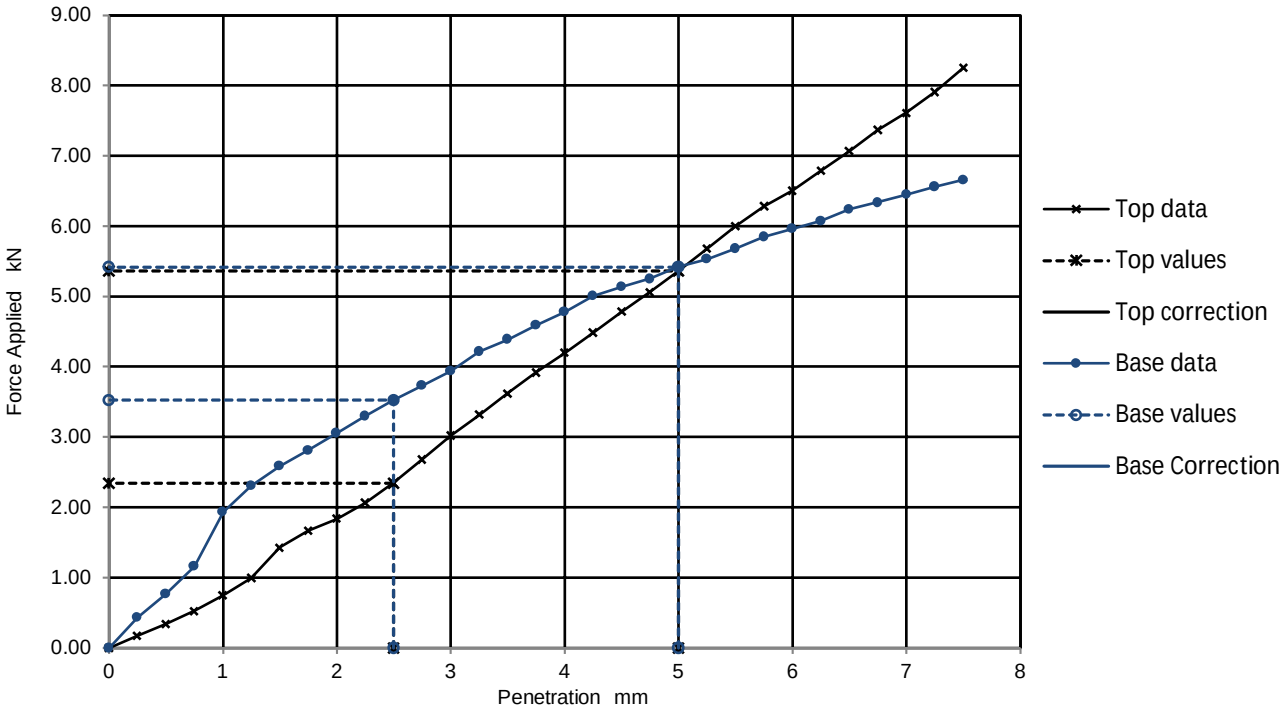
10

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TP307 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031283 |
| Soil Description | Grey gravelly SAND M/G ash | | | Depth m | 1.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Specimen Description | | | | KeyLAB ID | WA1031283 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 6 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.39 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.11 | Mg/m3 | | 4 | kPa |
| | Moisture content | 25.7 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 18.0 | 27.0 | 27.0 | 27.0 | 24.3 |
| BASE | No | 27.0 | 27.0 | 27.0 | | 26.6 |

General remarks, Test specific remarks,

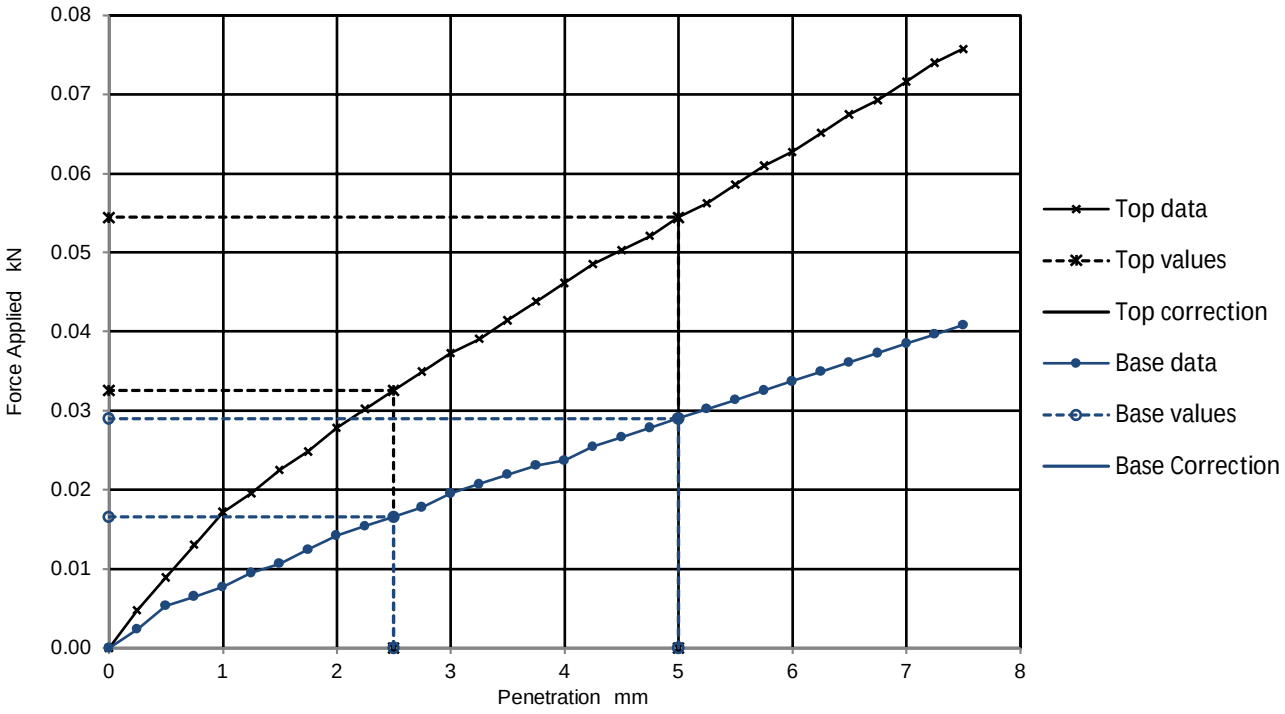
| | | |
|---|---|---|
| | | |

| bam ritchies | California Bearing Ratio ( CBR ) | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TT301 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031257 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth m | 2.20 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | LB |
| Specimen Description | | | | KeyLAB ID | WA1031257 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | CBR Test Number | 1 |

**Specimen Preparation**

| | | | | | | |
|---|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked | |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | | days |
| | | | | Time to surface | | days |
| | | | | Amount of swell recorded | | mm |
| Material retained on 20mm sieve removed | | 2 | % | Dry density after soaking | | Mg/m3 |
| Initial Specimen details | Bulk density | 1.93 | Mg/m3 | Surcharge applied | 6 | kg |
| | Dry density | 1.61 | Mg/m3 | | 4 | kPa |
| | Moisture content | 20.0 | % | | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % | | | | Moisture Content % |
|---|---|---|---|---|---|---|
| | | 2.5mm | 5mm | Highest | Average | |
| TOP | No | 0.3 | 0.3 | 0.3 | 0.2 | 25.7 |
| BASE | No | 0.1 | 0.2 | 0.2 | | 25.7 |

General remarks, Test specific remarks,

| | | |
|---|---|---|
| | | |

1

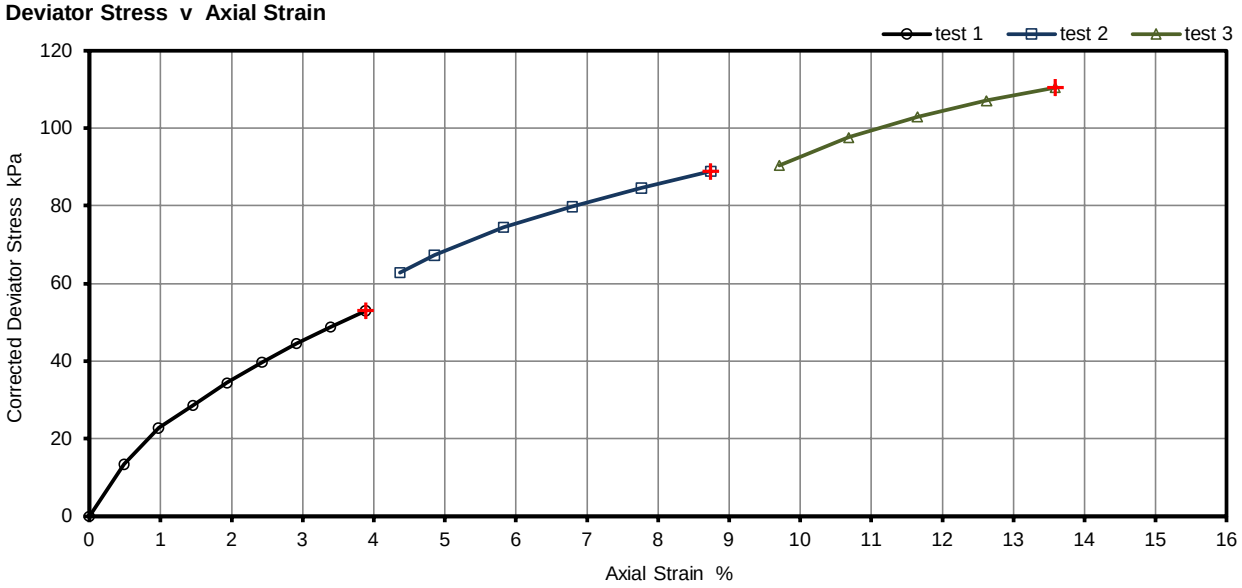
12

| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - Multistage test** | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH302 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020694 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth (m) | 5.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1020694 |
| Test Method | BS1377:Part 7:1990, clause 9, multistage test on a single specimen | | | | |

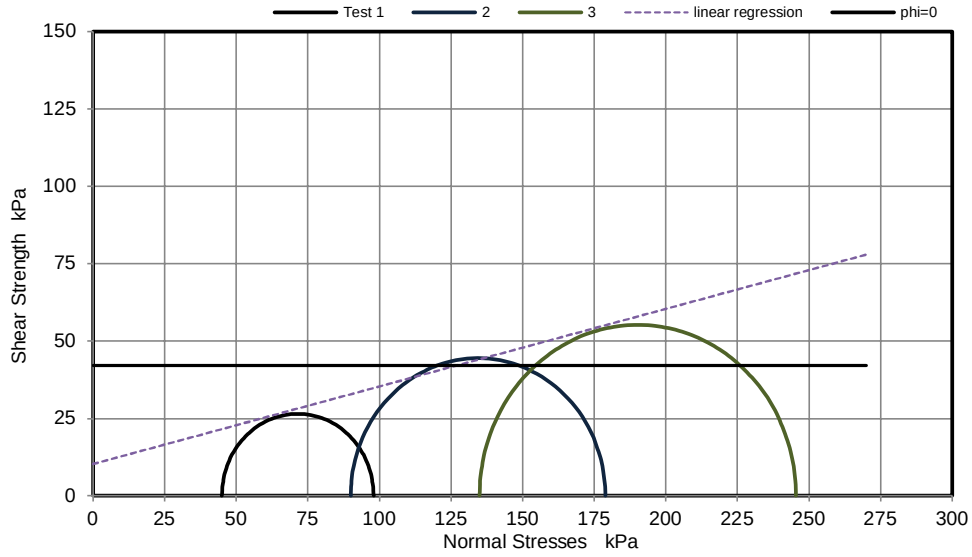
| | | |
|---|---|---|
| Length | mm | 206.0 |
| Diameter | mm | 103.0 |
| Bulk Density | Mg/m3 | 2.04 |
| Moisture Content | % | 19.2 |
| Dry Density | Mg/m3 | 1.71 |

| | | | | | |
|---|---|---|---|---|---|
| Rate of Strain | | %/min | 2.00 | | |
| Stage Number | | | 1 | 2 | 3 |
| Cell Pressure | | kPa | 45 | 90 | 135 |
| End of stage | Axial Strain | % | 3.9 | 8.7 | 13.6 |
| | Deviator Stress, ( σ1 - σ3 corrected for area and membrane | kPa | 53.0 | 88.9 | 110.5 |
| | Shear strength, cu | kPa | 26.5 | 44.4 | 55.2 |
| | Mode of failure | | Plastic | | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




ϕu = 0

Average cu 42 kPa

Linear Regression

ϕu 14.1 °

cu 10 kPa

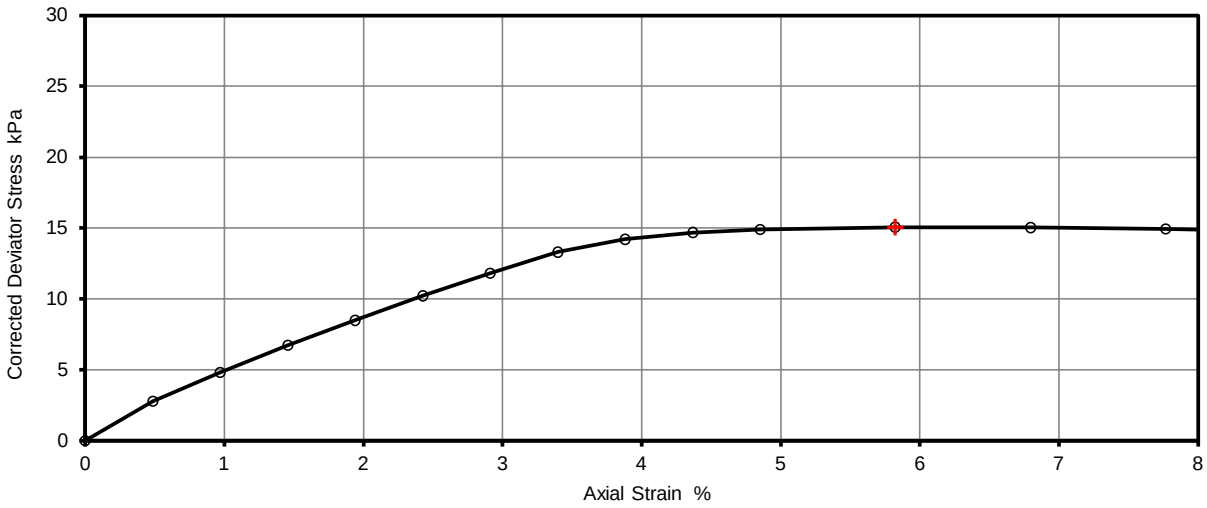
Mohr circles and their interpretation is not covered by BS1377. These are provided for information only.

**Remarks**

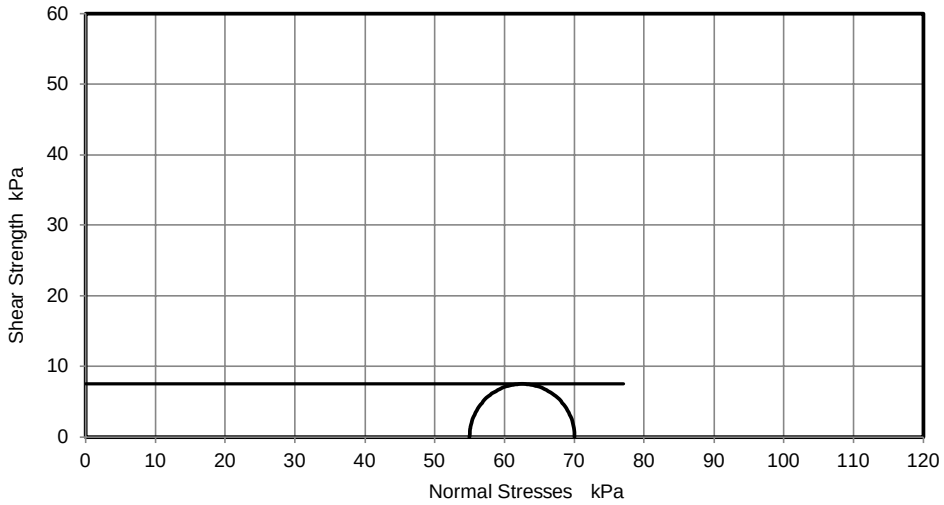
| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen** | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH301A |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1026352 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth (m) | 4.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1026352 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 2.06 | Mg/m3 |
| Moisture Content | | 36.9 | % |
| Dry Density | | 1.51 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 55 | kPa |
| At failure | Axial Strain | 5.8 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 15 | kPa |
| | Undrained Shear Strength, cu | 8 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Plastic | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




Deviator stress corrected for area change and membrane effects

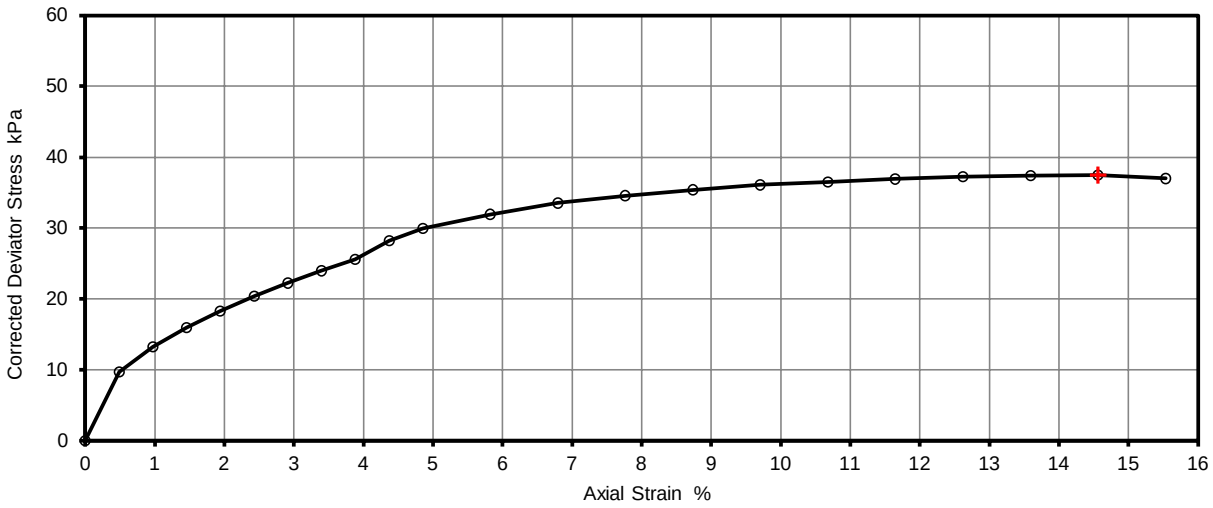
Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

**Remarks**

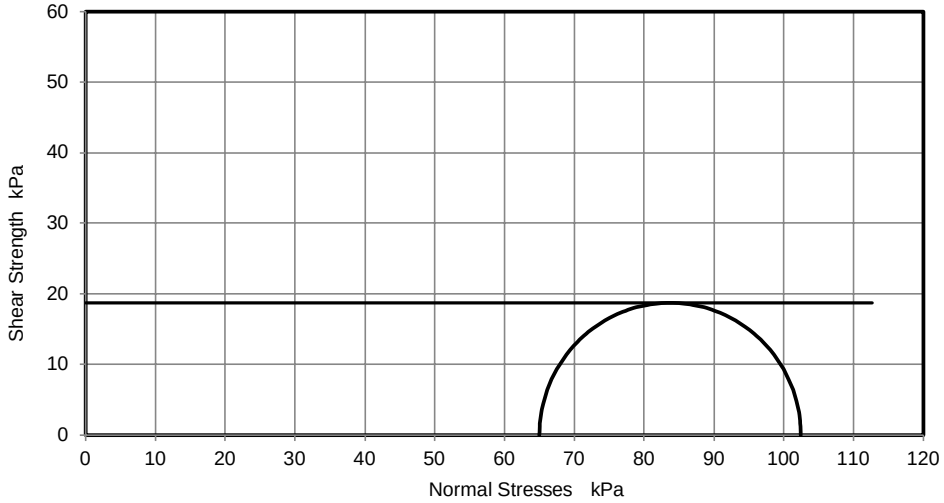
| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen** | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH301A |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1026353 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth (m) | 5.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1026353 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 1.93 | Mg/m3 |
| Moisture Content | | 22.0 | % |
| Dry Density | | 1.58 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 65 | kPa |
| At failure | Axial Strain | 14.6 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 37 | kPa |
| | Undrained Shear Strength, cu | 19 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Compound | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




Deviator stress corrected for area change and membrane effects

Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

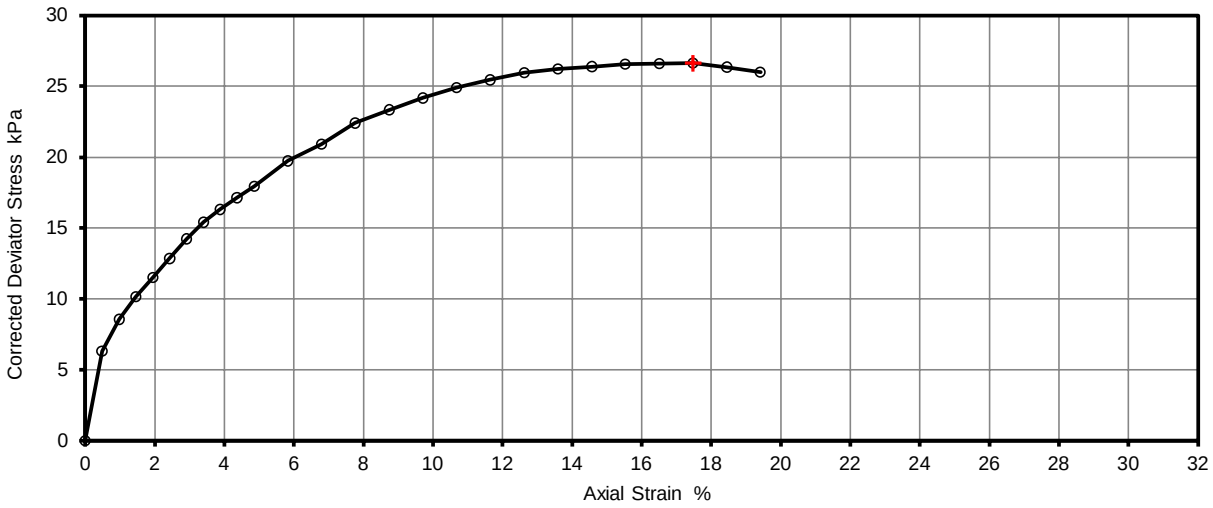
**Remarks**

# Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

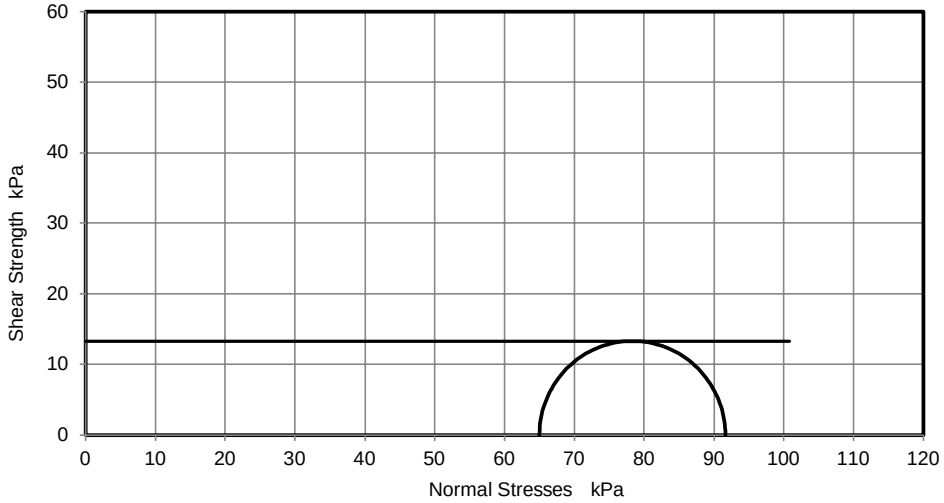
| | | | | | |
|---|---|---|---|---|---|
| | | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH301B |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1026356 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth (m) | 5.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1026356 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 2.06 | Mg/m3 |
| Moisture Content | | 20.5 | % |
| Dry Density | | 1.71 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 65 | kPa |
| At failure | Axial Strain | 17.5 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 27 | kPa |
| | Undrained Shear Strength, cu | 13 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Plastic | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




Deviator stress corrected for area change and membrane effects

Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

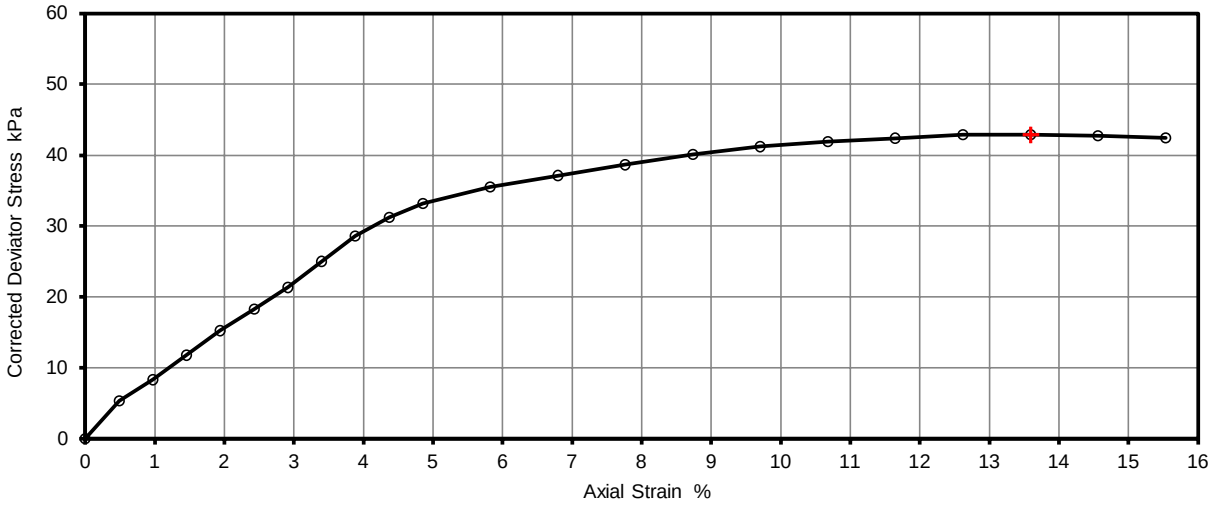
**Remarks**

# Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

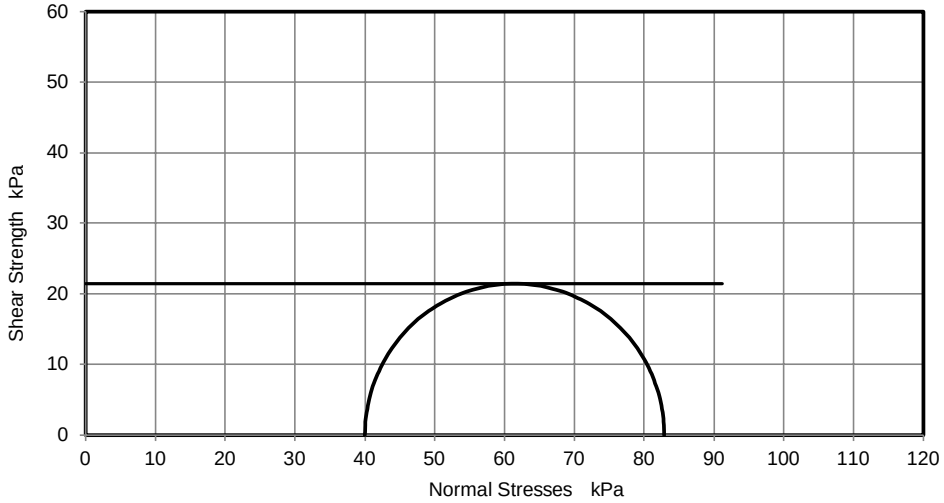
| | | | | | |
|---|---|---|---|---|---|
| | | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH304A |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031349 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth (m) | 6.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1031349 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 1.90 | Mg/m3 |
| Moisture Content | | 24.9 | % |
| Dry Density | | 1.52 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 40 | kPa |
| At failure | Axial Strain | 13.6 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 43 | kPa |
| | Undrained Shear Strength, cu | 21 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Compound | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




Deviator stress corrected for area change and membrane effects

Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

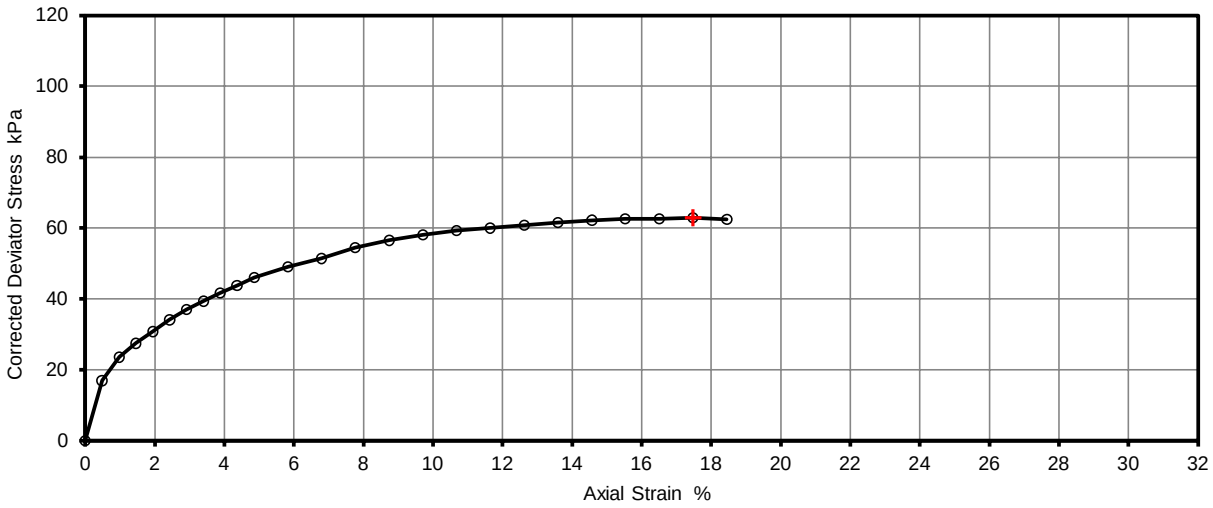
**Remarks**

# Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

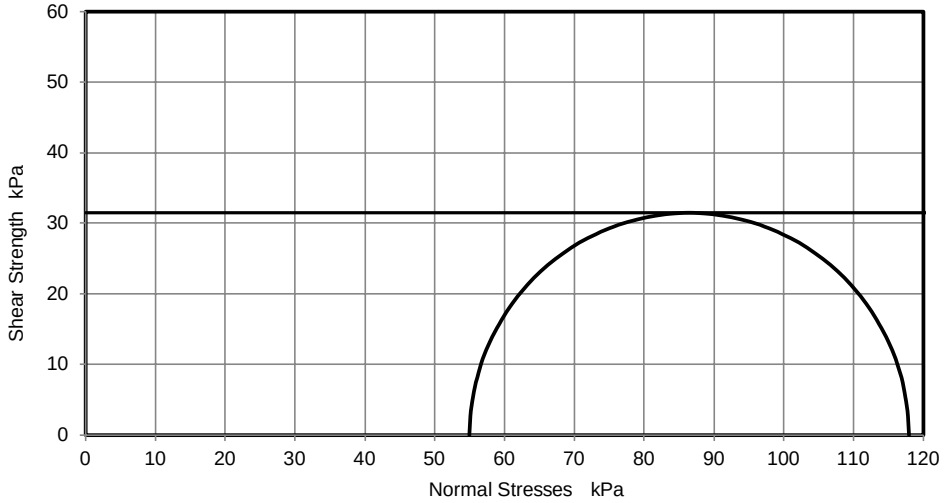
| | | | | | |
|---|---|---|---|---|---|
| | | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH304A |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031350 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth (m) | 7.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1031350 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 1.96 | Mg/m3 |
| Moisture Content | | 20.0 | % |
| Dry Density | | 1.63 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 55 | kPa |
| At failure | Axial Strain | 17.5 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 63 | kPa |
| | Undrained Shear Strength, cu | 31 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Compound | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




Deviator stress corrected for area change and membrane effects

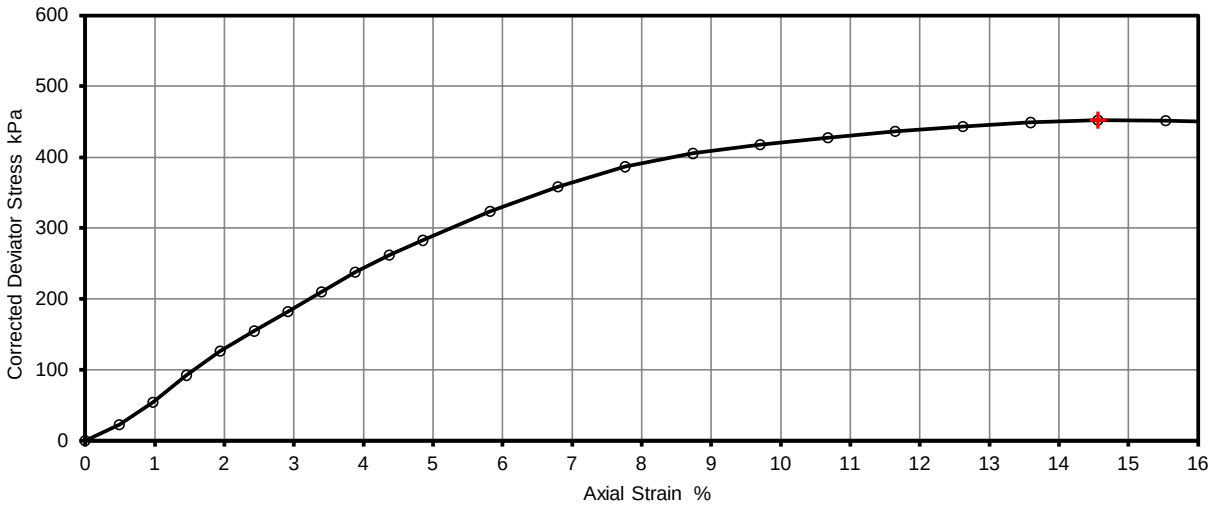
Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

**Remarks**

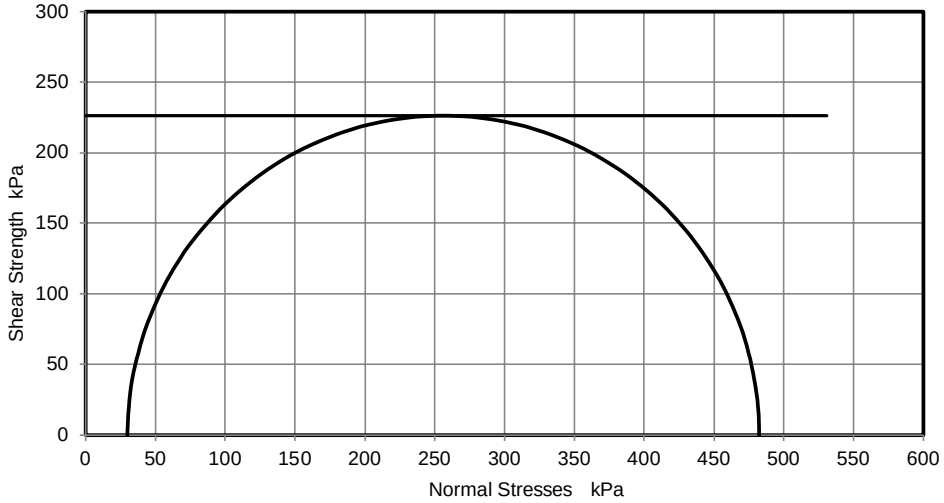
| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen** | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH311 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029658 |
| Soil Description | Brown sandy gravelly CLAY | | | Depth (m) | 2.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1029658 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 2.14 | Mg/m3 |
| Moisture Content | | 14.9 | % |
| Dry Density | | 1.86 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 30 | kPa |
| At failure | Axial Strain | 14.6 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 452 | kPa |
| | Undrained Shear Strength, cu | 226 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Brittle | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




Deviator stress corrected for area change and membrane effects

Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

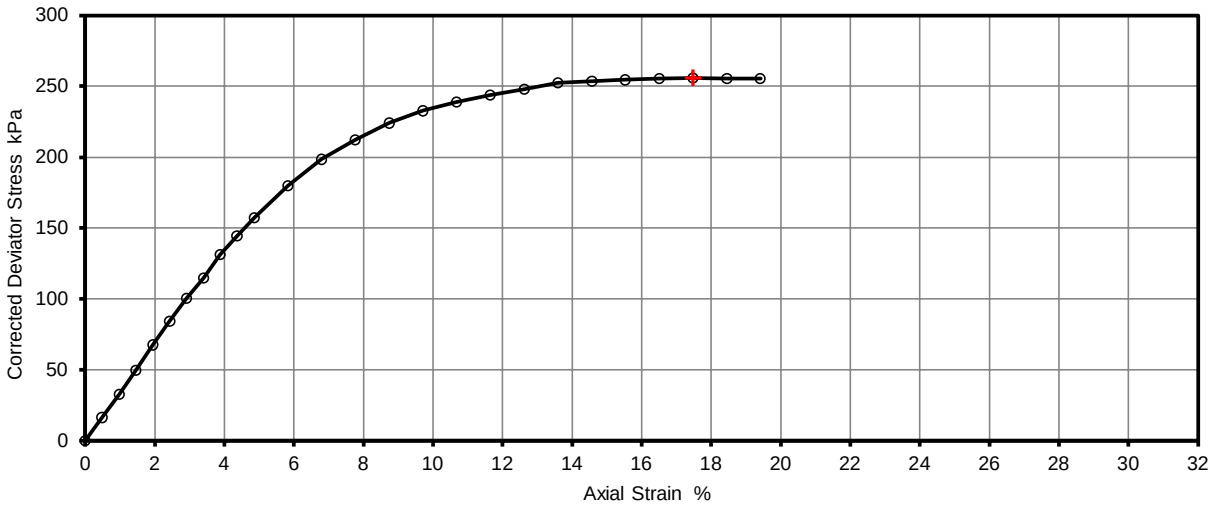
**Remarks**

# Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

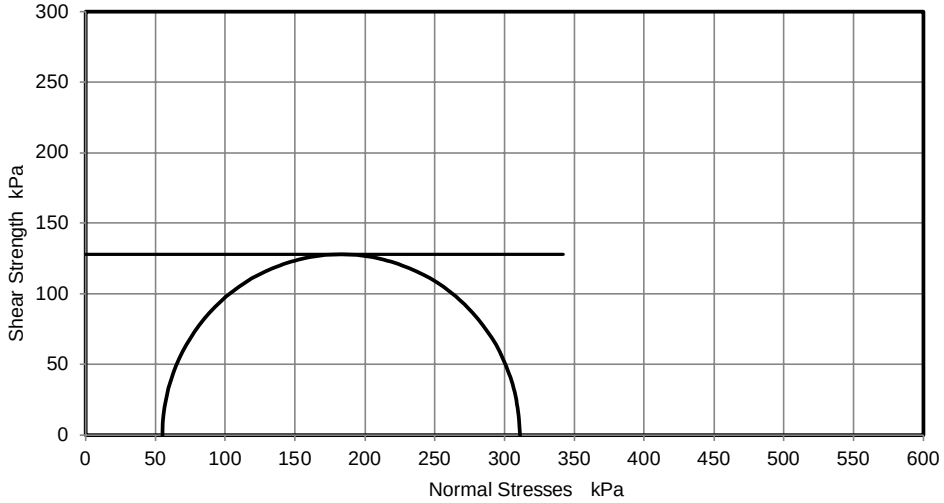
| | | | | | |
|---|---|---|---|---|---|
| | | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH311 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029663 |
| Soil Description | Brown sandy slightly gravelly CLAY | | | Depth (m) | 4.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1029663 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 2.17 | Mg/m3 |
| Moisture Content | | 12.8 | % |
| Dry Density | | 1.93 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 55 | kPa |
| At failure | Axial Strain | 17.5 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 256 | kPa |
| | Undrained Shear Strength, cu | 128 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Compound | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




Deviator stress corrected for area change and membrane effects

Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

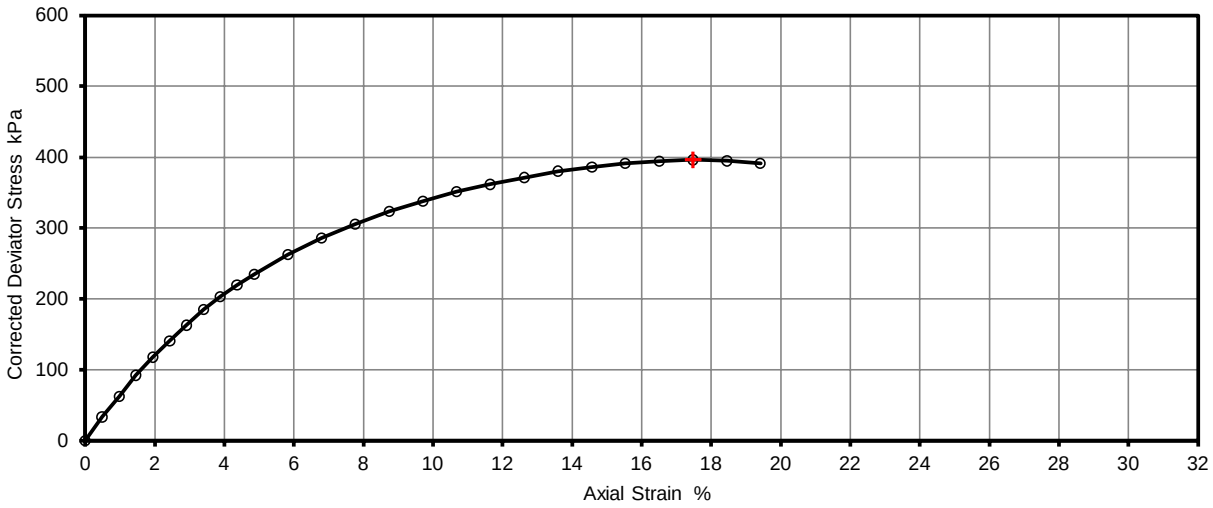
**Remarks**

# Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen

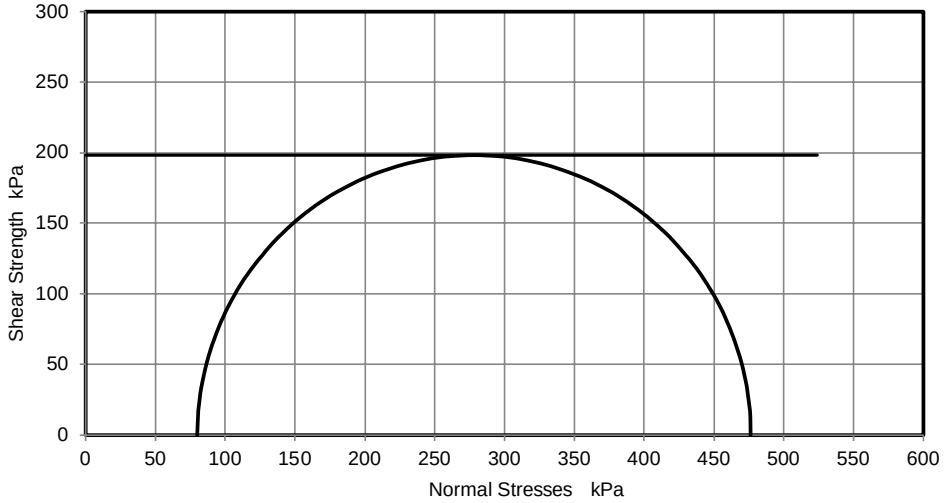
| | | | | | |
|---|---|---|---|---|---|
| | | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH311 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029668 |
| Soil Description | Brown sandy slightly gravelly CLAY | | | Depth (m) | 6.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1029668 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 2.14 | Mg/m3 |
| Moisture Content | | 17.6 | % |
| Dry Density | | 1.82 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 80 | kPa |
| At failure | Axial Strain | 17.5 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 396 | kPa |
| | Undrained Shear Strength, cu | 198 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Compound | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




Deviator stress corrected for area change and membrane effects

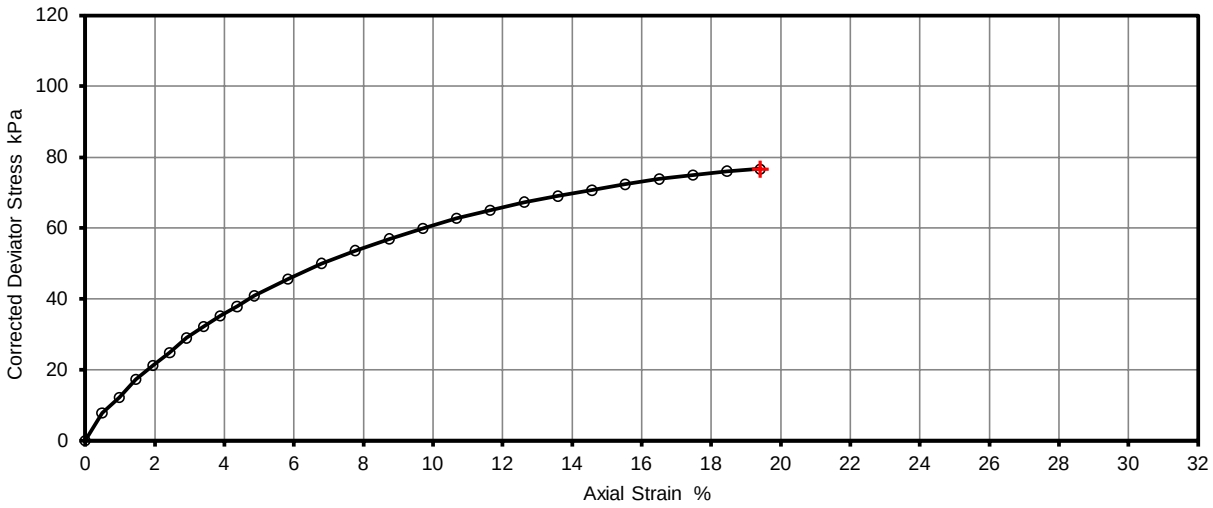
Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

**Remarks**

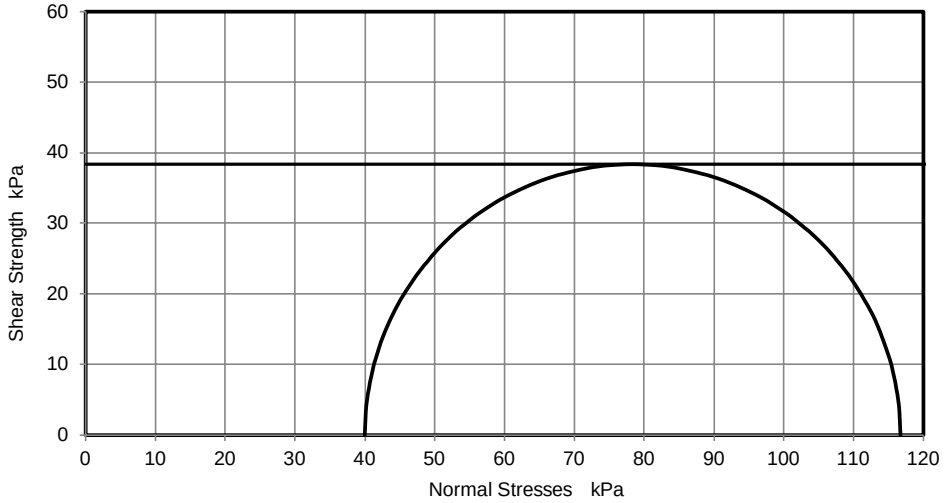
| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen** | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH312 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029694 |
| Soil Description | | | | Depth (m) | 3.00 |
| Specimen Reference | 1 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1029694 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 2.10 | Mg/m3 |
| Moisture Content | | 21.9 | % |
| Dry Density | | 1.72 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 40 | kPa |
| At failure | Axial Strain | 19.4 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 77 | kPa |
| | Undrained Shear Strength, cu | 38 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Plastic | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




Deviator stress corrected for area change and membrane effects

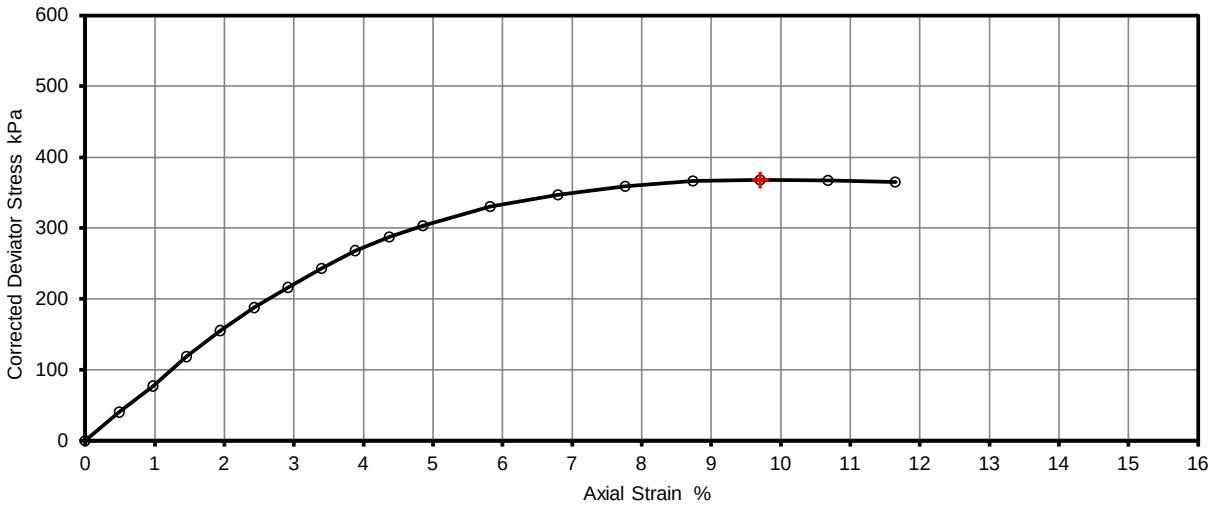
Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

**Remarks**

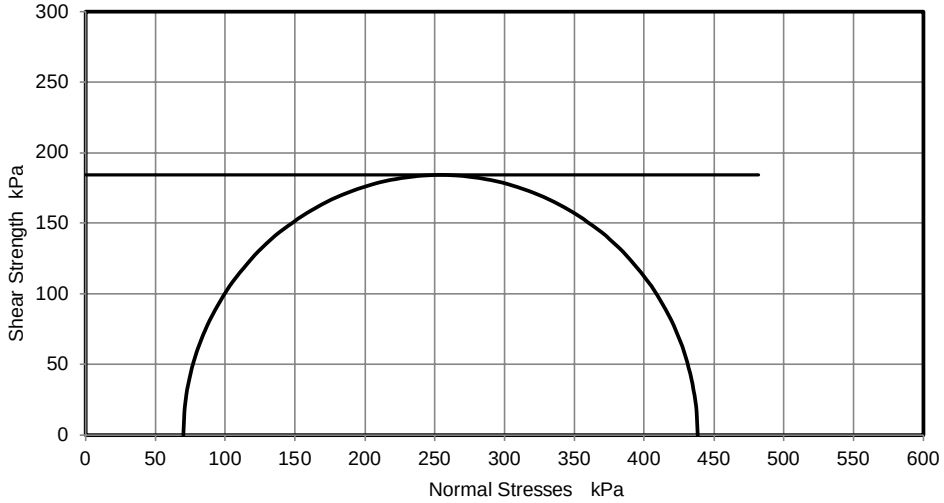
| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen** | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH312 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029699 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth (m) | 5.00 |
| Specimen Reference | 2 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1029699 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 2.15 | Mg/m3 |
| Moisture Content | | 17.0 | % |
| Dry Density | | 1.84 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 70 | kPa |
| At failure | Axial Strain | 9.7 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 368 | kPa |
| | Undrained Shear Strength, cu | 184 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Brittle | |

**Deviator Stress v Axial Strain**




**Mohr Circles**




Deviator stress corrected for area change and membrane effects

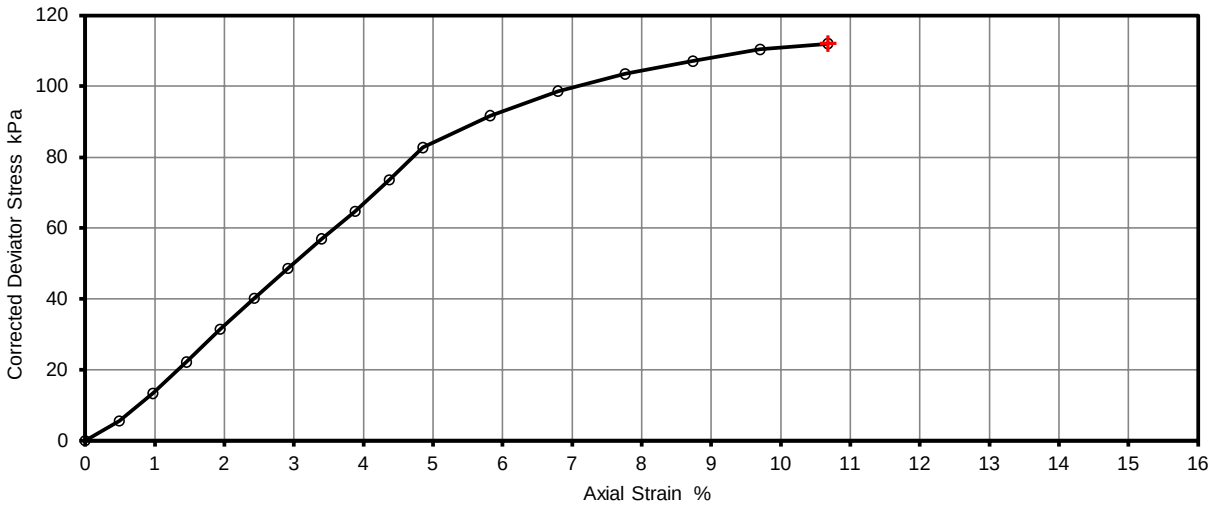
Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

**Remarks**

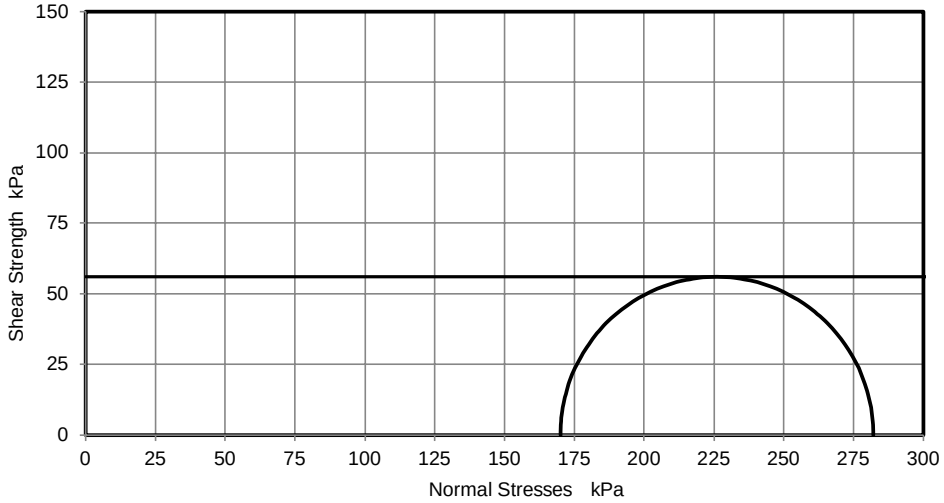
| | | | | | |
|---|---|---|---|---|---|
| bam ritchies | **Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen** | | | Job Ref | 326R |
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020740 |
| Soil Description | Brown gravelly clayey SAND | | | Depth (m) | 10.50 |
| Specimen Reference | 4 | Specimen Depth | m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1020740 |
| Test Method | BS1377 : Part 7 : 1990, clause 8, single specimen | | | | |

| | | | |
|---|---|---|---|
| Test Number | | 1 | |
| Length | | 206.0 | mm |
| Diameter | | 103.0 | mm |
| Bulk Density | | 2.08 | Mg/m3 |
| Moisture Content | | 11.9 | % |
| Dry Density | | 1.86 | Mg/m3 |
| Rate of Strain | | 2.0 | %/min |
| Cell Pressure | | 170 | kPa |
| At failure | Axial Strain | 10.7 | % |
| | Deviator Stress, ( σ1 - σ3 )f | 112 | kPa |
| | Undrained Shear Strength, cu | 56 | kPa ½( σ1 - σ3 )f |
| | Mode of Failure | Brittle | |

**Deviator Stress v Axial Strain**




**Mohr Circles**

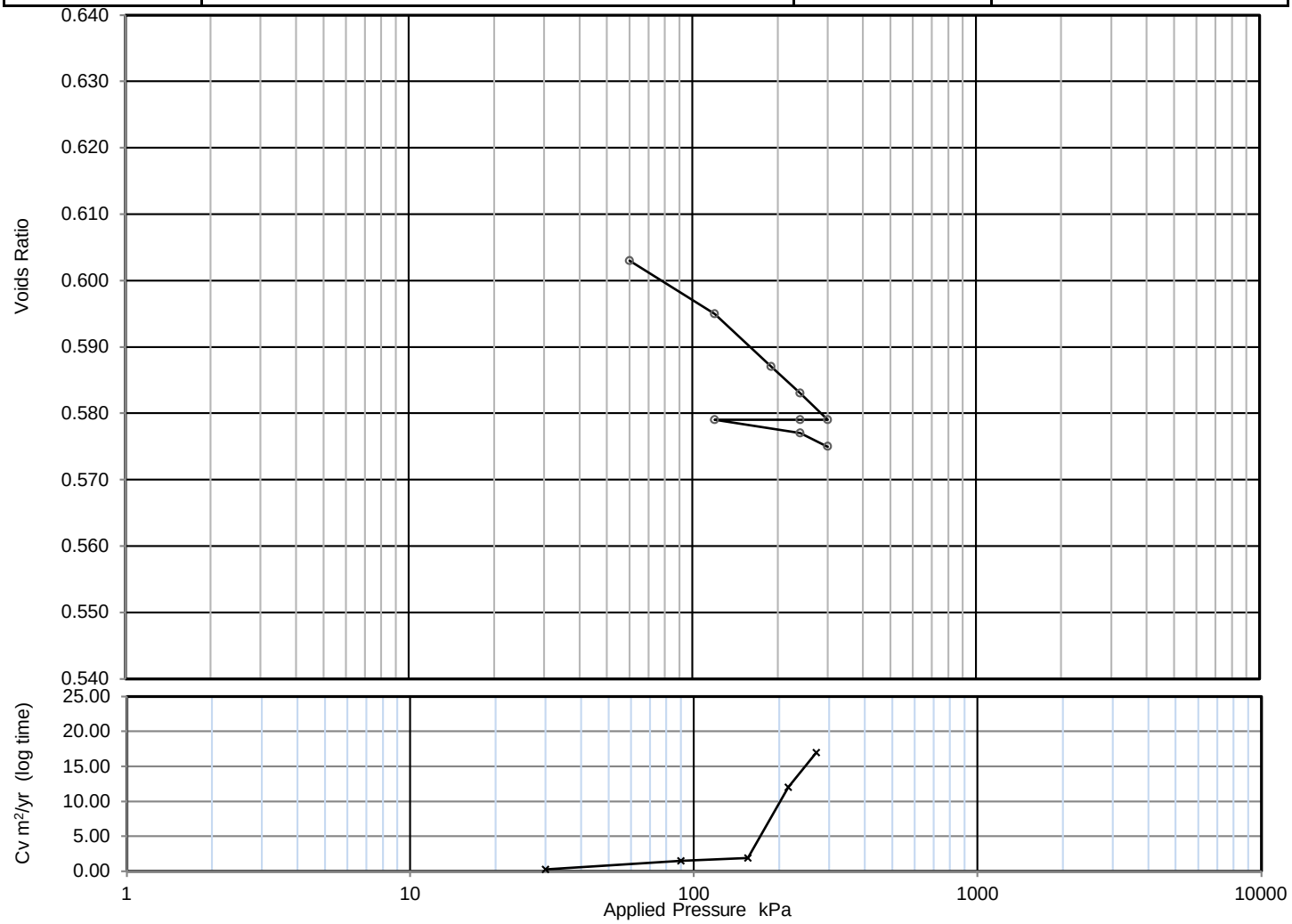



Deviator stress corrected for area change and membrane effects

Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

**Remarks**

| bam ritchies | ONE DIMENSIONAL CONSOLIDATION TEST<br>BS1377:Part 5:1990, clause 3 | | | | Job Ref | 326R |
|---|---|---|---|---|---|---|
| | | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | | Sample No. | WA1020740 |
| Soil Description | Brown gravelly clayey SAND | | | | Depth (m) | 10.5 |
| Specimen Reference | 3 | Specimen Depth | 10.6 | m | Sample Type | UT |
| Specimen Description | | | | | KeyLAB ID | WA1020740 |
| Test Method | BS1377:Part 5:1990, clause 3 | | | | Date started | |




| Applied Pressure kPa | Voids ratio | $M_v$ $m^2/MN$ | $C_v$ ( $t_{50, log}$ ) $m^2/yr$ | $C_v$ ( $t_{90, root}$ ) $m^2/yr$ | $C_{sec}$ |
|---|---|---|---|---|---|
| 0.0 | 0.634 | - | - | - | - |
| 60 | 0.603 | 0.32 | 0.26 | 0.50 | 0.0039 |
| 120 | 0.595 | 0.085 | 1.5 | 3.0 | 0.0015 |
| 190 | 0.587 | 0.069 | 1.9 | 4.2 | 0.0012 |
| 240 | 0.583 | 0.056 | 12 | 20 | 0.00037 |
| 300 | 0.579 | 0.041 | 17 | 42 | 0.00058 |
| 240 | 0.579 | - | - | - | 0.000014 |
| 120 | 0.579 | 0.0032 | | | - |
| 240 | 0.577 | 0.0099 | 3.4 | 7.0 | 0.00038 |
| 300 | 0.575 | 0.032 | 10 | 24 | 0.00020 |
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Preparation

Index tests Liquid limit % Plastic limit %

Particle density assumed 2.67 $Mg/m^3$

| Specimen details | Initial | Final | |
|---|---|---|---|
| Diameter | 74.60 | - | mm |
| Height | 19.07 | 18.39 | mm |
| Moisture Content | 13.2 | 16.5 | % |
| Bulk density | 1.85 | 1.97 | $Mg/m^3$ |
| Dry density | 1.63 | 1.69 | $Mg/m^3$ |
| Voids Ratio | 0.634 | 0.576 | |
| Saturation | 56 | 77 | % |
| Average temperature for test | | | °C |
| Swelling Pressure | | | kPa |
| Settlement on saturation | | | % |

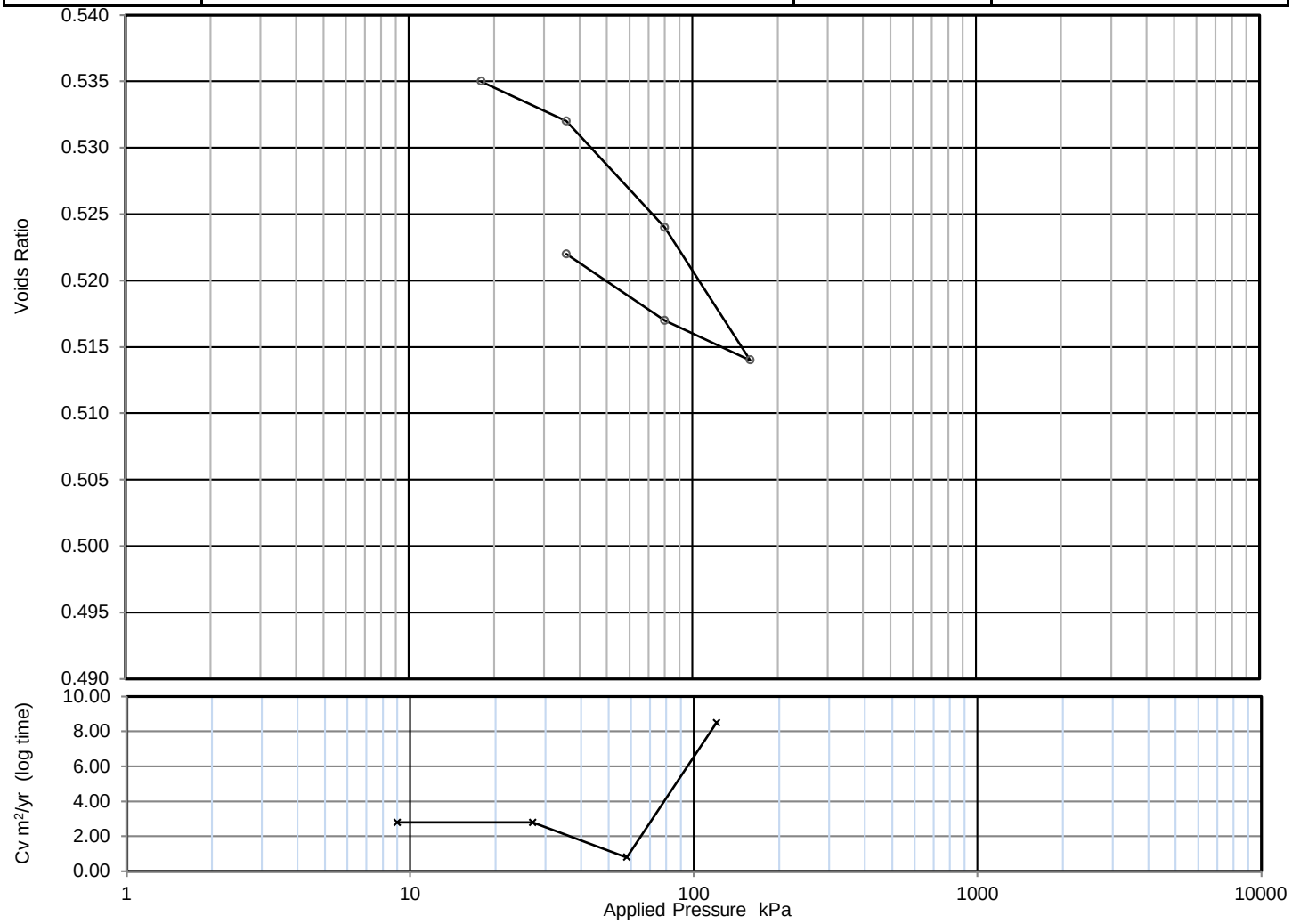
Remarks

Final values should be used with caution

$C_v$ plotted at mid point of load increments

$C_v$ corrected to 20°C

| bam ritchies | ONE DIMENSIONAL CONSOLIDATION TEST<br>BS1377:Part 5:1990, clause 3 | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH304A |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1031350 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth (m) | 7 |
| Specimen Reference | 1 | Specimen Depth | 7.2 m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1031350 |
| Test Method | BS1377:Part 5:1990, clause 3 | | | Date started | |




| Applied Pressure kPa | Voids ratio | $M_v$ $m^2/MN$ | $C_v$ ( $t_{50, log}$ ) $m^2/yr$ | $C_v$ ( $t_{90, root}$ ) $m^2/yr$ | $C_{sec}$ |
|---|---|---|---|---|---|
| 0.0 | 0.537 | - | - | - | - |
| 18 | 0.535 | 0.062 | 2.8 | 7.6 | 0.00037 |
| 36 | 0.532 | 0.12 | 2.8 | 6.0 | 0.00037 |
| 80 | 0.524 | 0.14 | 0.80 | 2.0 | 0.0012 |
| 160 | 0.514 | 0.083 | 8.5 | 20 | 0.0013 |
| 80 | 0.517 | 0.021 | | | |
| 36 | 0.522 | 0.082 | | | |
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Preparation

Index tests Liquid limit % Plastic limit %

Particle density assumed 2.67 $Mg/m^3$

| Specimen details | Initial | Final | |
|---|---|---|---|
| Diameter | 75.16 | - | mm |
| Height | 19.77 | 19.58 | mm |
| Moisture Content | 18.8 | 19.2 | % |
| Bulk density | 2.06 | 2.09 | $Mg/m^3$ |
| Dry density | 1.74 | 1.75 | $Mg/m^3$ |
| Voids Ratio | 0.537 | 0.522 | |
| Saturation | 93 | 98 | % |
| Average temperature for test | | | °C |
| Swelling Pressure | | | kPa |
| Settlement on saturation | | | % |

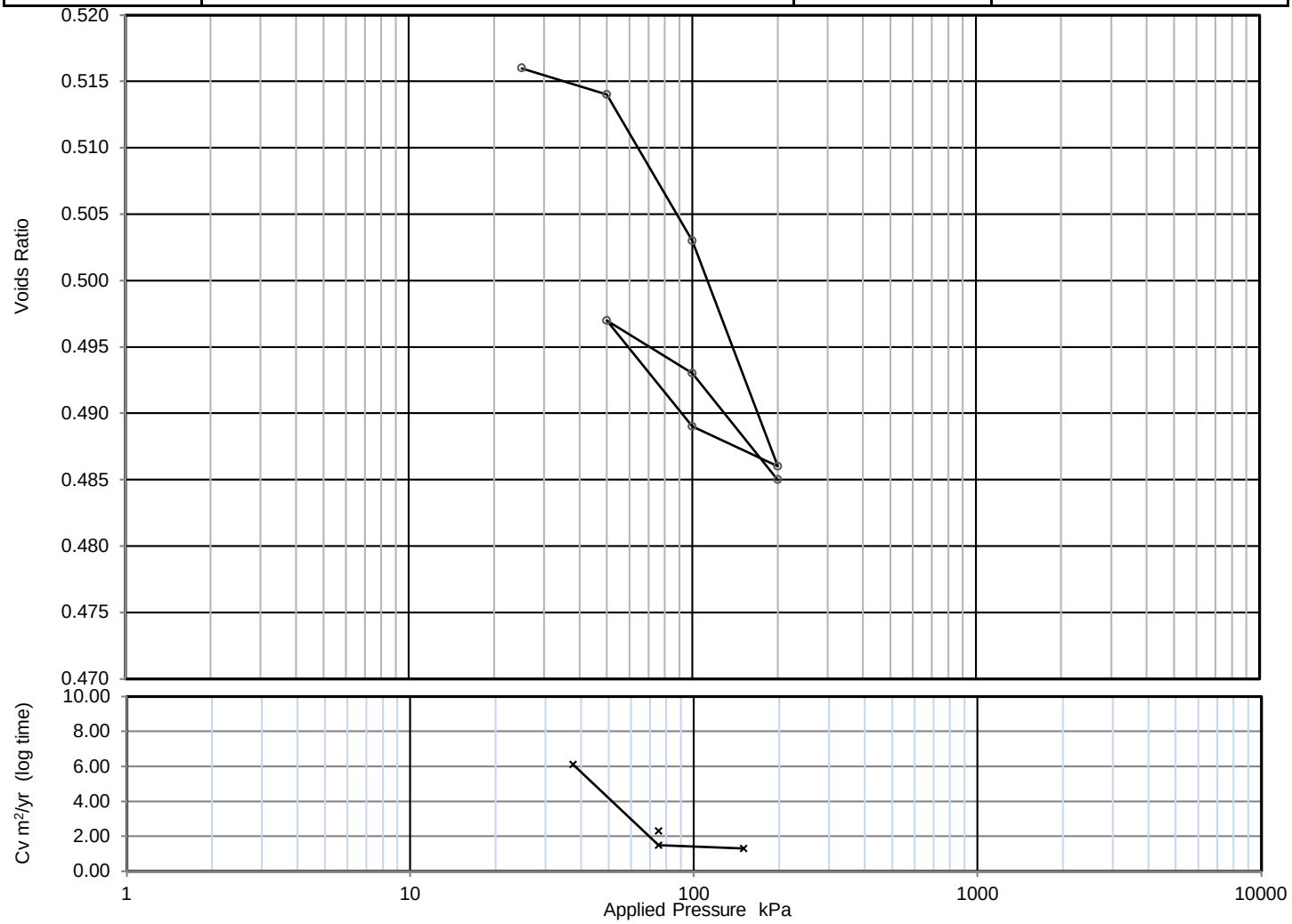
Remarks

Final values should be used with caution

$C_v$ plotted at mid point of load increments

$C_v$ corrected to 20°C

| bam ritchies | ONE DIMENSIONAL CONSOLIDATION TEST<br>BS1377:Part 5:1990, clause 3 | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH311 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029668 |
| Soil Description | Brown sandy slightly gravelly CLAY | | | Depth (m) | 6 |
| Specimen Reference | 1 | Specimen Depth | 6.2 m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1029668 |
| Test Method | BS1377:Part 5:1990, clause 3 | | | Date started | |




| Applied Pressure kPa | Voids ratio | Mv m2/MN | Cv ( t50, log ) m2/yr | Cv ( t90, root ) m2/yr | Csec |
|---|---|---|---|---|---|
| 0.0 | 0.516 | - | - | - | - |
| 25 | 0.516 | - | - | - | - |
| 50 | 0.514 | 0.066 | 6.1 | 14 | 0.00052 |
| 100 | 0.503 | 0.14 | 1.5 | 3.4 | 0.0014 |
| 200 | 0.486 | 0.12 | 1.3 | 2 | 0.0023 |
| 100 | 0.489 | 0.023 | | | |
| 50 | 0.497 | 0.099 | | | |
| 100 | 0.493 | 0.048 | 2.3 | 4 | 0.00018 |
| 200 | 0.485 | 0.052 | 1.7 | 3.2 | 0.0014 |
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Preparation

Index tests Liquid limit % Plastic limit %

Particle density assumed 2.67 Mg/m3

| Specimen details | Initial | Final | |
|---|---|---|---|
| Diameter | 75.16 | - | mm |
| Height | 20.60 | 20.19 | mm |
| Moisture Content | 18.0 | 17.4 | % |
| Bulk density | 2.08 | 2.11 | Mg/m3 |
| Dry density | 1.76 | 1.80 | Mg/m3 |
| Voids Ratio | 0.516 | 0.485 | |
| Saturation | 93 | 96 | % |
| Average temperature for test | | | oC |
| Swelling Pressure | | | kPa |
| Settlement on saturation | | | % |

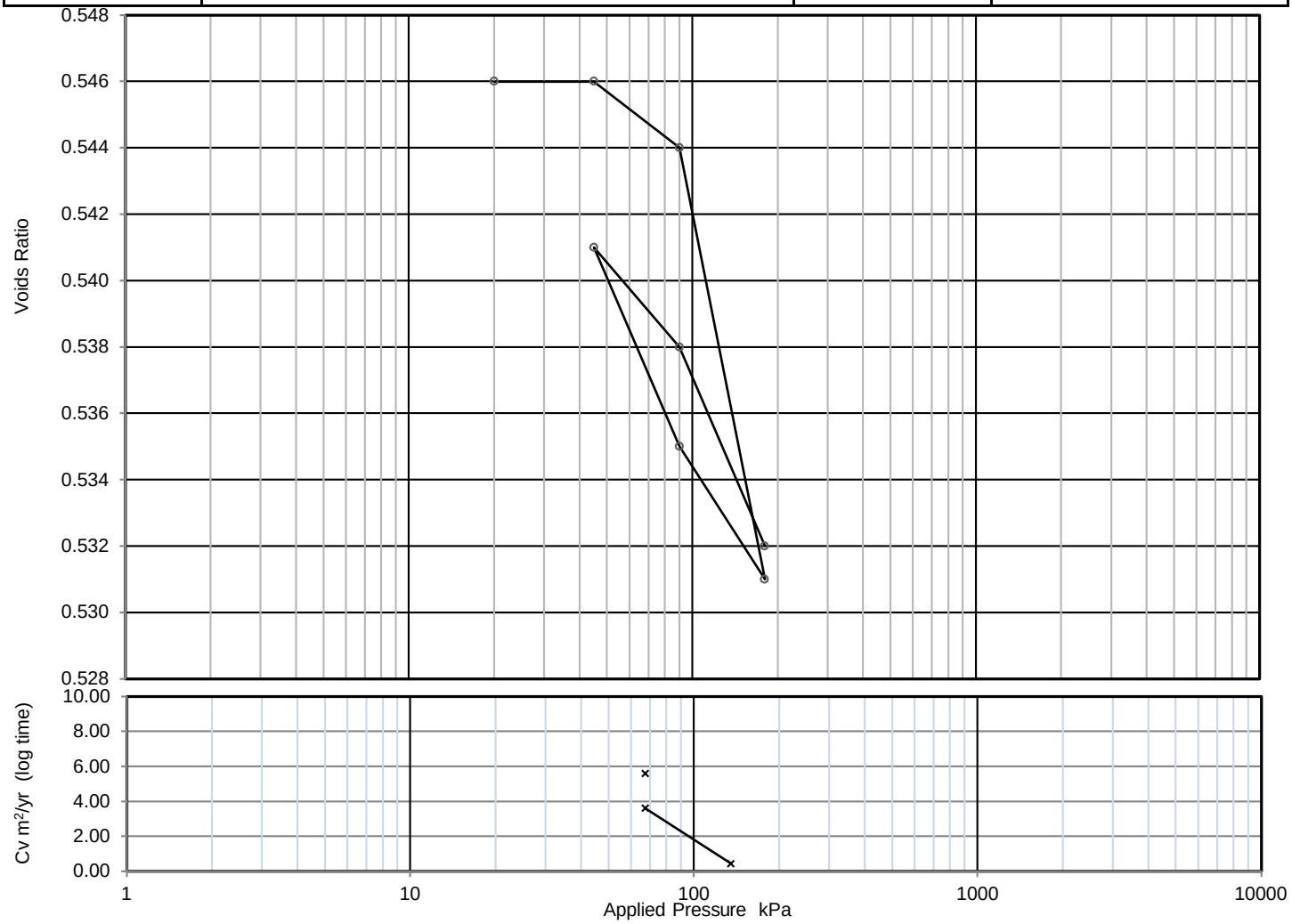
Remarks

Final values should be used with caution

Cv plotted at mid point of load increments

Cv corrected to 20oC

| bam ritchies | ONE DIMENSIONAL CONSOLIDATION TEST<br>BS1377:Part 5:1990, clause 3 | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH312 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029699 |
| Soil Description | Brown gravelly sandy CLAY | | | Depth (m) | 5 |
| Specimen Reference | 1 | Specimen Depth | 5.2 m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1029699 |
| Test Method | BS1377:Part 5:1990, clause 3 | | | Date started | |




| Applied Pressure kPa | Voids ratio | Mv m2/MN | Cv ( t50, log ) m2/yr | Cv ( t90, root ) m2/yr | Csec |
|---|---|---|---|---|---|
| 0.0 | 0.546 | - | - | - | - |
| 20 | 0.546 | - | - | - | - |
| 45 | 0.546 | 0.0039 | - | - | 0.00036 |
| 90 | 0.544 | 0.033 | 3.6 | 10 | 0.00036 |
| 180 | 0.531 | 0.091 | 0.44 | 0.96 | 0.0036 |
| 90 | 0.535 | 0.026 | | | |
| 45 | 0.541 | 0.095 | | | |
| 90 | 0.538 | 0.047 | 5.6 | 12 | 0.00036 |
| 180 | 0.532 | 0.046 | 2 | 4.4 | 0.0011 |
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Preparation

Index tests Liquid limit % Plastic limit %

Particle density assumed 2.67 Mg/m3

| Specimen details | Initial | Final | |
|---|---|---|---|
| Diameter | 75.12 | - | mm |
| Height | 20.31 | 20.13 | mm |
| Moisture Content | 18.8 | 19.3 | % |
| Bulk density | 2.05 | 2.08 | Mg/m3 |
| Dry density | 1.73 | 1.74 | Mg/m3 |
| Voids Ratio | 0.546 | 0.532 | |
| Saturation | 92 | 97 | % |
| Average temperature for test | | | oC |
| Swelling Pressure | | | kPa |
| Settlement on saturation | | | % |

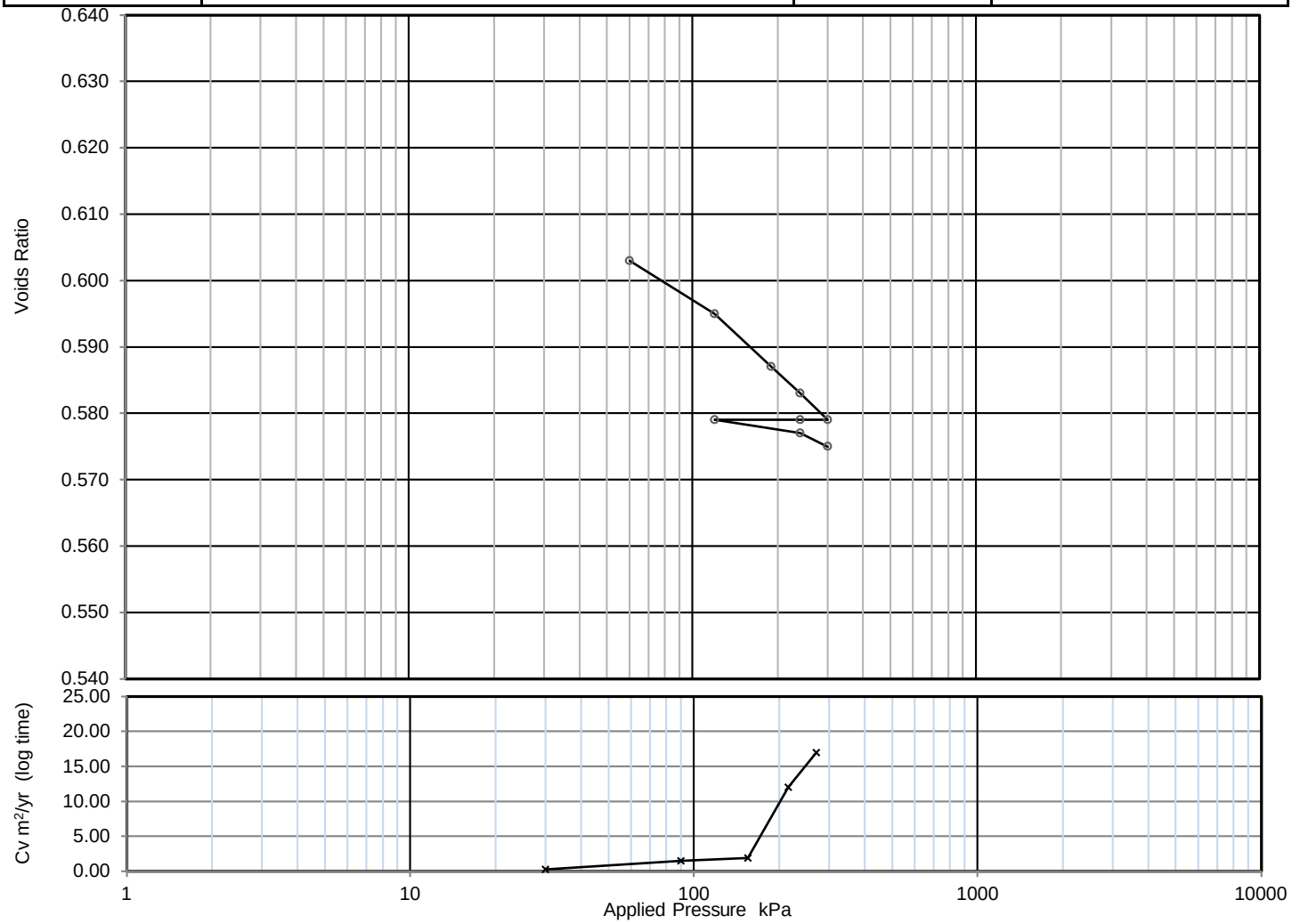
Remarks

Final values should be used with caution

Cv plotted at mid point of load increments

Cv corrected to 20oC

| bam ritchies | ONE DIMENSIONAL CONSOLIDATION TEST<br>BS1377:Part 5:1990, clause 3 | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH313 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1020740 |
| Soil Description | Brown gravelly clayey SAND | | | Depth (m) | 10.5 |
| Specimen Reference | 3 | Specimen Depth | 10.6 m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1020740 |
| Test Method | BS1377:Part 5:1990, clause 3 | | | Date started | |




| Applied Pressure kPa | Voids ratio | Mv m2/MN | Cv ( t50, log ) m2/yr | Cv ( t90, root ) m2/yr | Csec |
|---|---|---|---|---|---|
| 0.0 | 0.634 | - | - | - | - |
| 60 | 0.603 | 0.32 | 0.26 | 0.5 | 0.0039 |
| 120 | 0.595 | 0.085 | 1.5 | 3 | 0.0015 |
| 190 | 0.587 | 0.069 | 1.9 | 4.2 | 0.0012 |
| 240 | 0.583 | 0.056 | 12 | 20 | 0.00037 |
| 300 | 0.579 | 0.041 | 17 | 42 | 0.00058 |
| 240 | 0.579 | - | | | |
| 120 | 0.579 | 0.0032 | | | |
| 240 | 0.577 | 0.0099 | 3.4 | 7 | 0.00038 |
| 300 | 0.575 | 0.032 | 10 | 24 | 0.0002 |
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Preparation

Index tests Liquid limit % Plastic limit %

Particle density assumed 2.67 Mg/m3

| Specimen details | Initial | Final | |
|---|---|---|---|
| Diameter | 74.60 | - | mm |
| Height | 19.07 | 18.39 | mm |
| Moisture Content | 13.2 | 16.5 | % |
| Bulk density | 1.85 | 1.97 | Mg/m3 |
| Dry density | 1.63 | 1.69 | Mg/m3 |
| Voids Ratio | 0.634 | 0.576 | |
| Saturation | 56 | 77 | % |
| Average temperature for test | | | oC |
| Swelling Pressure | | | kPa |
| Settlement on saturation | | | % |

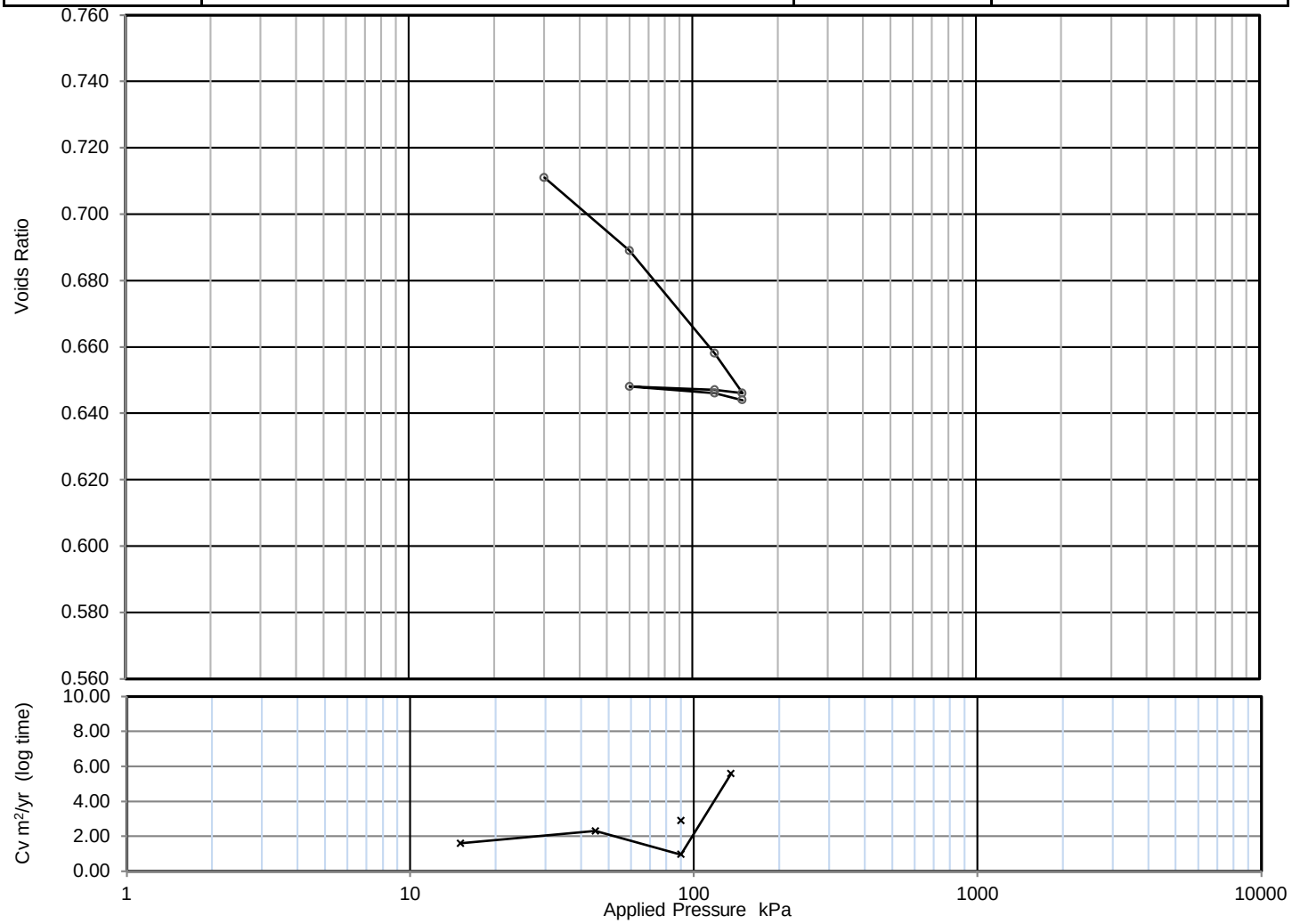
Remarks

Final values should be used with caution

Cv plotted at mid point of load increments

Cv corrected to 20oC

| bam ritchies | ONE DIMENSIONAL CONSOLIDATION TEST<br>BS1377:Part 5:1990, clause 3 | | | Job Ref | 326R |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | BH314 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | Sample No. | WA1029622 |
| Soil Description | Brown clayey gravelly SAND | | | Depth (m) | 9 |
| Specimen Reference | 1 | Specimen Depth | 9.2 m | Sample Type | UT |
| Specimen Description | | | | KeyLAB ID | WA1029622 |
| Test Method | BS1377:Part 5:1990, clause 3 | | | Date started | |




| Applied Pressure kPa | Voids ratio | Mv m2/MN | Cv ( t50, log ) m2/yr | Cv ( t90, root ) m2/yr | Csec |
|---|---|---|---|---|---|
| 0.0 | 0.758 | - | - | - | - |
| 30 | 0.711 | 0.88 | 1.6 | 3.6 | 0.0018 |
| 60 | 0.689 | 0.44 | 2.3 | 3.5 | 0.0013 |
| 120 | 0.658 | 0.31 | 0.96 | 1.6 | 0.0016 |
| 150 | 0.646 | 0.23 | 5.6 | 12 | 0.00019 |
| 120 | 0.647 | 0.0091 | | | |
| 60 | 0.648 | 0.013 | | | |
| 120 | 0.646 | 0.019 | 2.9 | 6 | 0.00018 |
| 150 | 0.644 | 0.044 | 2 | 4.2 | 0.00036 |
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Preparation

Index tests Liquid limit % Plastic limit %

Particle density assumed 2.67 Mg/m3

| Specimen details | Initial | Final | |
|---|---|---|---|
| Diameter | 75.13 | - | mm |
| Height | 19.60 | 18.33 | mm |
| Moisture Content | 30.5 | 28.3 | % |
| Bulk density | 1.98 | 2.08 | Mg/m3 |
| Dry density | 1.52 | 1.62 | Mg/m3 |
| Voids Ratio | 0.758 | 0.644 | |
| Saturation | 107 | 117 | % |
| Average temperature for test | | | oC |
| Swelling Pressure | | | kPa |
| Settlement on saturation | | | % |

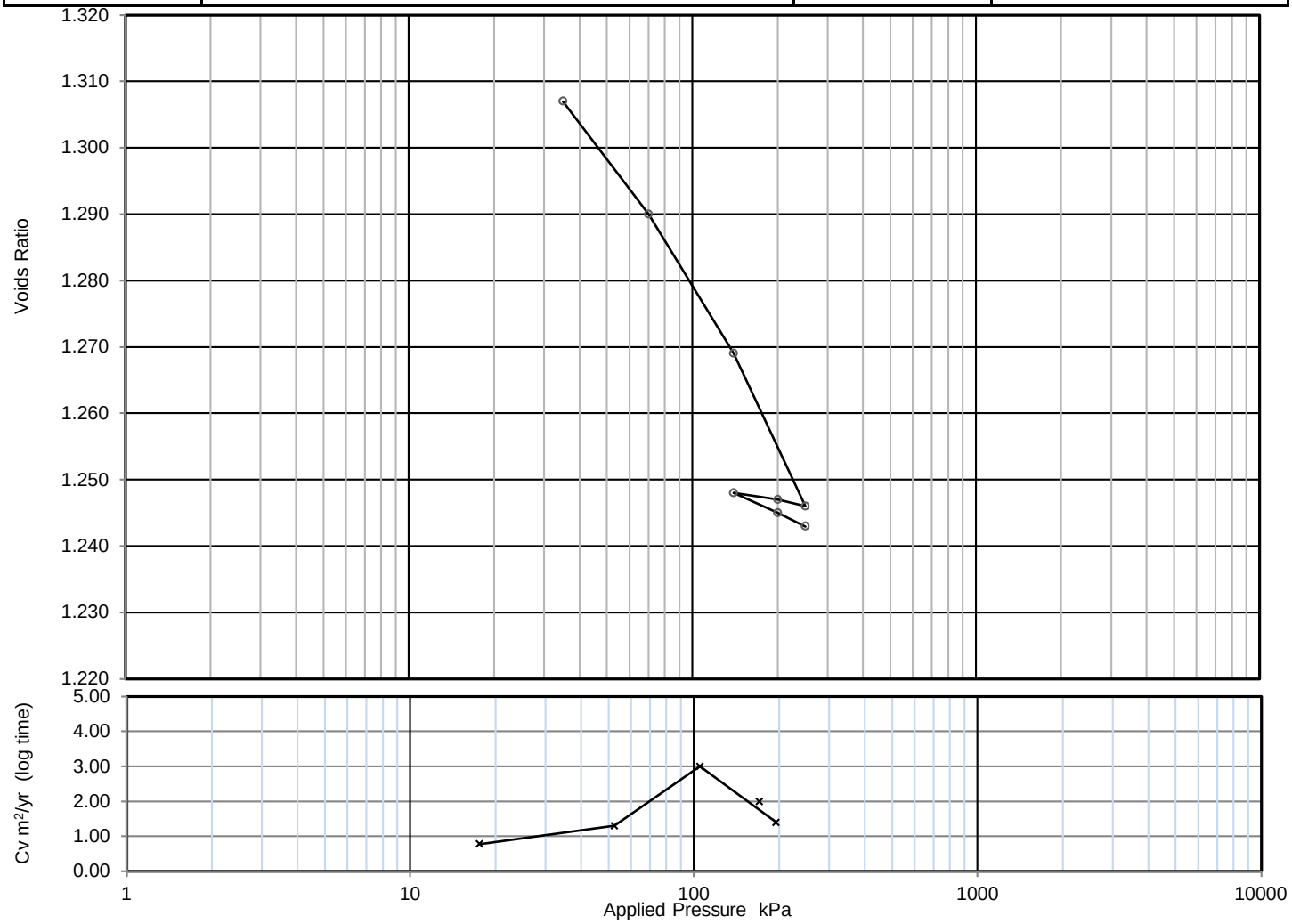
Remarks

Final values should be used with caution

Cv plotted at mid point of load increments

Cv corrected to 20oC

| bam ritchies | ONE DIMENSIONAL CONSOLIDATION TEST<br>BS1377:Part 5:1990, clause 3 | | | | Job Ref | 326R |
|---|---|---|---|---|---|---|
| | | | | | Borehole/Pit No. | BH324 |
| Site Name | Victoria North HIF Infrastructure & Enabling Works | | | | Sample No. | WA1030395 |
| Soil Description | Grey & brown clayey organic SAND | | | | Depth (m) | 10.5 |
| Specimen Reference | 4 | Specimen Depth | 10.7 | m | Sample Type | UT |
| Specimen Description | | | | | KeyLAB ID | WA1030395 |
| Test Method | BS1377:Part 5:1990, clause 3 | | | | Date started | |




| Applied Pressure kPa | Voids ratio | Mv m2/MN | Cv ( t50, log ) m2/yr | Cv ( t90, root ) m2/yr | Csec |
|---|---|---|---|---|---|
| 0.0 | 1.318 | - | - | - | - |
| 35 | 1.307 | 0.15 | 0.78 | 1.4 | 0.0015 |
| 70 | 1.290 | 0.2 | 1.3 | 2.2 | 0.0022 |
| 140 | 1.269 | 0.14 | 3 | 5.9 | 0.0018 |
| 250 | 1.246 | 0.091 | 1.4 | 3 | 0.0032 |
| 200 | 1.247 | 0.012 | | | |
| 140 | 1.248 | 0.0035 | | | |
| 200 | 1.245 | 0.018 | 2 | 4.2 | 0.00037 |
| 250 | 1.243 | 0.024 | 2.3 | 5 | 0.00037 |
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Preparation

Index tests Liquid limit % Plastic limit %

Particle density assumed 2.67 Mg/m3

| Specimen details | Initial | Final | |
|---|---|---|---|
| Diameter | 75.35 | - | mm |
| Height | 19.69 | 19.04 | mm |
| Moisture Content | 29.2 | 34.3 | % |
| Bulk density | 1.49 | 1.60 | Mg/m3 |
| Dry density | 1.15 | 1.19 | Mg/m3 |
| Voids Ratio | 1.318 | 1.243 | |
| Saturation | 59 | 74 | % |
| Average temperature for test | | | oC |
| Swelling Pressure | | | kPa |
| Settlement on saturation | | | % |

Remarks

Final values should be used with caution

Cv plotted at mid point of load increments

Cv corrected to 20oC

bam ritchies

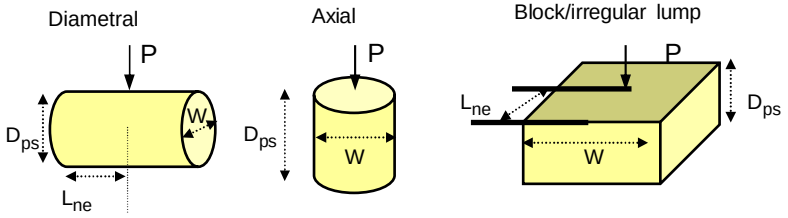
# Point Load Strength Index Tests
# Summary of Results

Project No.: 326R

Project Name: Victoria North HIF Infrastructure & Enabling Works

| Borehole No. | Sample | | | Specimen | | Test Type see ISRM | | Failure Valid (Y/N) | Dimensions | | | | Force P | Equivalent diameter, De | Point Load Strength Index | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Depth m | Ref. | Type | Ref. | Depth m | Type (D, A, I, B) | Direction (L, P or U) | | Lne mm | W mm | Dps mm | Dps' mm | kN | mm | Is MPa | Is(50) MPa | |
| BH309 | 5.00 | 326R3095 | C | 3 | 5.20 | I | L | YES | 35.0 | 70.0 | 42.0 | 41.0 | 0.1 | 60.4 | 0.000 | 0.000 | |
| BH309 | 5.00 | 326R3095 | C | 4 | 5.20 | I | L | YES | 4.0 | 79.0 | 44.0 | 43.0 | 0.1 | 65.8 | 0.000 | 0.000 | |
| BH309 | 5.50 | 326R30955 | C | 4 | 5.90 | I | L | YES | 30.0 | 60.0 | 33.0 | 32.0 | 0.1 | 49.4 | 0.000 | 0.000 | |
| BH309 | 5.50 | 326R30955 | C | 5 | 5.90 | I | L | YES | 25.0 | 51.0 | 31.0 | 30.0 | 0.1 | 44.1 | 0.000 | 0.000 | |
| BH309 | 5.50 | 326R30955 | C | 6 | 6.00 | I | L | YES | 33.0 | 66.0 | 36.0 | 35.0 | 0.1 | 54.2 | 0.000 | 0.000 | |
| BH309 | 5.50 | 326R30955 | C | 7 | 6.00 | I | L | YES | 40.0 | 80.0 | 39.0 | 38.0 | 0.1 | 62.2 | 0.000 | 0.000 | |
| BH309 | 7.00 | 326R3097 | C | 3 | 7.00 | D | L | YES | 40.0 | 100.0 | 100.0 | 99.0 | 0.1 | 99.5 | 0.000 | 0.000 | |
| BH309 | 7.00 | 326R3097 | C | 4 | 7.00 | A | P | YES | | 100.0 | 59.0 | 58.0 | 0.2 | 85.9 | 0.000 | 0.000 | |
| BH309 | 7.75 | 326R30977 | C | 3 | 8.00 | D | L | YES | 51.0 | 100.0 | 100.0 | 99.0 | 0.2 | 99.5 | 0.000 | 0.000 | |
| BH309 | 7.75 | 326R30977 | C | 4 | 8.00 | A | P | YES | | 100.0 | 50.0 | 49.0 | 0.1 | 79.0 | 0.000 | 0.000 | |
| BH309 | 8.50 | 326R30985 | C | 4 | 8.80 | D | L | YES | 47.0 | 100.0 | 50.0 | 49.0 | 0.2 | 70.0 | 0.000 | 0.000 | |
| BH309 | 8.50 | 326R30985 | C | 5 | 8.80 | A | P | YES | | 100.0 | 41.0 | 40.0 | 0.1 | 71.4 | 0.000 | 0.000 | |
| BH309 | 8.50 | 326R30985 | C | 6 | 9.50 | D | L | YES | 55.0 | 100.0 | 100.0 | 99.0 | 0.2 | 99.5 | 0.000 | 0.000 | |
| BH309 | 8.50 | 326R30985 | C | 7 | 9.50 | A | P | YES | | 100.0 | 41.0 | 40.0 | 0.1 | 71.4 | 0.000 | 0.000 | |
| BH309 | 10.00 | 326R30910 | C | 2 | 10.20 | D | L | YES | 60.0 | 100.0 | 100.0 | 99.0 | 0.1 | 99.5 | 0.000 | 0.000 | |
| BH309 | 10.00 | 326R30910 | C | 3 | 10.20 | A | P | YES | | 100.0 | 54.0 | 53.0 | 0.1 | 82.1 | 0.000 | 0.000 | |
| BH310 | 7.75 | 326R31077 | C | 3 | 7.75 | D | L | YES | 45.0 | 100.0 | 100.0 | 99.0 | 0.1 | 99.5 | 0.000 | 0.000 | |
| BH310 | 7.75 | 326R31077 | C | 4 | 7.75 | A | P | YES | | 100.0 | 43.0 | 42.0 | 0.1 | 73.1 | 0.000 | 0.000 | |
| BH310 | 9.25 | 326R31092 | C | 4 | 9.25 | I | L | YES | 30.0 | 59.0 | 40.0 | 39.0 | 0.1 | 54.1 | 0.000 | 0.000 | |

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction
L - parallel to planes of weakness
P - perpendicular to planes of weakness
U - unknown or random
Dimensions
Dps - Distance between platens ( platen separation )
Dps' - at failure ( see ISRM note 6)
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P




Test performed in accordance with ISRM Suggested Methods : 2007, unless noted otherwise

Detailed legend for test and dimensions, based on ISRM, is shown above.

Size correction factor, F = (De/50)0.45 for all tests.

bam ritchies

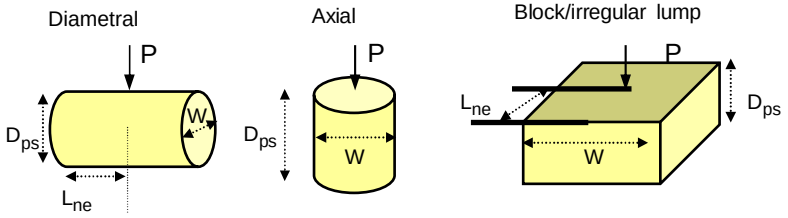
# Point Load Strength Index Tests
# Summary of Results

Project No.: 326R

Project Name: Victoria North HIF Infrastructure & Enabling Works

| Borehole No. | Sample | | | Specimen | | Test Type see ISRM | | Failure Valid (Y/N) | Dimensions | | | | Force P | Equivalent diameter, De | Point Load Strength Index | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Depth m | Ref. | Type | Ref. | Depth m | Type (D, A, I, B) | Direction (L, P or U) | | Lne mm | W mm | Dps mm | Dps' mm | kN | mm | Is MPa | Is(50) MPa | |
| BH310 | 9.25 | 326R31092 | C | 5 | 9.25 | I | L | YES | 40.0 | 80.0 | 39.0 | 38.0 | 0.1 | 62.2 | 0.000 | 0.000 | |
| BH310 | 9.25 | 326R31092 | C | 6 | 9.60 | D | L | YES | 38.0 | 100.0 | 100.0 | 99.0 | 0.0 | 99.5 | 0.000 | 0.000 | |
| BH310 | 9.25 | 326R31092 | C | 7 | 9.60 | A | P | YES | | 100.0 | 38.0 | 37.0 | 0.0 | 68.6 | 0.000 | 0.000 | |
| BH310 | 10.00 | 326R31010 | C | 3 | 10.50 | D | L | YES | 55.0 | 100.0 | 100.0 | 99.0 | 0.0 | 99.5 | 0.000 | 0.000 | |
| BH310 | 10.00 | 326R31010 | C | 4 | 10.50 | A | P | YES | | 100.0 | 40.0 | 39.0 | 0.1 | 70.5 | 0.000 | 0.000 | |
| BH310 | 10.75 | 326R310107 | C | 3 | 11.00 | D | L | YES | 44.0 | 100.0 | 100.0 | 99.0 | 0.1 | 99.5 | 0.000 | 0.000 | |
| BH310 | 10.75 | 326R310107 | C | 4 | 11.00 | A | P | YES | | 100.0 | 48.0 | 47.0 | 0.1 | 77.4 | 0.000 | 0.000 | |
| BH310 | 13.00 | 326R31013 | C | 4 | 13.20 | I | L | YES | 30.0 | 60.0 | 42.0 | 41.0 | 0.0 | 56.0 | 0.000 | 0.000 | |
| BH310 | 13.00 | 326R31013 | C | 5 | 13.20 | I | L | YES | 35.0 | 70.0 | 40.0 | 39.0 | 0.0 | 59.0 | 0.000 | 0.000 | |
| BH310 | 13.00 | 326R31013 | C | 6 | 13.60 | D | L | YES | 51.0 | 100.0 | 100.0 | 99.0 | 0.1 | 99.5 | 0.000 | 0.000 | |
| BH310 | 13.00 | 326R31013 | C | 7 | 13.60 | A | P | YES | | 100.0 | 44.0 | 43.0 | 0.1 | 74.0 | 0.000 | 0.000 | |
| BH310 | 14.50 | 326R31014 | C | 3 | 15.50 | D | L | YES | 47.0 | 100.0 | 100.0 | 99.0 | 0.1 | 99.5 | 0.000 | 0.000 | |
| BH310 | 14.50 | 326R31014 | C | 4 | 15.50 | A | P | YES | | 100.0 | 47.0 | 46.0 | 0.1 | 76.5 | 0.000 | 0.000 | |
| | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | |

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction
L - parallel to planes of weakness
P - perpendicular to planes of weakness
U - unknown or random
Dimensions
Dps - Distance between platens ( platen separation )
Dps' - at failure ( see ISRM note 6)
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P




Test performed in accordance with ISRM Suggested Methods : 2007, unless noted otherwise

Detailed legend for test and dimensions, based on ISRM, is shown above.

Size correction factor, F = (De/50)0.45 for all tests.

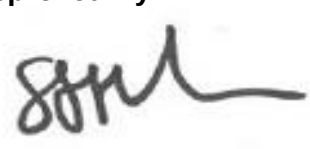
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

# Final Report

| | |
|---|---|
| **Report No.:** | 22-12186-1 |
| **Initial Date of Issue:** | 07-Apr-2022 |
| **Client** | BAM Ritchies |
| **Client Address:** | Glasgow Road<br>Kilsyth<br>Glasgow<br>Lanarkshire<br>G65 9BL |
| **Contact(s):** | Barry Clark<br>Jack Ross<br>Kevin Jack |
| **Project** | 326R Victoria North |

| | | | |
|---|---|---|---|
| **Quotation No.:** | | **Date Received:** | 31-Mar-2022 |
| **Order No.:** | RIT 265 312 391 | **Date Instructed:** | 31-Mar-2022 |
| **No. of Samples:** | 45 | | |
| **Turnaround (Wkdays):** | 5 | **Results Due:** | 06-Apr-2022 |
| **Date Approved:** | 06-Apr-2022 | | |

**Approved By:**



**Details:** Stuart Henderson, Technical Manager

# Results - Soil

**Project: 326R Victoria North**

| **Client: BAM Ritchies** | | | | **Chemtest Job No.:** | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | | | **Chemtest Sample ID.:** | 1402636 | 1402637 | 1402638 | 1402639 | 1402640 | 1402641 | 1402642 | 1402643 | 1402644 |
| Order No.: RIT 265 312 391 | | | | Client Sample Ref.: | WA1030279 | WA1030282 | WA1030285 | WA1033053 | WA1033057 | WA1033065 | WA1020685 | WA1020688 | WA1020693 |
| | | | | Client Sample ID.: | WA1030279 | WA1030282 | WA1030285 | WA1033053 | WA1033057 | WA1033065 | WA1020685 | WA1020688 | WA1020693 |
| | | | | Sample Location: | BH301 | BH301 | BH301 | BH301 | BH301 | BH301 | BH302 | BH302 | BH302 |
| | | | | Sample Type: | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | | Top Depth (m): | 0.50 | 1.20 | 2.00 | 3.00 | 4.70 | 8.50 | 1.20 | 2.70 | 4.70 |
| | | | | Bottom Depth (m): | | 1.65 | 2.45 | 3.45 | | | | | |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | | | | | |
| Moisture | N | 2030 | % | 0.020 | 19 | 20 | 22 | 23 | 24 | 20 | 14 | 20 | 19 |
| pH (2.5:1) | N | 2010 | | 4.0 | [A] 10.8 | [A] 8.8 | | | [A] 8.9 | [A] 8.6 | [A] 8.6 | [A] 8.7 | [A] 8.6 |
| Magnesium (Water Soluble) | N | 2120 | g/l | 0.010 | [A] < 0.010 | [A] 0.016 | | | [A] 0.016 | [A] 0.013 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 |
| Sulphate (2:1 Water Soluble) as SO4 | U | 2120 | g/l | 0.010 | [A] 1.4 | [A] 0.58 | | | [A] 0.22 | [A] 0.19 | [A] 0.41 | [A] 0.062 | [A] 0.075 |
| Total Sulphur | U | 2175 | % | 0.010 | [A] 0.30 | [A] 0.26 | | | [A] 0.082 | [A] 0.038 | [A] 0.38 | [A] 0.044 | [A] 0.042 |
| Chloride (Water Soluble) | U | 2220 | g/l | 0.010 | [A] 0.36 | [A] 2.1 | | | [A] < 0.010 | [A] 0.028 | [A] 0.015 | [A] < 0.010 | [A] < 0.010 |
| Nitrate (Water Soluble) | N | 2220 | g/l | 0.010 | < 0.010 | 0.017 | | | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| Sulphate (Acid Soluble) | U | 2430 | % | 0.010 | [A] 0.42 | [A] 0.69 | | | [A] 0.013 | [A] 0.033 | [A] 0.12 | [A] 0.014 | [A] 0.022 |
| Organic Matter | U | 2625 | % | 0.40 | | | [A] 1.6 | [A] 1.2 | | | | | |

# Results - Soil

**Project: 326R Victoria North**

| **Client: BAM Ritchies** | | | | **Chemtest Job No.:** | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | | | **Chemtest Sample ID.:** | 1402645 | 1402646 | 1402647 | 1402648 | 1402649 | 1402650 | 1402651 | 1402652 | 1402653 |
| Order No.: RIT 265 312 391 | | | | Client Sample Ref.: | WA1020645 | WA1020643 | WA1020653 | WA1020651 | WA1020670 | WA1020673 | WA1020678 | WA1030256 | WA1030255 |
| | | | | Client Sample ID.: | WA1020645 | WA1020643 | WA1020653 | WA1020651 | WA1020670 | WA1020673 | WA1020678 | WA1030256 | WA1030255 |
| | | | | Sample Location: | BH303 | BH303 | BH303 | BH303 | BH304 | BH304 | BH304 | BH304 | BH304 |
| | | | | Sample Type: | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | | Top Depth (m): | 0.50 | 1.00 | 2.00 | 2.70 | 1.00 | 1.20 | 2.70 | 6.00 | 6.00 |
| | | | | Bottom Depth (m): | | | 2.45 | | | 1.65 | | 6.45 | 6.45 |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | | | | | |
| Moisture | N | 2030 | % | 0.020 | 20 | 27 | 27 | 22 | 22 | 21 | 16 | 11 | 12 |
| pH (2.5:1) | N | 2010 | | 4.0 | | [A] 5.9 | | [A] 8.0 | | [A] 8.0 | | | [A] 8.0 |
| Magnesium (Water Soluble) | N | 2120 | g/l | 0.010 | | [A] 0.010 | | [A] < 0.010 | | [A] < 0.010 | | | [A] 0.019 |
| Sulphate (2:1 Water Soluble) as SO4 | U | 2120 | g/l | 0.010 | | [A] 0.23 | | [A] 0.13 | | [A] 0.12 | | | [A] 0.87 |
| Total Sulphur | U | 2175 | % | 0.010 | | [A] 0.37 | | [A] 0.23 | | [A] 0.51 | | | [A] 0.92 |
| Chloride (Water Soluble) | U | 2220 | g/l | 0.010 | | [A] < 0.010 | | [A] < 0.010 | | [A] < 0.010 | | | [A] < 0.010 |
| Nitrate (Water Soluble) | N | 2220 | g/l | 0.010 | | < 0.010 | | < 0.010 | | < 0.010 | | | < 0.010 |
| Sulphate (Acid Soluble) | U | 2430 | % | 0.010 | | [A] 0.20 | | [A] 0.072 | | [A] 0.099 | | | [A] 1.1 |
| Organic Matter | U | 2625 | % | 0.40 | [A] 21 | | [A] 10 | | [A] 43 | | [A] 50 | [A] 26 | |

# Results - Soil

**Project: 326R Victoria North**

| **Client: BAM Ritchies** | | | **Chemtest Job No.:** | | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | | **Chemtest Sample ID.:** | | 1402654 | 1402655 | 1402656 | 1402657 | 1402658 | 1402659 | 1402660 | 1402661 | 1402662 | 1402663 |
| Order No.: RIT 265 312 391 | | | Client Sample Ref.: | | WA1030257 | WA1030266 | WA1030271 | | | | | | | |
| | | | Client Sample ID.: | | WA1030257 | WA1030266 | WA1030271 | | | | | | | |
| | | | Sample Location: | | BH304 | BH304 | BH304 | BH305 | BH305 | BH305 | BH305 | BH305 | BH305 | BH305 |
| | | | Sample Type: | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | Top Depth (m): | | 7.00 | 11.50 | 14.50 | 0.50 | 1.00 | 2.70 | 3.70 | 5.70 | 7.00 | 8.50 |
| | | | Bottom Depth (m): | | | | | | | | | | | |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | | | | | | |
| Moisture | N | 2030 | % | 0.020 | 14 | 13 | 17 | 15 | 17 | 13 | 21 | 21 | 18 | 16 |
| pH (2.5:1) | N | 2010 | | 4.0 | | [A] 8.3 | [A] 8.4 | | [A] 4.9 | | [A] 6.1 | [A] 6.8 | | [A] 7.5 |
| Magnesium (Water Soluble) | N | 2120 | g/l | 0.010 | | [A] 0.047 | [A] 0.013 | | [A] < 0.010 | | [A] 0.036 | [A] 0.015 | | [A] < 0.010 |
| Sulphate (2:1 Water Soluble) as SO4 | U | 2120 | g/l | 0.010 | | [A] 1.6 | [A] 0.21 | | [A] 0.15 | | [A] 0.79 | [A] 0.28 | | [A] 0.10 |
| Total Sulphur | U | 2175 | % | 0.010 | | [A] 0.54 | [A] 0.14 | | [A] 0.90 | | [A] 0.60 | [A] 0.90 | | [A] 0.50 |
| Chloride (Water Soluble) | U | 2220 | g/l | 0.010 | | [A] < 0.010 | [A] < 0.010 | | [A] < 0.010 | | [A] < 0.010 | [A] < 0.010 | | [A] < 0.010 |
| Nitrate (Water Soluble) | N | 2220 | g/l | 0.010 | | < 0.010 | < 0.010 | | < 0.010 | | < 0.010 | 0.017 | | < 0.010 |
| Sulphate (Acid Soluble) | U | 2430 | % | 0.010 | | [A] 1.3 | [A] 0.067 | | [A] 0.26 | | [A] 0.31 | [A] 0.33 | | [A] 0.15 |
| Organic Matter | U | 2625 | % | 0.40 | [A] 9.7 | | | [A] 86 | | [A] 40 | | | [A] 36 | |

# Results - Soil

**Project: 326R Victoria North**

| **Client: BAM Ritchies** | | **Chemtest Job No.:** | | | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | **Chemtest Sample ID.:** | | | 1402664 | 1402665 | 1402666 | 1402667 | 1402668 | 1402669 | 1402670 | 1402671 | 1402672 |
| Order No.: RIT 265 312 391 | | Client Sample Ref.: | | | | | WA1020713 | WA1020718 | WA1031261 | WA1031263 | WA1031275 | WA1031279 | WA1031281 |
| | | Client Sample ID.: | | | | | WA1020713 | WA1020718 | WA1031261 | WA1031263 | WA1031275 | WA1031279 | WA1031281 |
| | | Sample Location: | | | BH305 | BH305 | BH313 | BH313 | TP304 | TP304 | TP305 | TP306 | TP306 |
| | | Sample Type: | | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | Top Depth (m): | | | 10.00 | 10.50 | 0.50 | 1.20 | 0.50 | 2.00 | 1.60 | 0.50 | 2.40 |
| | | Bottom Depth (m): | | | | | | 1.65 | | | | | 2.90 |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | | | | | |
| Moisture | N | 2030 | % | 0.020 | 11 | 14 | 13 | 12 | 19 | 27 | 25 | 22 | 16 |
| pH (2.5:1) | N | 2010 | | 4.0 | | [A] 7.6 | [A] 8.2 | [A] 8.4 | [A] 7.9 | [A] 8.0 | [A] 8.5 | [A] 8.1 | |
| Magnesium (Water Soluble) | N | 2120 | g/l | 0.010 | | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | |
| Sulphate (2:1 Water Soluble) as SO4 | U | 2120 | g/l | 0.010 | | [A] 0.090 | [A] 0.047 | [A] 0.054 | [A] 0.78 | [A] 0.23 | [A] 0.053 | [A] 0.19 | |
| Total Sulphur | U | 2175 | % | 0.010 | | [A] 0.031 | [A] 1.4 | [A] 0.041 | [A] 0.54 | [A] 0.32 | [A] 0.30 | [A] 0.45 | |
| Chloride (Water Soluble) | U | 2220 | g/l | 0.010 | | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] 0.28 | [A] 0.036 | |
| Nitrate (Water Soluble) | N | 2220 | g/l | 0.010 | | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 | |
| Sulphate (Acid Soluble) | U | 2430 | % | 0.010 | | [A] 0.012 | [A] 0.075 | [A] 0.043 | [A] 0.32 | [A] 0.15 | [A] 0.094 | [A] 0.043 | |
| Organic Matter | U | 2625 | % | 0.40 | [A] 2.6 | | | | [A] 55 | [A] 29 | [A] 36 | [A] 47 | [A] 1.7 |

# Results - Soil

**Project: 326R Victoria North**

| **Client: BAM Ritchies** | | **Chemtest Job No.:** | | | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 | 22-12186 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | **Chemtest Sample ID.:** | | | 1402673 | 1402674 | 1402675 | 1402676 | 1402677 | 1402678 | 1402679 | 1402680 |
| Order No.: RIT 265 312 391 | | Client Sample Ref.: | | | WA1031284 | WA1031265 | WA1031286 | WA1031287 | WA1031271 | WA1031273 | WA1031257 | WA1031252 |
| | | Client Sample ID.: | | | WA1031284 | WA1031265 | WA1031286 | WA1031287 | WA1031271 | WA1031273 | WA1031257 | WA1031252 |
| | | Sample Location: | | | TP307 | TP308 | TP309 | TP309 | TP310 | TP310 | TT301 | TT03A |
| | | Sample Type: | | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | Top Depth (m): | | | 2.00 | 0.30 | 0.50 | 1.50 | 2.00 | 2.60 | 2.20 | 1.00 |
| | | Bottom Depth (m): | | | | | | | | | | |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | | | | |
| Moisture | N | 2030 | % | 0.020 | 21 | 46 | 20 | 11 | 18 | 19 | 20 | 14 |
| pH (2.5:1) | N | 2010 | | 4.0 | [A] 7.9 | [A] 8.0 | [A] 8.5 | [A] 8.8 | [A] 8.6 | | [A] 8.6 | [A] 8.5 |
| Magnesium (Water Soluble) | N | 2120 | g/l | 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | | [A] < 0.010 | [A] < 0.010 |
| Sulphate (2:1 Water Soluble) as SO4 | U | 2120 | g/l | 0.010 | [A] 0.051 | [A] 0.037 | [A] 0.11 | [A] 0.028 | [A] 0.021 | | [A] 0.068 | [A] 0.036 |
| Total Sulphur | U | 2175 | % | 0.010 | [A] 0.28 | [A] 0.35 | [A] 0.35 | [A] 0.032 | [A] 0.043 | | [A] 0.057 | [A] 0.081 |
| Chloride (Water Soluble) | U | 2220 | g/l | 0.010 | [A] 0.032 | [A] 0.039 | [A] 0.011 | [A] < 0.010 | [A] < 0.010 | | [A] < 0.010 | [A] < 0.010 |
| Nitrate (Water Soluble) | N | 2220 | g/l | 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 | | < 0.010 | < 0.010 |
| Sulphate (Acid Soluble) | U | 2430 | % | 0.010 | [A] 0.058 | [A] 0.025 | [A] 0.057 | [A] < 0.010 | [A] < 0.010 | | [A] 0.032 | [A] 0.015 |
| Organic Matter | U | 2625 | % | 0.40 | [A] 24 | [A] 28 | [A] 31 | [A] 0.60 | | [A] 1.6 | | [A] 7.1 |

# Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

| Sample: | Sample Ref: | Sample ID: | Sample Location: | Sampled Date: | Deviation Code(s): | Containers Received: |
|---|---|---|---|---|---|---|
| 1402636 | WA1030279 | WA1030279 | BH301 | | A | Plastic Tub 1000g |
| 1402637 | WA1030282 | WA1030282 | BH301 | | A | Plastic Tub 1000g |
| 1402638 | WA1030285 | WA1030285 | BH301 | | A | Plastic Tub 1000g |
| 1402639 | WA1033053 | WA1033053 | BH301 | | A | Plastic Tub 1000g |
| 1402640 | WA1033057 | WA1033057 | BH301 | | A | Plastic Tub 1000g |
| 1402641 | WA1033065 | WA1033065 | BH301 | | A | Plastic Tub 1000g |
| 1402642 | WA1020685 | WA1020685 | BH302 | | A | Plastic Tub 1000g |
| 1402643 | WA1020688 | WA1020688 | BH302 | | A | Plastic Tub 1000g |
| 1402644 | WA1020693 | WA1020693 | BH302 | | A | Plastic Tub 1000g |
| 1402645 | WA1020645 | WA1020645 | BH303 | | A | Plastic Tub 1000g |
| 1402646 | WA1020643 | WA1020643 | BH303 | | A | Plastic Tub 1000g |
| 1402647 | WA1020653 | WA1020653 | BH303 | | A | Plastic Tub 1000g |
| 1402648 | WA1020651 | WA1020651 | BH303 | | A | Plastic Tub 1000g |
| 1402649 | WA1020670 | WA1020670 | BH304 | | A | Plastic Tub 1000g |
| 1402650 | WA1020673 | WA1020673 | BH304 | | A | Plastic Tub 1000g |
| 1402651 | WA1020678 | WA1020678 | BH304 | | A | Plastic Tub 1000g |
| 1402652 | WA1030256 | WA1030256 | BH304 | | A | Plastic Tub 1000g |
| 1402653 | WA1030255 | WA1030255 | BH304 | | A | Plastic Tub 1000g |
| 1402654 | WA1030257 | WA1030257 | BH304 | | A | Plastic Tub 1000g |
| 1402655 | WA1030266 | WA1030266 | BH304 | | A | Plastic Tub 1000g |
| 1402656 | WA1030271 | WA1030271 | BH304 | | A | Plastic Tub 1000g |
| 1402657 | | | BH305 | | A | Plastic Tub 1000g |
| 1402658 | | | BH305 | | A | Plastic Tub 1000g |
| 1402659 | | | BH305 | | A | Plastic Tub 1000g |
| 1402660 | | | BH305 | | A | Plastic Tub 1000g |
| 1402661 | | | BH305 | | A | Plastic Tub 1000g |
| 1402662 | | | BH305 | | A | Plastic Tub 1000g |
| 1402663 | | | BH305 | | A | Plastic Tub 1000g |

# Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

| Sample: | Sample Ref: | Sample ID: | Sample Location: | Sampled Date: | Deviation Code(s): | Containers Received: |
|---|---|---|---|---|---|---|
| 1402664 | | | BH305 | | A | Plastic Tub 1000g |
| 1402665 | | | BH305 | | A | Plastic Tub 1000g |
| 1402666 | WA1020713 | WA1020713 | BH313 | | A | Plastic Tub 1000g |
| 1402667 | WA1020718 | WA1020718 | BH313 | | A | Plastic Tub 1000g |
| 1402668 | WA1031261 | WA1031261 | TP304 | | A | Plastic Tub 1000g |
| 1402669 | WA1031263 | WA1031263 | TP304 | | A | Plastic Tub 1000g |
| 1402670 | WA1031275 | WA1031275 | TP305 | | A | Plastic Tub 1000g |
| 1402671 | WA1031279 | WA1031279 | TP306 | | A | Plastic Tub 1000g |
| 1402672 | WA1031281 | WA1031281 | TP306 | | A | Plastic Tub 1000g |
| 1402673 | WA1031284 | WA1031284 | TP307 | | A | Plastic Tub 1000g |
| 1402674 | WA1031265 | WA1031265 | TP308 | | A | Plastic Tub 1000g |
| 1402675 | WA1031286 | WA1031286 | TP309 | | A | Plastic Tub 1000g |
| 1402676 | WA1031287 | WA1031287 | TP309 | | A | Plastic Tub 1000g |
| 1402677 | WA1031271 | WA1031271 | TP310 | | A | Plastic Tub 1000g |
| 1402678 | WA1031273 | WA1031273 | TP310 | | A | Plastic Tub 1000g |
| 1402679 | WA1031257 | WA1031257 | TT301 | | A | Plastic Tub 1000g |
| 1402680 | WA1031252 | WA1031252 | TT03A | | A | Plastic Tub 1000g |

# Test Methods

| SOP | Title | Parameters included | Method summary |
|---|---|---|---|
| 2010 | pH Value of Soils | pH | pH Meter |
| 2030 | Moisture and Stone Content of Soils(Requirement of MCERTS) | Moisture content | Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C. |
| 2040 | Soil Description(Requirement of MCERTS) | Soil description | As received soil is described based upon BS5930 |
| 2120 | Water Soluble Boron, Sulphate, Magnesium & Chromium | Boron; Sulphate; Magnesium; Chromium | Aqueous extraction / ICP-OES |
| 2175 | Total Sulphur in Soils | Total Sulphur | Determined by high temperature combustion under oxygen, using an Eltra elemental analyser. |
| 2220 | Water soluble Chloride in Soils | Chloride | Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate. |
| 2430 | Total Sulphate in soils | Total Sulphate | Acid digestion followed by determination of sulphate in extract by ICP-OES. |
| 2625 | Total Organic Carbon in Soils | Total organic Carbon (TOC) | Determined by high temperature combustion under oxygen, using an Eltra elemental analyser. |

## Report Information

**Key**

| | |
|---|---|
| U | UKAS accredited |
| M | MCERTS and UKAS accredited |
| N | Unaccredited |
| S | This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis |
| SN | This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis |
| T | This analysis has been subcontracted to an unaccredited laboratory |
| I/S | Insufficient Sample |
| U/S | Unsuitable Sample |
| N/E | not evaluated |
| < | "less than" |
| > | "greater than" |
| SOP | Standard operating procedure |
| LOD | Limit of detection |

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

**Sample Deviation Codes**

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

**Sample Retention and Disposal**

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

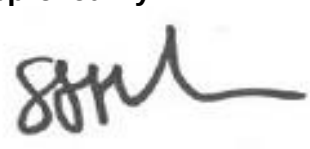
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

# Final Report

| | |
|---|---|
| **Report No.:** | 22-16505-1 |
| **Initial Date of Issue:** | 10-May-2022 |
| **Client** | BAM Ritchies |
| **Client Address:** | Glasgow Road<br>Kilsyth<br>Glasgow<br>Lanarkshire<br>G65 9BL |
| **Contact(s):** | Barry Clark<br>Jack Ross<br>Kevin Jack |
| **Project** | 326R Victoria North |

| | | | |
|---|---|---|---|
| **Quotation No.:** | | **Date Received:** | 05-May-2022 |
| **Order No.:** | RIT 268 349 190 | **Date Instructed:** | 05-May-2022 |
| **No. of Samples:** | 6 | | |
| **Turnaround (Wkdays):** | 5 | **Results Due:** | 11-May-2022 |
| **Date Approved:** | 10-May-2022 | | |

**Approved By:**



**Details:** Stuart Henderson, Technical Manager

# Results - Soil

**Project: 326R Victoria North**

| **Client: BAM Ritchies** | | | | **Chemtest Job No.:** | 22-16505 | 22-16505 | 22-16505 | 22-16505 | 22-16505 | 22-16505 |
|---|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | | | **Chemtest Sample ID.:** | 1422400 | 1422401 | 1422402 | 1422403 | 1422404 | 1422405 |
| Order No.: RIT 268 349 190 | | | | Client Sample Ref.: | WA1031312 | WA1030338 | WA1030346 | WA1032758 | WA1032769 | WA1033802 |
| | | | | Client Sample ID.: | WA1031312 | WA1030338 | WA1030346 | WA1032758 | WA1032769 | WA1033802 |
| | | | | Sample Location: | BH308 | BH309 | BH309 | BH310 | BH310 | BH322 |
| | | | | Sample Type: | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | | Top Depth (m): | 0.5 | 1 | 2 | 2.6 | 4.4 | 3.2 |
| | | | | Bottom Depth (m): | | | 2.45 | | | |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | | |
| Moisture | N | 2030 | % | 0.020 | 8.7 | 14 | 16 | 17 | 16 | 19 |
| pH (2.5:1) | N | 2010 | | 4.0 | [A] 9.5 | [A] 8.9 | [A] 8.7 | [A] 8.8 | [A] 8.8 | |
| Magnesium (Water Soluble) | N | 2120 | g/l | 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | |
| Sulphate (2:1 Water Soluble) as SO4 | U | 2120 | g/l | 0.010 | [A] 0.14 | [A] 0.063 | [A] 0.037 | [A] 0.086 | [A] 0.038 | |
| Total Sulphur | U | 2175 | % | 0.010 | [A] 0.15 | [A] 0.12 | [A] 0.11 | [A] 0.21 | [A] 0.016 | |
| Chloride (Water Soluble) | U | 2220 | g/l | 0.010 | [A] 0.016 | [A] < 0.010 | [A] 0.013 | [A] < 0.010 | [A] < 0.010 | |
| Nitrate (Water Soluble) | N | 2220 | g/l | 0.010 | < 0.010 | 0.021 | < 0.010 | < 0.010 | < 0.010 | |
| Sulphate (Acid Soluble) | U | 2430 | % | 0.010 | [A] 0.28 | [A] 0.068 | [A] 0.058 | [A] 0.13 | [A] < 0.010 | |
| Organic Matter | U | 2625 | % | 0.40 | | | | | | [A] 6.6 |

# Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

| Sample: | Sample Ref: | Sample ID: | Sample Location: | Sampled Date: | Deviation Code(s): | Containers Received: |
|---|---|---|---|---|---|---|
| 1422400 | WA1031312 | WA1031312 | BH308 | | A | Plastic Tub 500g |
| 1422401 | WA1030338 | WA1030338 | BH309 | | A | Plastic Tub 500g |
| 1422402 | WA1030346 | WA1030346 | BH309 | | A | Plastic Tub 500g |
| 1422403 | WA1032758 | WA1032758 | BH310 | | A | Plastic Tub 500g |
| 1422404 | WA1032769 | WA1032769 | BH310 | | A | Plastic Tub 500g |
| 1422405 | WA1033802 | WA1033802 | BH322 | | A | Plastic Tub 500g |

# Test Methods

| SOP | Title | Parameters included | Method summary |
|---|---|---|---|
| 2010 | pH Value of Soils | pH | pH Meter |
| 2030 | Moisture and Stone Content of Soils(Requirement of MCERTS) | Moisture content | Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C. |
| 2040 | Soil Description(Requirement of MCERTS) | Soil description | As received soil is described based upon BS5930 |
| 2120 | Water Soluble Boron, Sulphate, Magnesium & Chromium | Boron; Sulphate; Magnesium; Chromium | Aqueous extraction / ICP-OES |
| 2175 | Total Sulphur in Soils | Total Sulphur | Determined by high temperature combustion under oxygen, using an Eltra elemental analyser. |
| 2220 | Water soluble Chloride in Soils | Chloride | Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate. |
| 2430 | Total Sulphate in soils | Total Sulphate | Acid digestion followed by determination of sulphate in extract by ICP-OES. |
| 2625 | Total Organic Carbon in Soils | Total organic Carbon (TOC) | Determined by high temperature combustion under oxygen, using an Eltra elemental analyser. |

## Report Information

**Key**

| | |
|---|---|
| U | UKAS accredited |
| M | MCERTS and UKAS accredited |
| N | Unaccredited |
| S | This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis |
| SN | This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis |
| T | This analysis has been subcontracted to an unaccredited laboratory |
| I/S | Insufficient Sample |
| U/S | Unsuitable Sample |
| N/E | not evaluated |
| < | "less than" |
| > | "greater than" |
| SOP | Standard operating procedure |
| LOD | Limit of detection |

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

**Sample Deviation Codes**

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

**Sample Retention and Disposal**

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

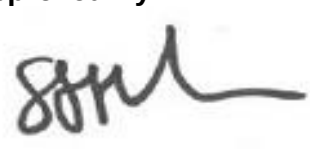
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

# Final Report

| | |
|---|---|
| **Report No.:** | 22-17557-1 |
| **Initial Date of Issue:** | 18-May-2022 |
| **Client** | BAM Ritchies |
| **Client Address:** | Glasgow Road<br>Kilsyth<br>Glasgow<br>Lanarkshire<br>G65 9BL |
| **Contact(s):** | Barry Clark<br>Jack Ross<br>Kevin Jack |
| **Project** | 326R Victoria North |

| | | | |
|---|---|---|---|
| **Quotation No.:** | | **Date Received:** | 12-May-2022 |
| **Order No.:** | RIT 269 026 619 | **Date Instructed:** | 12-May-2022 |
| **No. of Samples:** | 7 | | |
| **Turnaround (Wkdays):** | 5 | **Results Due:** | 18-May-2022 |
| **Date Approved:** | 18-May-2022 | | |

**Approved By:**



**Details:** Stuart Henderson, Technical Manager

# Results - Soil

**Project: 326R Victoria North**

| **Client: BAM Ritchies** | | **Chemtest Job No.:** | | | 22-17557 | 22-17557 | 22-17557 | 22-17557 | 22-17557 | 22-17557 | 22-17557 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | **Chemtest Sample ID.:** | | | 1427151 | 1427152 | 1427153 | 1427154 | 1427155 | 1427156 | 1427157 |
| Order No.: RIT 269 026 619 | | Client Sample Ref.: | | | WA1031296 | WA1029659 | WA1029693 | WA1029597 | WA1029607 | WA1029634 | WA1029636 |
| | | Client Sample ID.: | | | WA1031296 | WA1029659 | WA1029693 | WA1029597 | WA1029607 | WA1029634 | WA1029636 |
| | | Sample Location: | | | BH311 | BH311 | BH312 | BH314 | BH314 | BH315 | BH320 |
| | | Sample Type: | | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | Top Depth (m): | | | 1.00 | 2.45 | 2.70 | 1.00 | 2.70 | 1.80 | 1.20 |
| | | Bottom Depth (m): | | | | | | | | | 1.65 |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | | | |
| Moisture | N | 2030 | % | 0.020 | 14 | 10 | 18 | 17 | 15 | 18 | 11 |
| pH (2.5:1) | N | 2010 | | 4.0 | [A] 8.0 | [A] 8.5 | [A] 8.4 | [A] 8.1 | [A] 7.9 | [A] 8.6 | |
| Magnesium (Water Soluble) | N | 2120 | g/l | 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | [A] < 0.010 | |
| Sulphate (2:1 Water Soluble) as SO4 | U | 2120 | g/l | 0.010 | [A] 0.044 | [A] 0.059 | [A] 0.048 | [A] 0.021 | [A] 0.23 | [A] 0.048 | |
| Total Sulphur | U | 2175 | % | 0.010 | [A] 0.083 | [A] 0.024 | [A] 0.050 | [A] 0.36 | [A] 0.38 | [A] 0.096 | |
| Chloride (Water Soluble) | U | 2220 | g/l | 0.010 | [A] 0.051 | [A] 0.040 | [A] 0.042 | [A] 0.021 | [A] < 0.010 | [A] < 0.010 | |
| Nitrate (Water Soluble) | N | 2220 | g/l | 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 | |
| Sulphate (Acid Soluble) | U | 2430 | % | 0.010 | [A] 0.066 | [A] 0.025 | [A] 0.036 | [A] 0.086 | [A] 0.15 | [A] 0.039 | |
| Organic Matter | U | 2625 | % | 0.40 | | | | [A] 34 | | | [A] 3.6 |

# Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

| Sample: | Sample Ref: | Sample ID: | Sample Location: | Sampled Date: | Deviation Code(s): | Containers Received: |
|---|---|---|---|---|---|---|
| 1427151 | WA1031296 | WA1031296 | BH311 | | A | Plastic Tub 1000g |
| 1427152 | WA1029659 | WA1029659 | BH311 | | A | Plastic Tub 1000g |
| 1427153 | WA1029693 | WA1029693 | BH312 | | A | Plastic Tub 1000g |
| 1427154 | WA1029597 | WA1029597 | BH314 | | A | Plastic Tub 1000g |
| 1427155 | WA1029607 | WA1029607 | BH314 | | A | Plastic Tub 1000g |
| 1427156 | WA1029634 | WA1029634 | BH315 | | A | Plastic Tub 1000g |
| 1427157 | WA1029636 | WA1029636 | BH320 | | A | Plastic Tub 1000g |

# Test Methods

| SOP | Title | Parameters included | Method summary |
|---|---|---|---|
| 2010 | pH Value of Soils | pH | pH Meter |
| 2030 | Moisture and Stone Content of Soils(Requirement of MCERTS) | Moisture content | Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C. |
| 2040 | Soil Description(Requirement of MCERTS) | Soil description | As received soil is described based upon BS5930 |
| 2120 | Water Soluble Boron, Sulphate, Magnesium & Chromium | Boron; Sulphate; Magnesium; Chromium | Aqueous extraction / ICP-OES |
| 2175 | Total Sulphur in Soils | Total Sulphur | Determined by high temperature combustion under oxygen, using an Eltra elemental analyser. |
| 2220 | Water soluble Chloride in Soils | Chloride | Aqueous extraction and measuremernt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate. |
| 2430 | Total Sulphate in soils | Total Sulphate | Acid digestion followed by determination of sulphate in extract by ICP-OES. |
| 2625 | Total Organic Carbon in Soils | Total organic Carbon (TOC) | Determined by high temperature combustion under oxygen, using an Eltra elemental analyser. |

## Report Information

**Key**

| | |
|---|---|
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| M | MCERTS and UKAS accredited |
| N | Unaccredited |
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| SN | This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis |
| T | This analysis has been subcontracted to an unaccredited laboratory |
| I/S | Insufficient Sample |
| U/S | Unsuitable Sample |
| N/E | not evaluated |
| < | "less than" |
| > | "greater than" |
| SOP | Standard operating procedure |
| LOD | Limit of detection |

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**Sample Deviation Codes**

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B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
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E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

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All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

# SUMMARY OF GEOTECHNICAL TESTING

| Sample details | | | | | Classification Tests | | | | | Density Tests | | Undrained Triaxial Compression | | | | Chemical Tests | | | Other tests and comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Depth (m) | Sample Ref | Type | Description | WC % | LL % | PL % | PI % | <425 µm % | Bulk Mg/m³ | Dry Mg/m³ | Condition | Cell Pressure kPa | Deviator Stress kPa | Mean Shear Stress kPa | pH | 2:1 W/S SO4 g/L | W/S Mg mg/L | |
| BH302 | 7.50 | WA1020699 | U | Stiff brown CLAY. | 19.3 | | | | | 2.19 | 1.84 | Undisturbed | 75<br>150<br>225 | 165<br>181<br>197 | 91 | | | | Effective Stress |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | |

Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed)

Checked and Approved by



J Sturges - Operations Manager
03/05/2022

Project Number:

**GEO / 35160**

Project Name:

**Victoria North**
**BAX.326R**

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BS 1377-7 : 1990 Clause 9

# UNCONSOLIDATED UNDRAINED MULTISTAGE TRIAXIAL COMPRESSION

| | |
|---|---|
| Location | BH302 |
| Sample Ref | WA1020699 |
| Depth (m) | 7.50 |
| Sample Type | U |

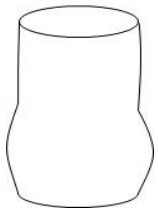
Description:

Stiff brown CLAY.

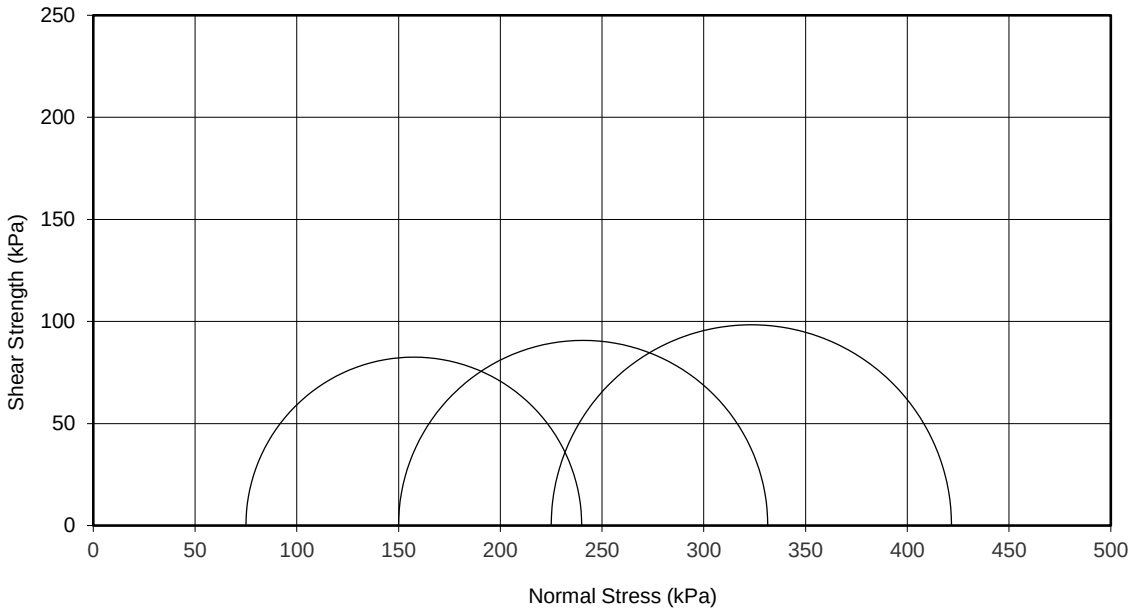
**Specimen Details**

| Specimen conditions | | Undisturbed | | |
|---|---|---|---|---|
| Length | (mm) | 200.3 | | |
| Diameter | (mm) | 99.1 | | |
| Moisture content | (%) | 19.3 | | |
| Bulk density | (Mg/m³) | 2.19 | | |
| Dry density | (Mg/m³) | 1.84 | | |
| **Test Details** | | **1** | **2** | **3** |
| Latex membrane thickness | (mm) | 0.3 | 0.3 | 0.3 |
| Specimen height prior to shearing | (mm) | 200.3 | - | - |
| Membrane correction | (kPa) | 0.8 | 1.0 | 1.1 |
| Mean rate of shear | (%/min) | 1.0 | 1.0 | 1.0 |
| Cell pressure | (kPa) | 75 | 150 | 225 |
| Strain at failure | (%) | 12.5 | 15.5 | 20.0 |
| Maximum deviator stress | (kPa) | 165 | 181 | 197 |
| Shear Stress Cu | (kPa) | 83 | 91 | 98 |

**Mode of failure**



| | |
|---|---|
| Orientation of the sample | Vertical |
| Distance from top of tube mm | 70 |




Tested by IT
Checked and Approved by

J Sturges - Operations Manager
03/05/2022

Project Number:

**GEO / 35160**

Project Name:

**Victoria North**
**BAX.326R**

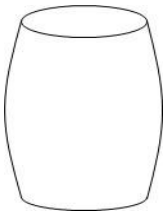
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BS1377 : Part 8 : Clause 7 : 1990 and Technical Procedure TP38

# CONSOLIDATED UNDRAINED MULTISTAGE TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

| | |
|---|---|
| Borehole No.: | BH302 |
| Sample No.: | WA1020699 |
| Depth (m): | 7.50 |

Description:
Firm dark brown gravelly sandy CLAY. Sand and gravel are fine.

| | | | | |
|---|---|---|---|---|
| **SPECIMEN DETAILS** | | | | |
| Depth within original sample | | 20 mm from top | | |
| Orientation within original sample | | Vertical | | |
| **TEST DETAILS** | | | | |
| Specimen Type and Preparation | | U (Undisturbed) | | |
| Cell Preparation | | Checks performed in accordance with Clause 3.5 | | |
| Specimen Number | | **Multistage** | | |
| Initial Diameter | *mm* | 69.08 | | |
| Initial Length | *mm* | 140.96 | | |
| Initial Water Content | *%* | 17.1 | | |
| Initial Wet Density | *Mg/m³* | 2.14 | | |
| Drainage Conditions | | One end and radial boundary | | |
| **SATURATION STAGE** | | Method: Clause 5.2 | | |
| Final Cell Pressure | *kPa* | 375 | | |
| Final Pore Pressure | *kPa* | 358 | | |
| Final Pore Pressure Parameter B | | 1.00 | | |
| Duration | *day(s)* | 2 | | |
| **CONSOLIDATION STAGE** | | **Stage No 1** | **Stage No 2** | **Stage No 3** |
| Cell Pressure | *kPa* | 375 | 450 | 525 |
| Back Pressure | *kPa* | 300 | 300 | 300 |
| Effective Pressure | *kPa* | 75 | 150 | 225 |
| Final Pore Pressure | *kPa* | 300 | 300 | 300 |
| Final Pore Pressure Dissipation | *%* | 100 | 100 | 100 |
| Duration | *day(s)* | 2 | 1 | 2 |
| **SHEARING STAGE** | | | | |
| Cell Pressure | *kPa* | 375 | 450 | 525 |
| Rate of Axial Displacement | *mm/min* | 0.0018 | 0.0012 | 0.0030 |
| Initial Pore Pressure | *kPa* | 300 | 300 | 300 |
| Initial Effective Stress | *kPa* | 75 | 150 | 225 |
| **CONDITIONS AT FAILURE** | *criteria* | Maximum effective principal stress ratio | | |
| Pore Pressure | *kPa* | 322 | 349 | 356 |
| Minor Effective Principal Stress | *kPa* | 53 | 101 | 169 |
| Deviator Stress | *kPa* | 95 | 165 | 293 |
| Major Effective Principal Stress | *kPa* | 148 | 266 | 462 |
| Effective Principal Stress Ratio | | 2.79 | 2.63 | 2.73 |
| Pore Pressure Parameter A | | 0.23 | 0.29 | 0.19 |
| Axial Strain | *%* | 1.5 | 1.1 | 4.8 |
| Membrane & filter correction applied to Deviator Stress | *kPa* | 4 | 3 | 6 |
| Duration | *day(s)* | 1 | 1 | 3 |
| Final Water Content | *%* | 16.0 | | |
| Final Wet Density | *Mg/m³* | 2.20 | | |
| **EFFECTIVE STRESS PARAMETERS** | | | | |
| Cohesion | *kPa* | 0 | | |
| Angle of Shear Resistance | *degrees* | 27.5 | | |
| **FAILURE SKETCH** | |  | | |

Checked and Approved by

P Heritage

P Heritage - Project Manager
03/05/2022

Project Number:

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Project Name:

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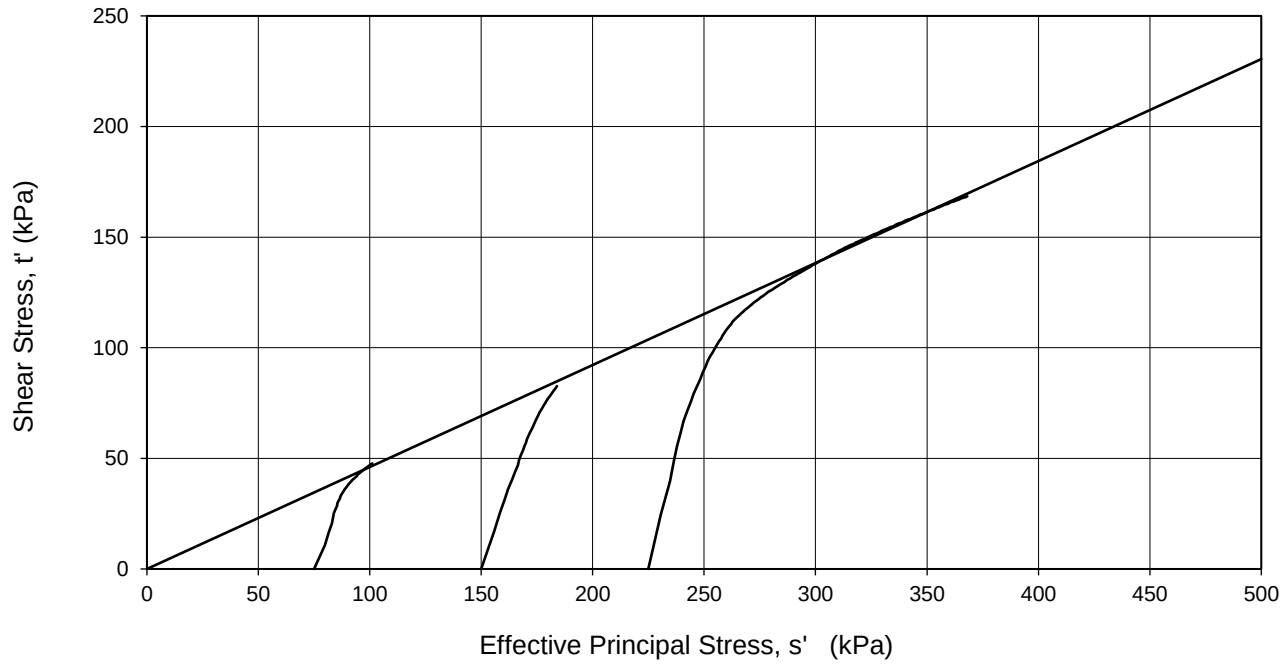
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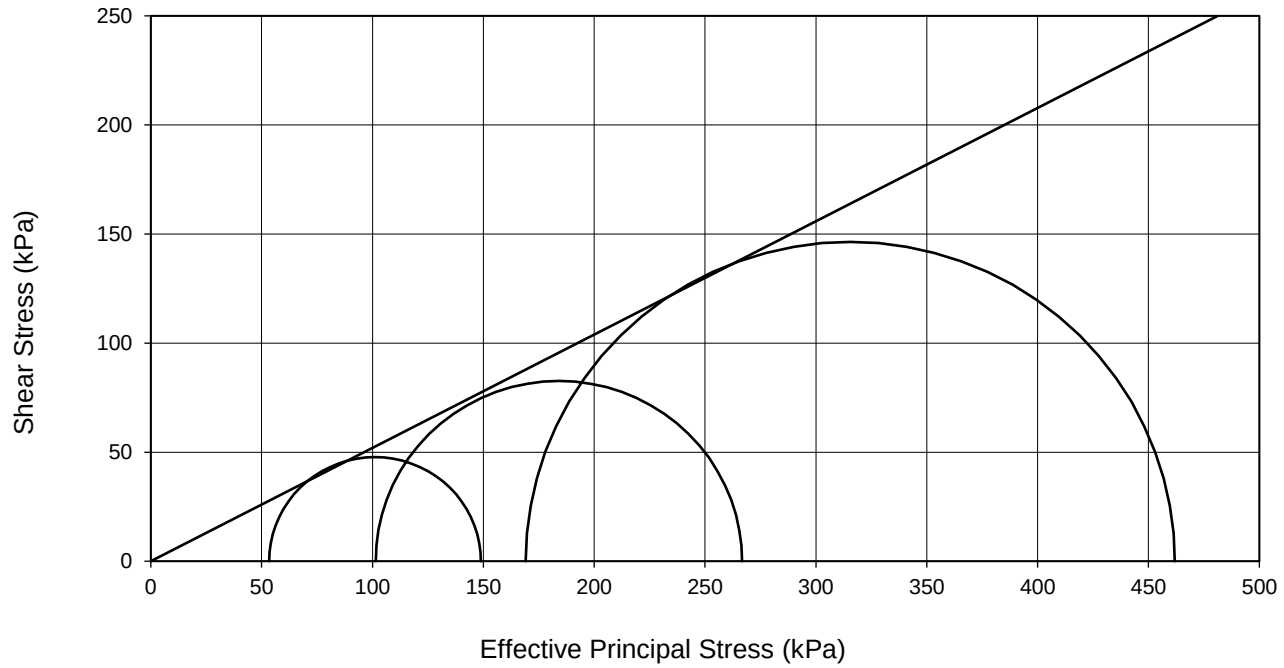
BS1377 : Part 8 : Clause 7 : 1990 and Technical Procedure TP38

# CONSOLIDATED UNDRAINED MULTISTAGE TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

| | |
|---|---|
| Borehole No.: | BH302 |
| Sample No.: | WA1020699 |
| Depth (m): | 7.50 |

Description:
Firm dark brown gravelly sandy CLAY. Sand and gravel are fine.




Checked and Approved by

P Heritage

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03/05/2022

Project Number:

**GEO / 35160**

Project Name:

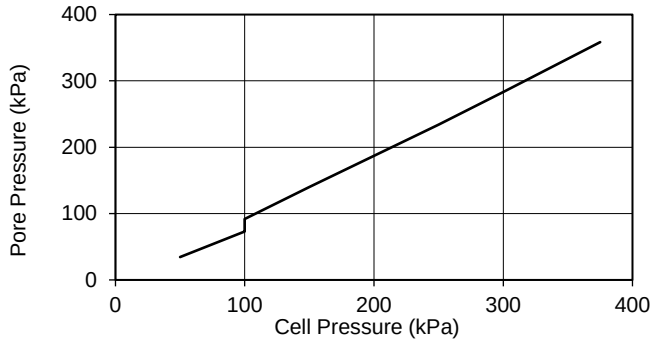
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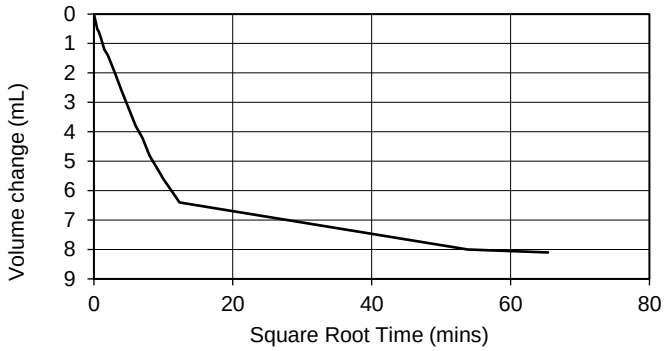
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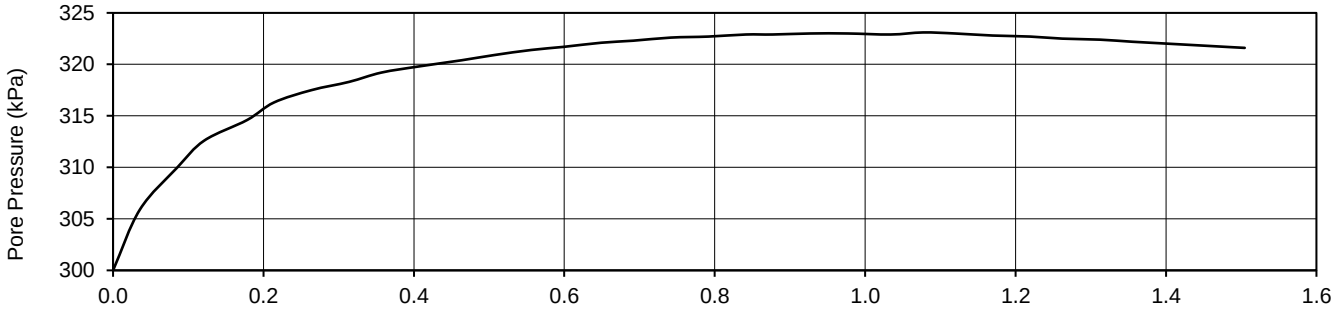
BS1377 : Part 8 : Clause 7 : 1990 and Technical Procedure TP38

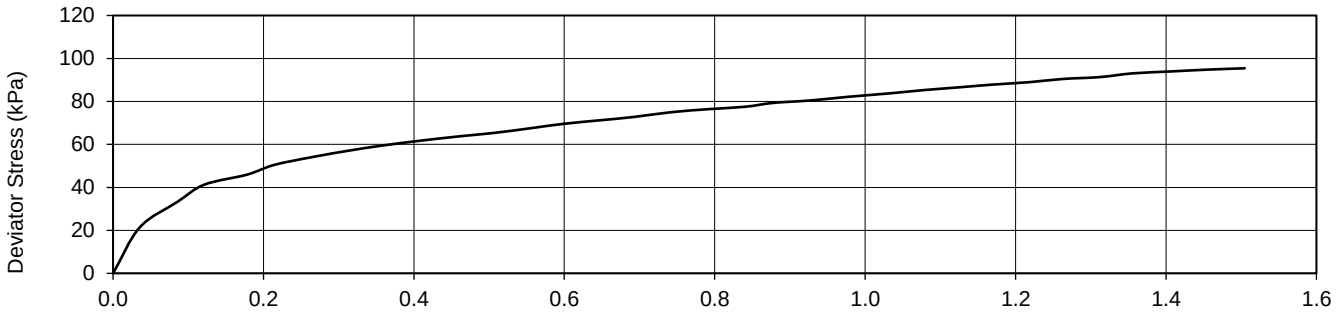
# CONSOLIDATED UNDRAINED MULTISTAGE TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

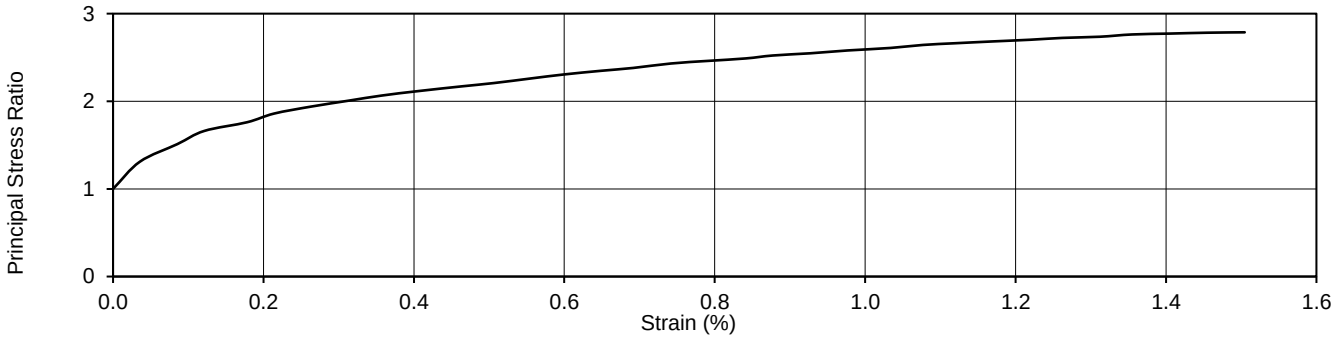
| | |
|---|---|
| Borehole No.: BH302<br>Sample No.: WA1020699<br>Depth (m): 7.50 | **Stage No 1** |




Checked and Approved by

P. Heritage

P Heritage - Project Manager
03/05/2022

Project Number:

**GEO / 35160**

Project Name:

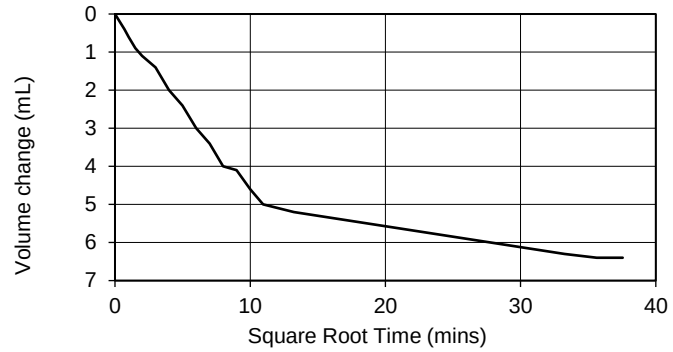
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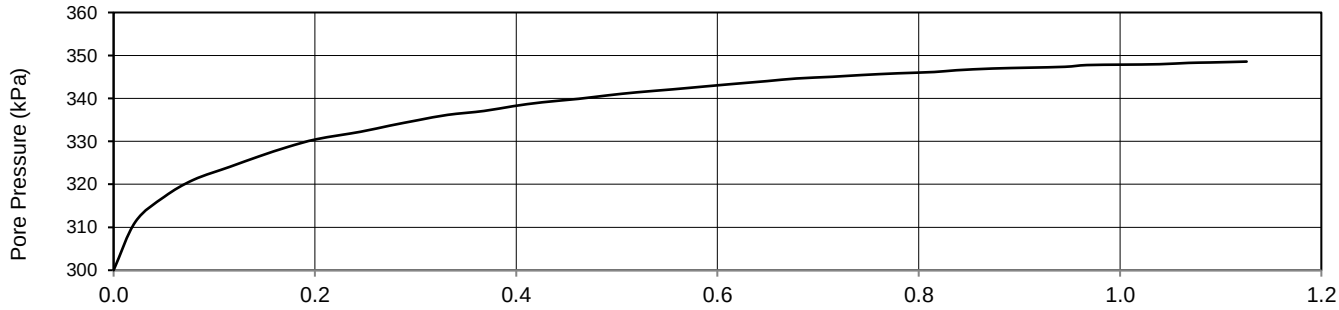
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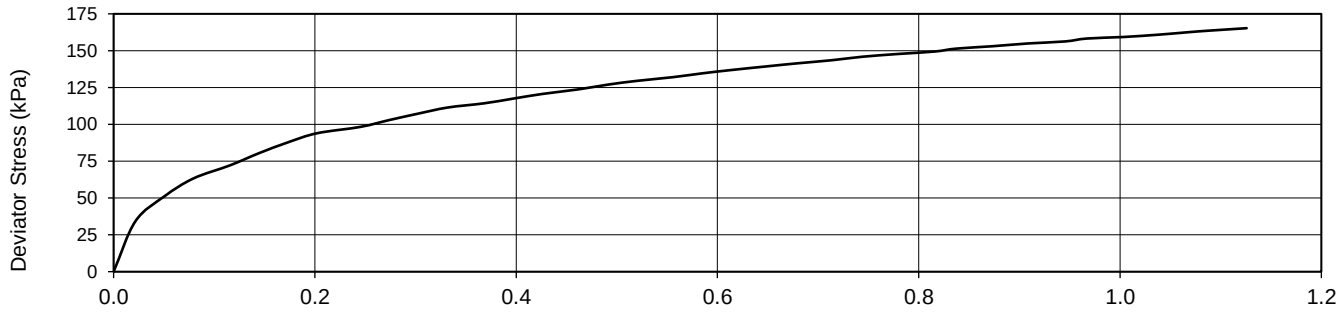
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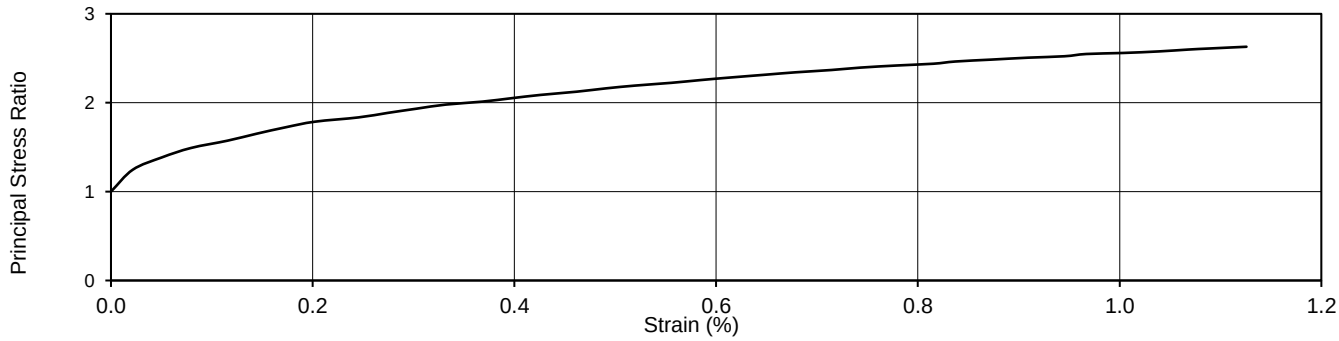
# CONSOLIDATED UNDRAINED MULTISTAGE TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

| | |
|---|---|
| Borehole No.: BH302<br>Sample No.: WA1020699<br>Depth (m): 7.50 | **Stage No 2** |




Checked and Approved by

P. Heritage

P Heritage - Project Manager
03/05/2022

Project Number:

**GEO / 35160**

Project Name:

**Victoria North**
**BAX.326R**

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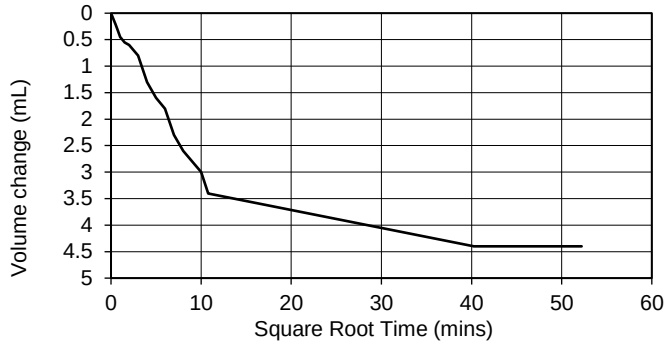
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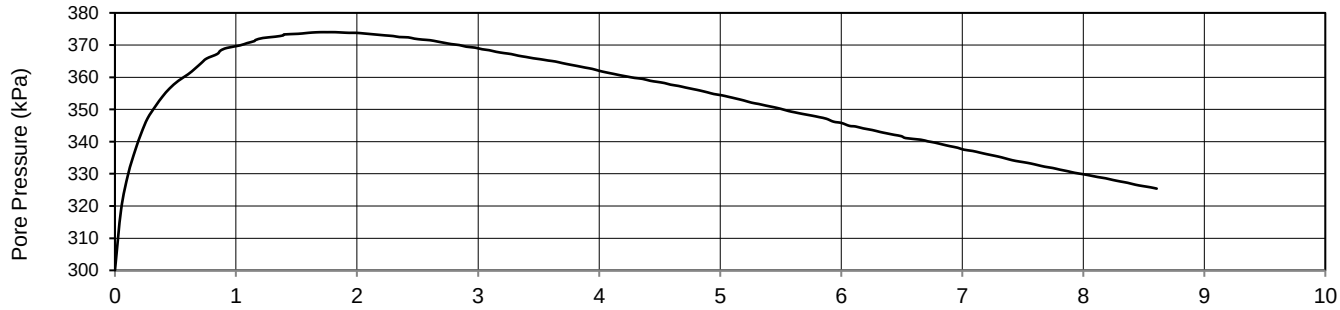
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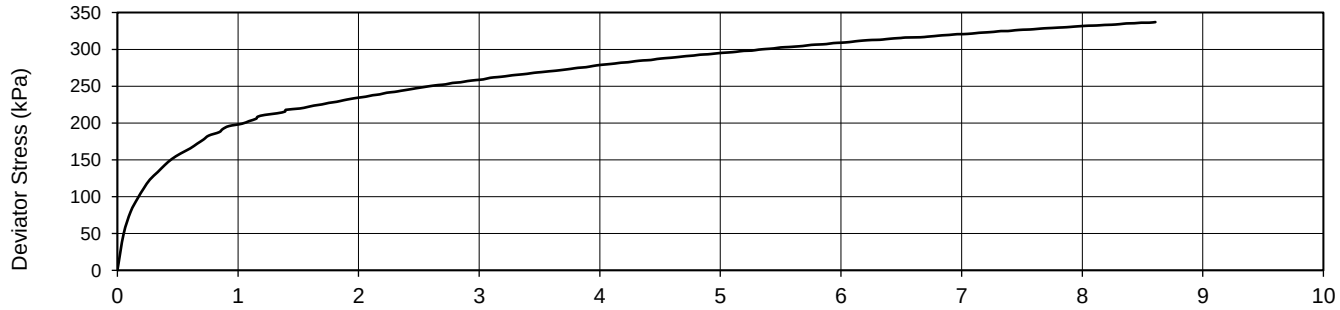
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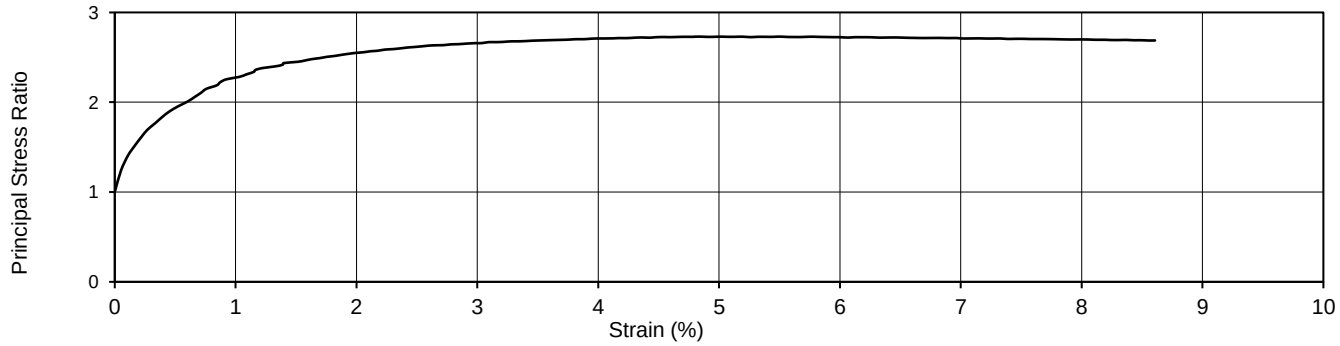
| | |
|---|---|
| Borehole No.: | BH302 |
| Sample No.: | WA1020699 |
| Depth (m): | 7.50 |

**Stage No 3**




Checked and Approved by

P Heritage

P Heritage - Project Manager
03/05/2022

Project Number:

**GEO / 35160**

Project Name:

**Victoria North**
**BAX.326R**

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GEOLABS Limited
Bucknalls Lane
Garston
Watford
Hertfordshire
WD25 9XX
Tel: +44(0) 1923 892 190
Fax: +44(0) 1923 892 191
email: admin@geolabs.co.uk
web: www.geolabs.co.uk

**BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

31 May 2022
**Report No : GEO/35405/01**


For the attention of Mr J Ross

Date samples received 04/05/2022
Date written instructions received 05/05/2022
Date testing commenced 06/05/2022
**Date of sample disposal 28/06/2022**

Our ref **GEO / 35405**
Your Ref **BAX.326R**

Project **VICTORIA NORTH HIF INFRASTRUCTURE & ENABLING WORKS**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

**LABORATORY TEST REPORT**

| Item No | Test Quantity | Description |
|---|---|---|
| 1 | 3 | Consolidated Undrained Triaxial Compression<br>BH301B / 4.00-4.45 / WA1026355 / U<br>BH301B / 7.50-7.95 / WA1026358 / U<br>BH301B / 12.00-12.45 / WA1026361 / U |

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**

P Heritage

P Heritage
**Project Manager**

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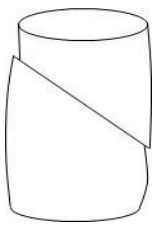
BS1377 : Part 8 : Clause 7

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

| | |
|---|---|
| Borehole No.: | BH301B |
| Sample No.: | WA1026355 |
| Depth (m): | 4.00-4.45 |

Description:
Firm brown gravelly CLAY. Gravel is fine to medium.

| | | |
|---|---|---|
| **SPECIMEN DETAILS** | | |
| Depth within original sample | | 20 mm from top |
| Orientation within original sample | | Vertical |
| **TEST DETAILS** | | |
| Specimen Type and Preparation | | U (Undisturbed) |
| Cell Preparation | | Checks performed in accordance with Clause 3.5 |
| Specimen Number | | **Single** |
| Initial Diameter | *mm* | 104.65 |
| Initial Length | *mm* | 200.85 |
| Initial Water Content | *%* | 22.9 |
| Initial Wet Density | *Mg/m³* | 2.07 |
| Drainage Conditions | | One end and radial boundary |
| **SATURATION STAGE** | | Method: Clause 5.2 |
| Final Cell Pressure | *kPa* | 380 |
| Final Pore Pressure | *kPa* | 370 |
| Final Pore Pressure Parameter B | | 1.00 |
| Duration | *day(s)* | 1 |
| **CONSOLIDATION STAGE** | | |
| Cell Pressure | *kPa* | 380 |
| Back Pressure | *kPa* | 300 |
| Effective Pressure | *kPa* | 80 |
| Final Pore Pressure | *kPa* | 300 |
| Final Pore Pressure Dissipation | *%* | 100 |
| Duration | *day(s)* | 3 |
| **SHEARING STAGE** | | |
| Cell Pressure | *kPa* | 380 |
| Rate of Axial Displacement | *mm/min* | 0.0030 |
| Initial Pore Pressure | *kPa* | 300 |
| Initial Effective Stress | *kPa* | 80 |
| **CONDITIONS AT FAILURE** | *criteria* | Maximum deviator stress |
| Pore Pressure | *kPa* | 319 |
| Minor Effective Principal Stress | *kPa* | 61 |
| Deviator Stress | *kPa* | 125 |
| Major Effective Principal Stress | *kPa* | 186 |
| Effective Principal Stress Ratio | | 3.06 |
| Pore Pressure Parameter A | | 0.15 |
| Axial Strain | *%* | 13.3 |
| Membrane & filter correction applied to Deviator Stress | *kPa* | 5 |
| Duration | *day(s)* | 6 |
| Final Water Content | *%* | 20.8 |
| Final Wet Density | *Mg/m³* | 2.06 |
| **EFFECTIVE STRESS PARAMETERS** | | |
| Cohesion | *kPa* | Not applicable |
| Angle of Shear Resistance | *degrees* | Not applicable |
| **FAILURE SKETCH** | | |



Checked and Approved by

P. Heritage

P Heritage - Project Manager
31/05/2022

Project Number:

**GEO / 35405**

Project Name:

**Victoria North HIF Infrastructure & Enabling Works**
**BAX.326R**

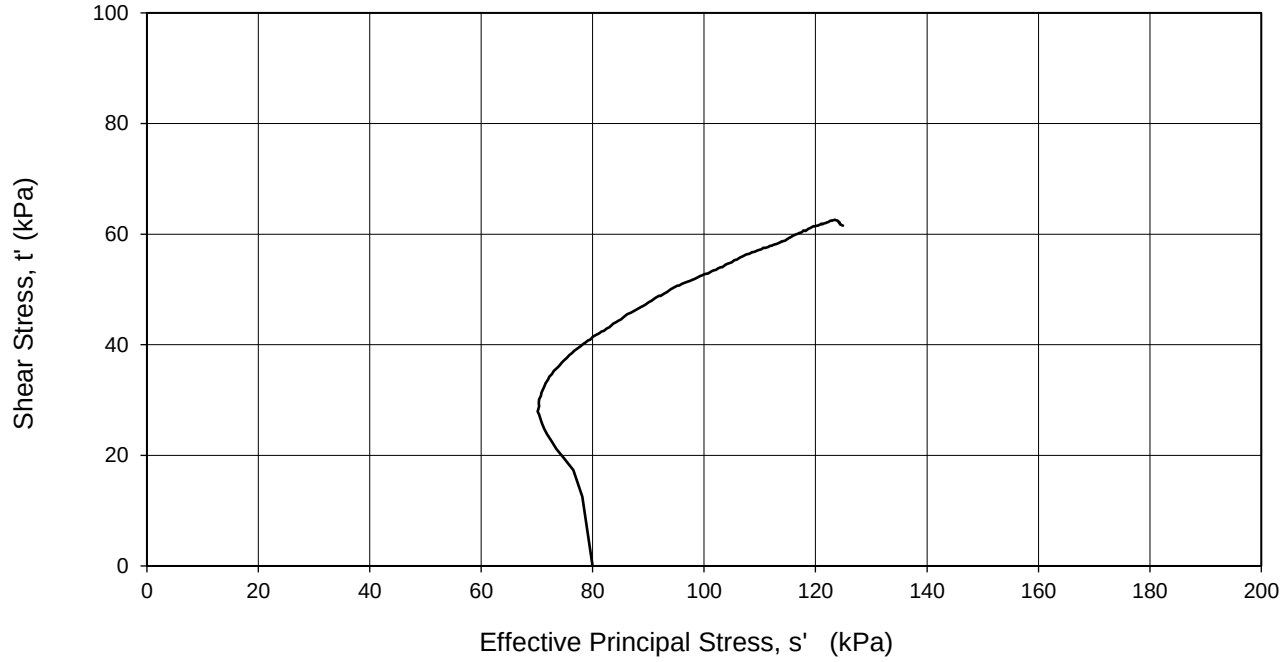
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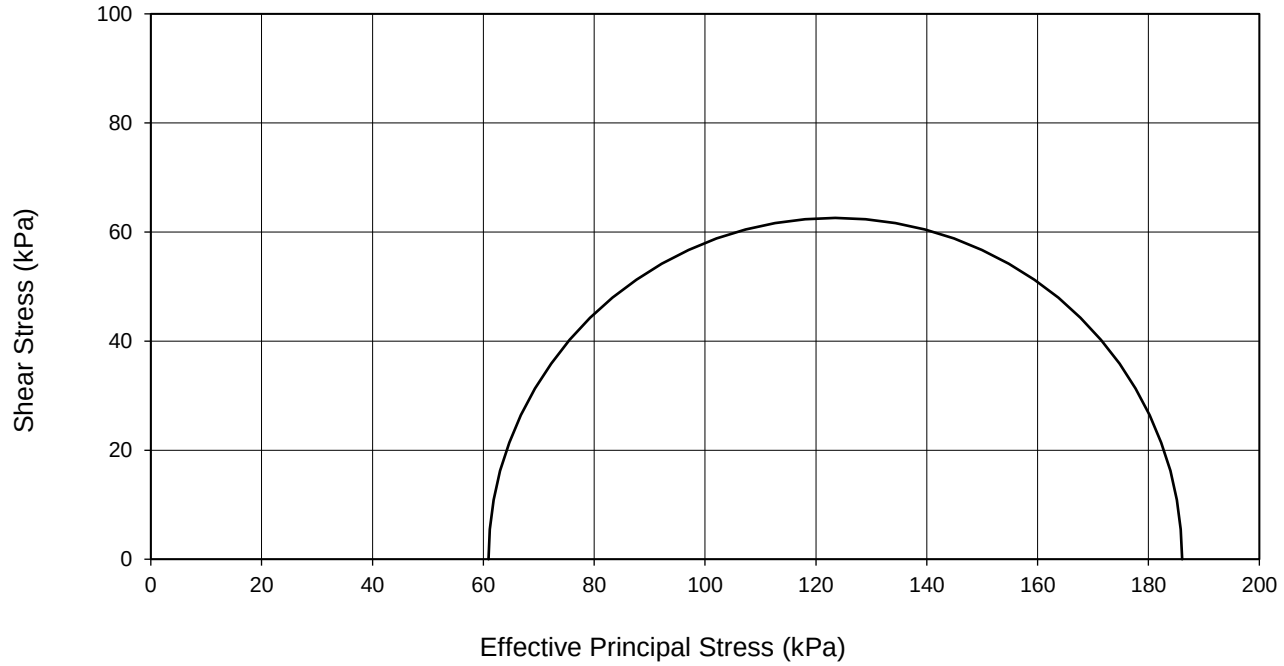
BS1377 : Part 8 : Clause 7

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

| | |
|---|---|
| Borehole No.: | BH301B |
| Sample No.: | WA1026355 |
| Depth (m): | 4.00-4.45 |

Description:
Firm brown gravelly CLAY. Gravel is fine to medium.




Checked and Approved by

P. Heritage

P Heritage - Project Manager
31/05/2022

Project Number:

**GEO / 35405**

Project Name:

**Victoria North HIF Infrastructure & Enabling Works**

**BAX.326R**

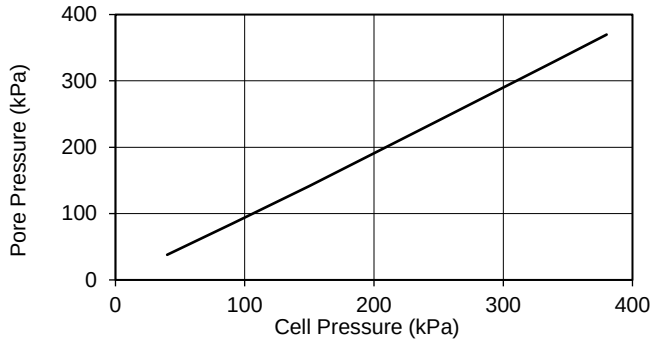
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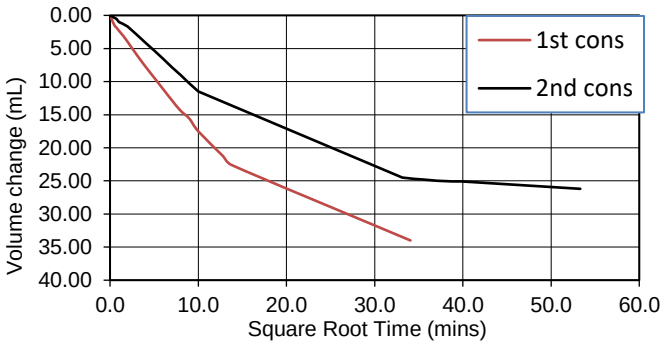
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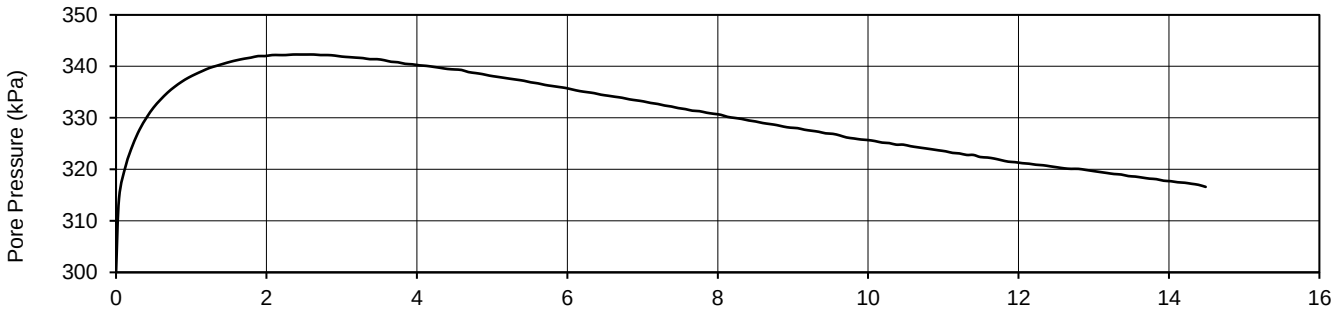
BS1377 : Part 8 : Clause 7

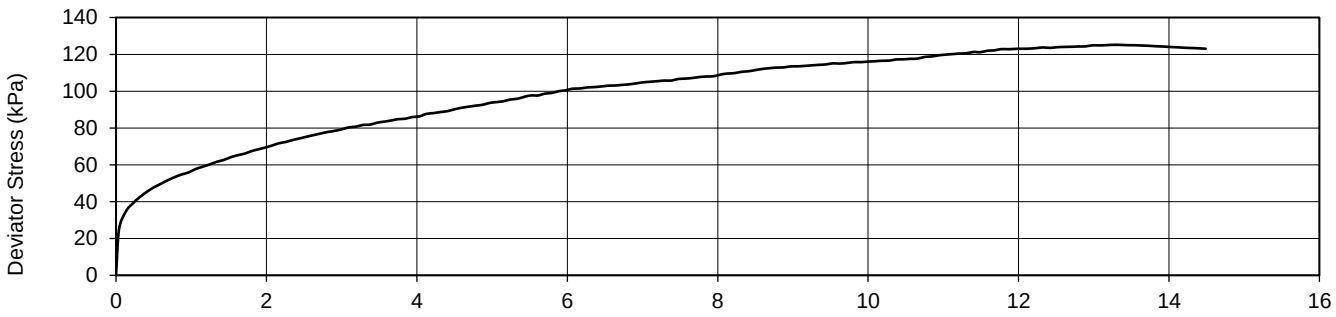
# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

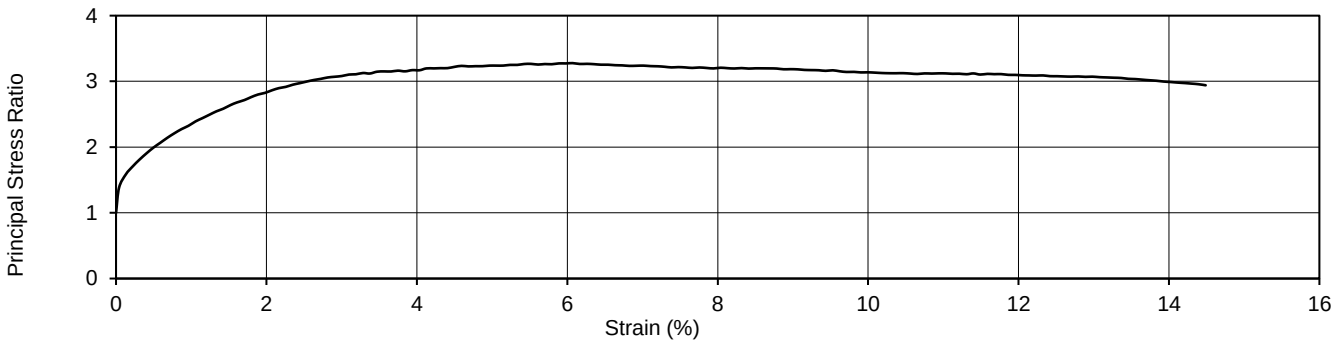
| | |
|---|---|
| Borehole No.: | BH301B |
| Sample No.: | WA1026355 |
| Depth (m): | 4.00-4.45 |




Checked and Approved by

P Heritage

P Heritage - Project Manager
31/05/2022

Project Number:

**GEO / 35405**

Project Name:

**Victoria North HIF Infrastructure & Enabling Works**

**BAX.326R**

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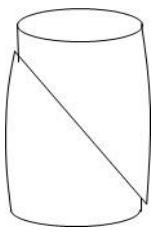
BS1377 : Part 8 : Clause 7

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

| | |
|---|---|
| Borehole No.: | BH301B |
| Sample No.: | WA1026358 |
| Depth (m): | 7.50-7.95 |

Description:
Stiff brown sandy slightly fine gravelly CLAY.

| | | |
|---|---|---|
| **SPECIMEN DETAILS** | | |
| Depth within original sample | | 20 mm from top |
| Orientation within original sample | | Vertical |
| **TEST DETAILS** | | |
| Specimen Type and Preparation | | U (Undisturbed) |
| Cell Preparation | | Checks performed in accordance with Clause 3.5 |
| Specimen Number | | **Single** |
| Initial Diameter | *mm* | 102.63 |
| Initial Length | *mm* | 201.53 |
| Initial Water Content | *%* | 15.2 |
| Initial Wet Density | *Mg/m³* | 2.19 |
| Drainage Conditions | | One end and radial boundary |
| **SATURATION STAGE** | | Method: Clause 5.2 |
| Final Cell Pressure | *kPa* | 440 |
| Final Pore Pressure | *kPa* | 425 |
| Final Pore Pressure Parameter B | | 1.00 |
| Duration | *day(s)* | 2 |
| **CONSOLIDATION STAGE** | | |
| Cell Pressure | *kPa* | 440 |
| Back Pressure | *kPa* | 300 |
| Effective Pressure | *kPa* | 140 |
| Final Pore Pressure | *kPa* | 300 |
| Final Pore Pressure Dissipation | *%* | 100 |
| Duration | *day(s)* | 1 |
| **SHEARING STAGE** | | |
| Cell Pressure | *kPa* | 440 |
| Rate of Axial Displacement | *mm/min* | 0.020 |
| Initial Pore Pressure | *kPa* | 300 |
| Initial Effective Stress | *kPa* | 140 |
| **CONDITIONS AT FAILURE** | *criteria* | Maximum deviator stress |
| Pore Pressure | *kPa* | 313 |
| Minor Effective Principal Stress | *kPa* | 127 |
| Deviator Stress | *kPa* | 205 |
| Major Effective Principal Stress | *kPa* | 332 |
| Effective Principal Stress Ratio | | 2.62 |
| Pore Pressure Parameter A | | 0.07 |
| Axial Strain | *%* | 19.7 |
| Membrane & filter correction applied to Deviator Stress | *kPa* | 6 |
| Duration | *day(s)* | 2 |
| Final Water Content | *%* | 15.0 |
| Final Wet Density | *Mg/m³* | 2.24 |
| **EFFECTIVE STRESS PARAMETERS** | | |
| Cohesion | *kPa* | Not applicable |
| Angle of Shear Resistance | *degrees* | Not applicable |
| **FAILURE SKETCH** | | |



Checked and Approved by

P. Heritage

P Heritage - Project Manager
31/05/2022

Project Number:

**GEO / 35405**

Project Name:

**Victoria North HIF Infrastructure & Enabling Works**
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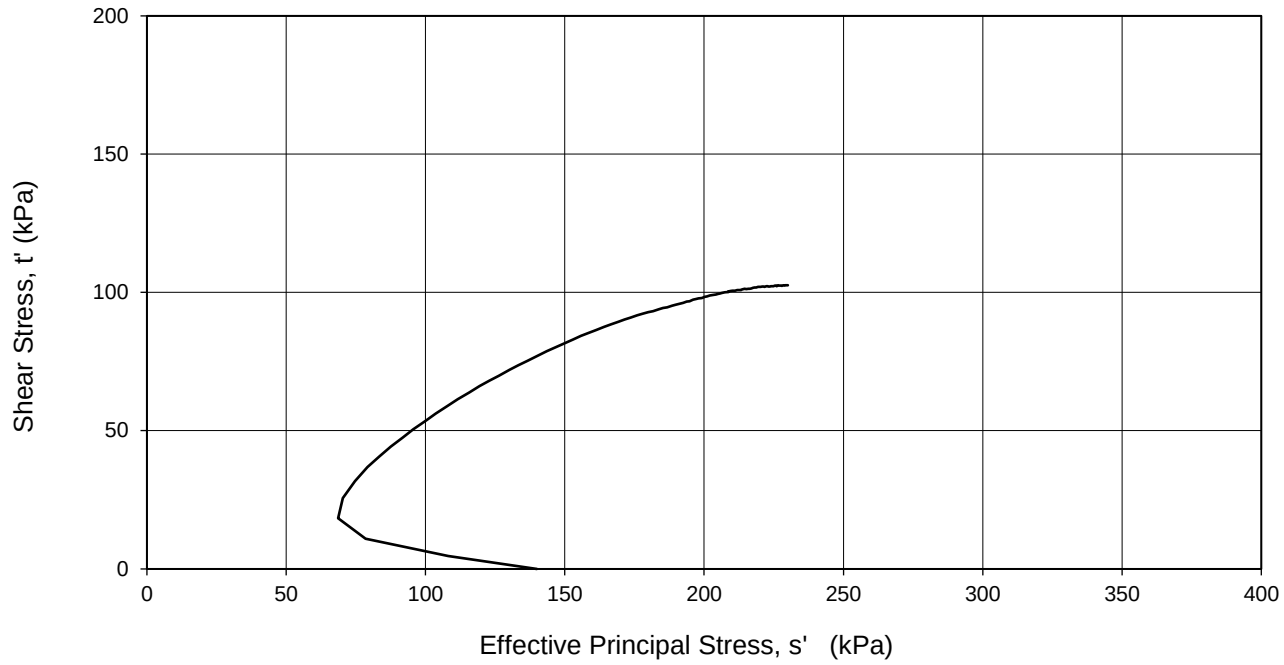
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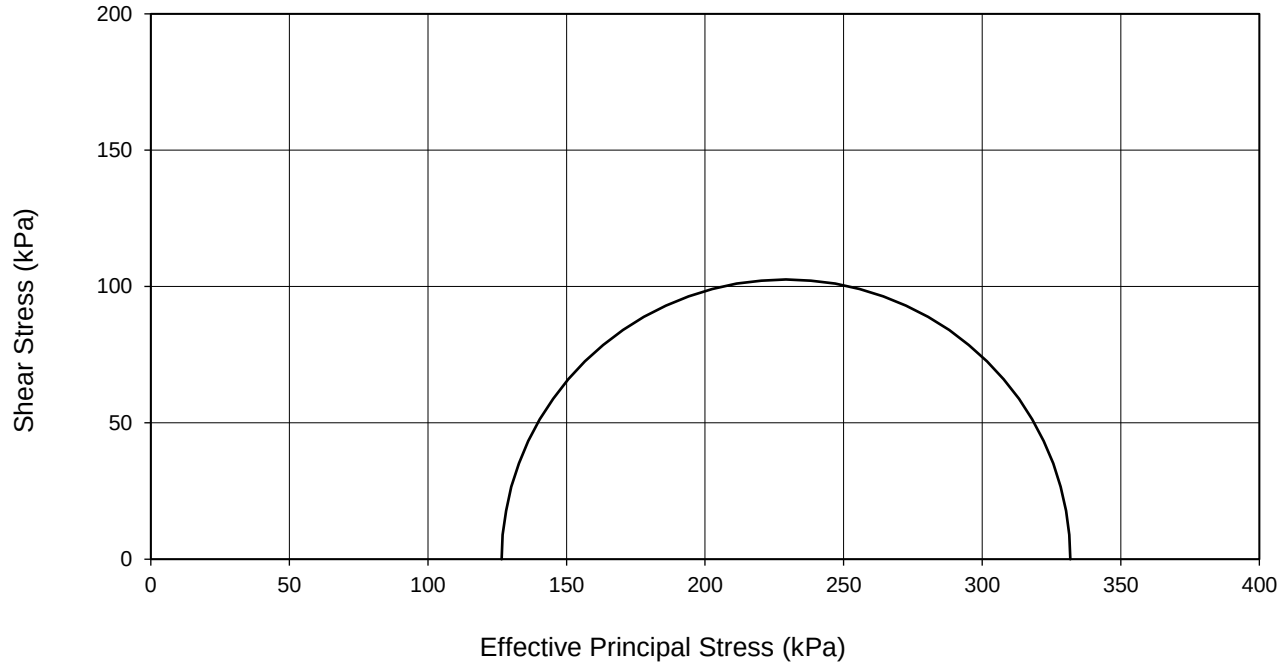
BS1377 : Part 8 : Clause 7

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

| | |
|---|---|
| Borehole No.: | BH301B |
| Sample No.: | WA1026358 |
| Depth (m): | 7.50-7.95 |

Description:
Stiff brown sandy slightly fine gravelly CLAY.




Checked and Approved by

P. Heritage

P Heritage - Project Manager
31/05/2022

Project Number:

**GEO / 35405**

Project Name:

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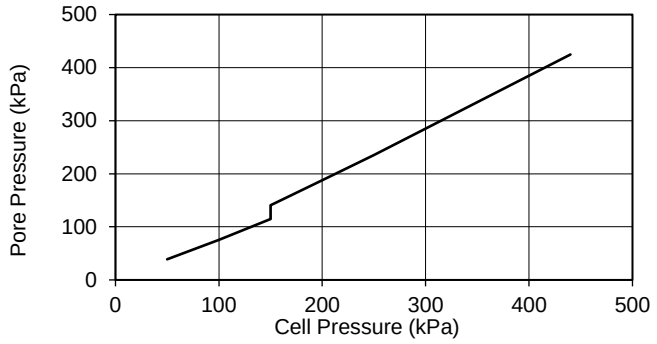
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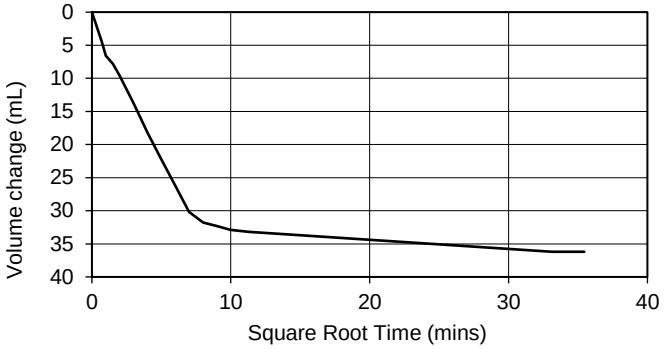
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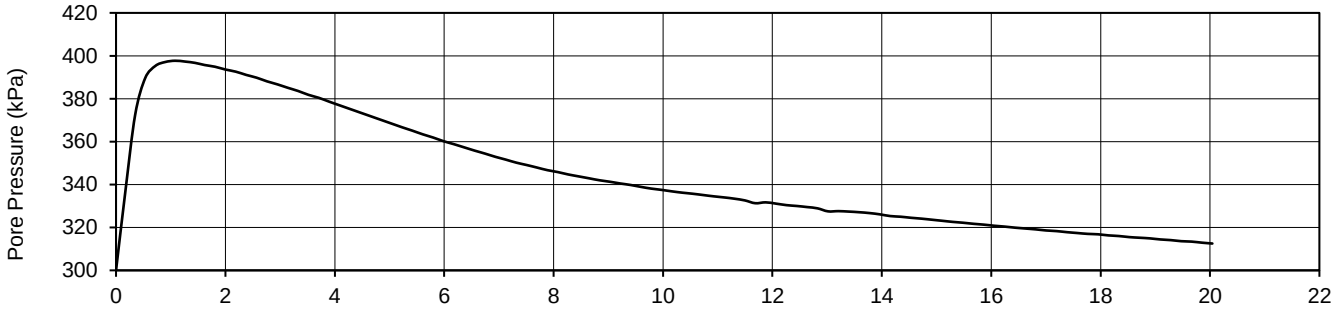
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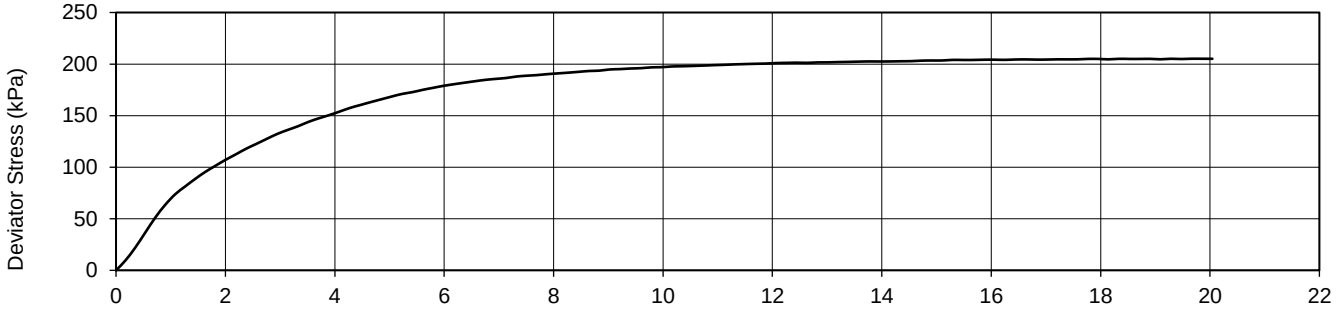
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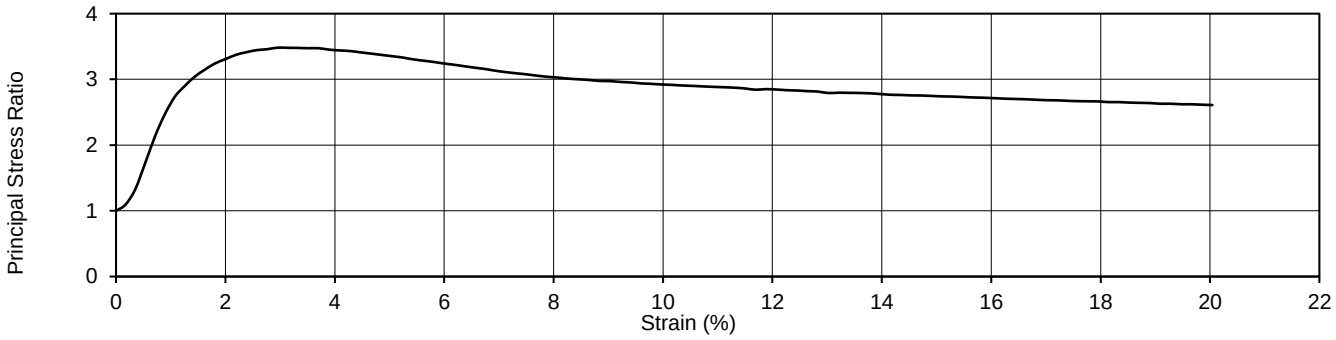
| | |
|---|---|
| Borehole No.: | BH301B |
| Sample No.: | WA1026358 |
| Depth (m): | 7.50-7.95 |




Checked and Approved by

P Heritage

P Heritage - Project Manager
31/05/2022

Project Number:

**GEO / 35405**

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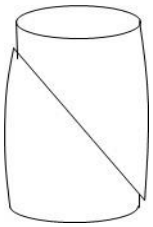
# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

| | |
|---|---|
| Borehole No.: | BH301B |
| Sample No.: | WA1026361 |
| Depth (m): | 12.00-12.45 |

Description:
Soft brown very sandy CLAY.

| | | |
|---|---|---|
| **SPECIMEN DETAILS** | | |
| Depth within original sample | | 20 mm from top |
| Orientation within original sample | | Vertical |
| **TEST DETAILS** | | |
| Specimen Type and Preparation | | U (Undisturbed) |
| Cell Preparation | | Checks performed in accordance with Clause 3.5 |
| Specimen Number | | **Single** |
| Initial Diameter | *mm* | 104.47 |
| Initial Length | *mm* | 195.11 |
| Initial Water Content | *%* | 20.9 |
| Initial Wet Density | *Mg/m³* | 2.12 |
| Drainage Conditions | | One end and radial boundary |
| **SATURATION STAGE** | | Method: Clause 5.2 |
| Final Cell Pressure | *kPa* | 520 |
| Final Pore Pressure | *kPa* | 517 |
| Final Pore Pressure Parameter B | | 1.00 |
| Duration | *day(s)* | 1 |
| **CONSOLIDATION STAGE** | | |
| Cell Pressure | *kPa* | 520 |
| Back Pressure | *kPa* | 300 |
| Effective Pressure | *kPa* | 220 |
| Final Pore Pressure | *kPa* | 300 |
| Final Pore Pressure Dissipation | *%* | 10 |
| Duration | *day(s)* | 2 |
| **SHEARING STAGE** | | |
| Cell Pressure | *kPa* | 520 |
| Rate of Axial Displacement | *mm/min* | 0.0020 |
| Initial Pore Pressure | *kPa* | 300 |
| Initial Effective Stress | *kPa* | 220 |
| **CONDITIONS AT FAILURE** | *criteria* | Maximum deviator stress |
| Pore Pressure | *kPa* | 335 |
| Minor Effective Principal Stress | *kPa* | 185 |
| Deviator Stress | *kPa* | 484 |
| Major Effective Principal Stress | *kPa* | 669 |
| Effective Principal Stress Ratio | | 3.62 |
| Pore Pressure Parameter A | | 0.07 |
| Axial Strain | *%* | 15.0 |
| Membrane & filter correction applied to Deviator Stress | *kPa* | 5 |
| Duration | *day(s)* | 10 |
| Final Water Content | *%* | 17.8 |
| Final Wet Density | *Mg/m³* | 2.11 |
| **EFFECTIVE STRESS PARAMETERS** | | |
| Cohesion | *kPa* | Not applicable |
| Angle of Shear Resistance | *degrees* | Not applicable |

**FAILURE SKETCH**



Checked and Approved by

P. Heritage

P Heritage - Project Manager
31/05/2022

Project Number:

**GEO / 35405**

Project Name:

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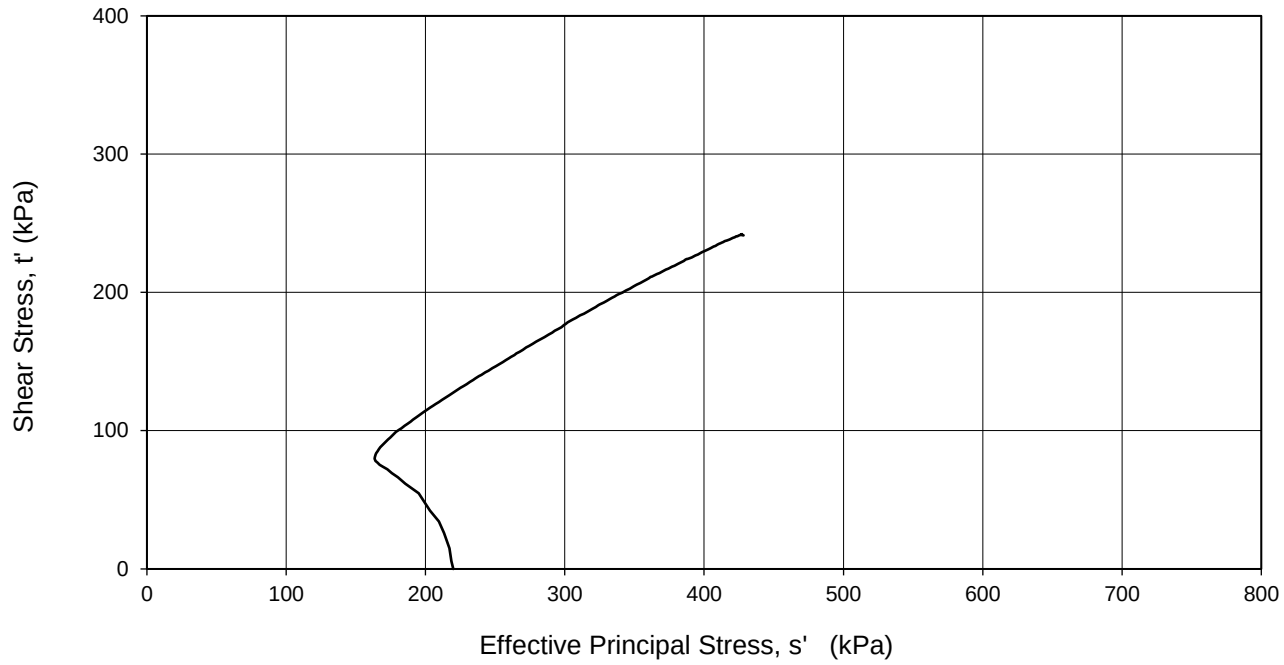
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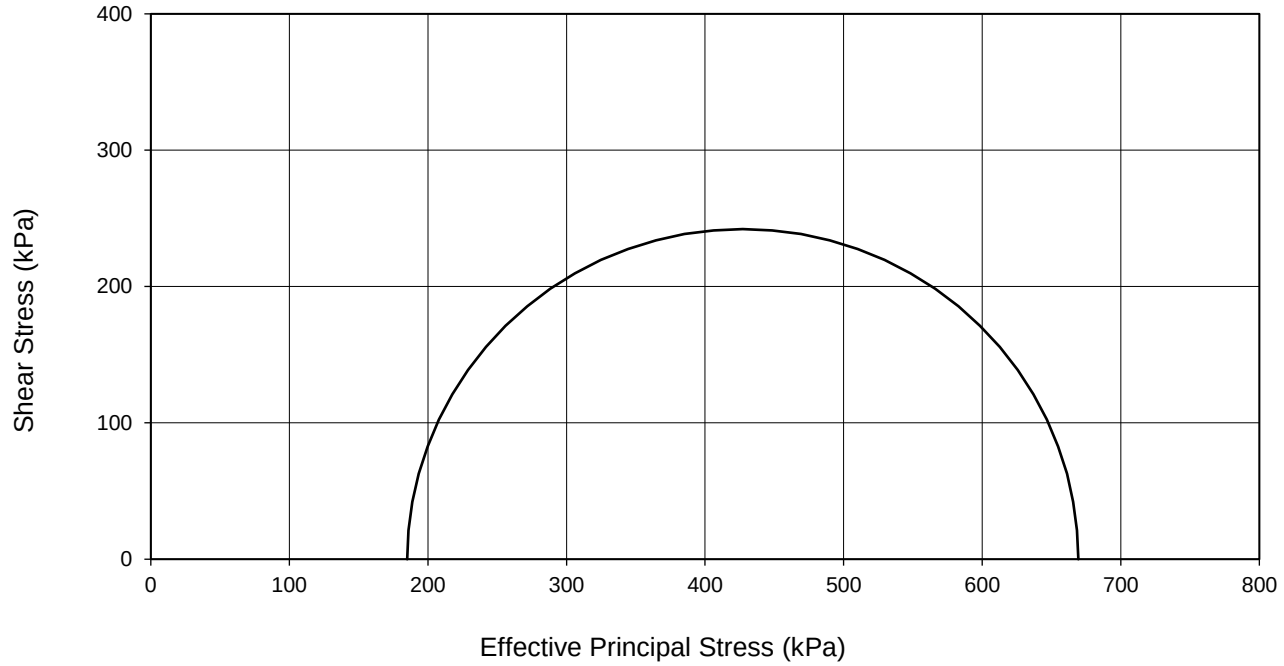
BS1377 : Part 8 : Clause 7

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST WITH MEASUREMENT OF PORE PRESSURE

| | |
|---|---|
| Borehole No.: | BH301B |
| Sample No.: | WA1026361 |
| Depth (m): | 12.00-12.45 |

Description:
Soft brown very sandy CLAY.




Checked and Approved by

P. Heritage

P Heritage - Project Manager
31/05/2022

Project Number:

**GEO / 35405**

Project Name:

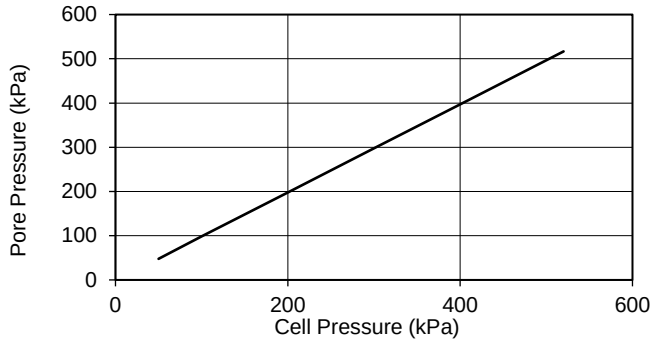
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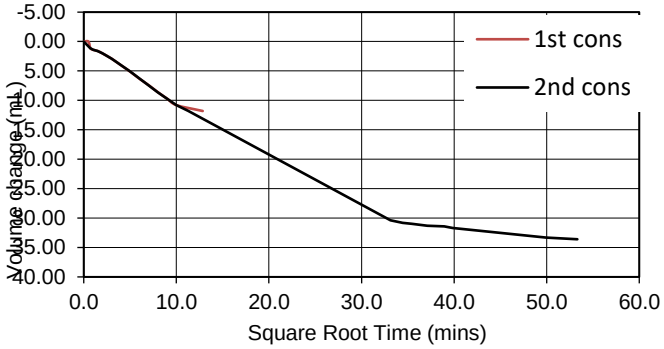
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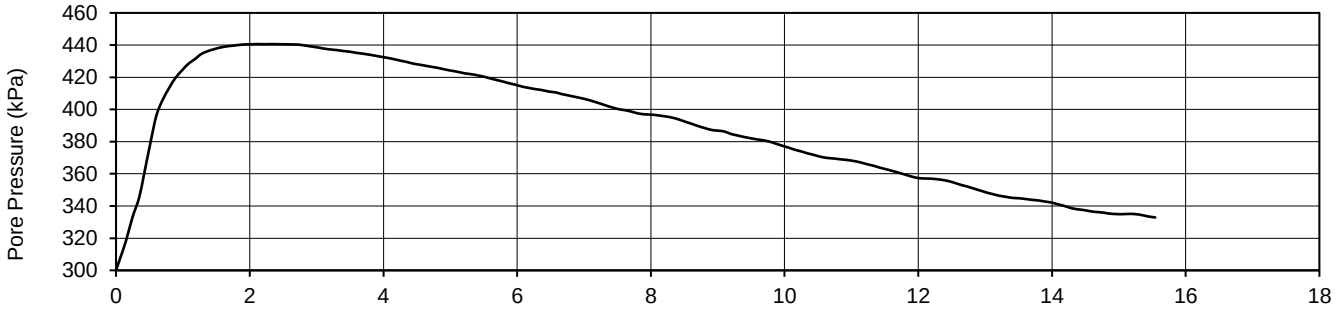
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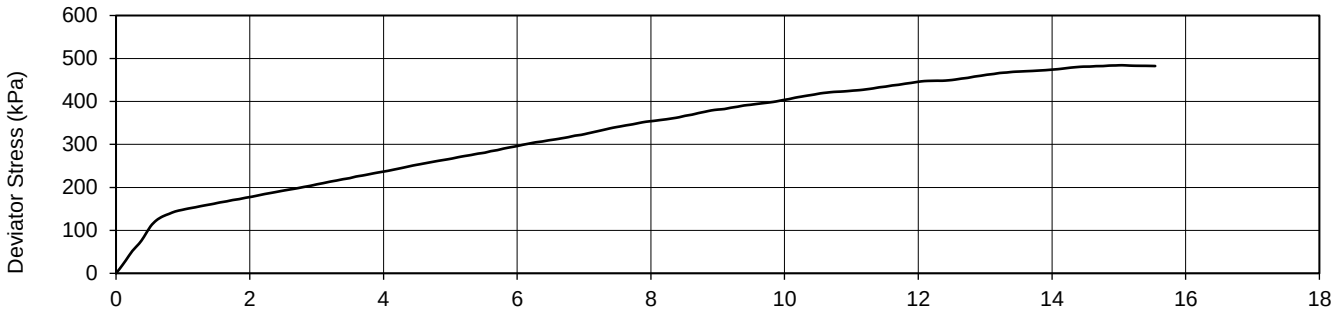
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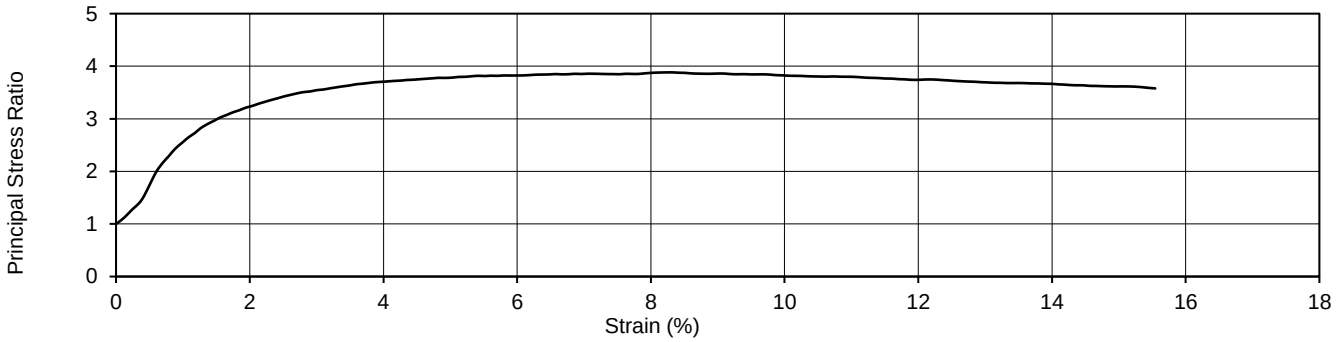
| | |
|---|---|
| Borehole No.: | BH301B |
| Sample No.: | WA1026361 |
| Depth (m): | 12.00-12.45 |




Checked and Approved by

P. Heritage

P Heritage - Project Manager
31/05/2022

Project Number:

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**Victoria North HIF Infrastructure & Enabling Works**

**BAX.326R**

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GEOLABS Limited
Bucknalls Lane
Garston
Watford
Hertfordshire
WD25 9XX
Tel: +44(0) 1923 892 190
Fax: +44(0) 1923 892 191
email: admin@geolabs.co.uk
web: www.geolabs.co.uk

**BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

07 June 2022
**Report No : GEO/35464/01**


For the attention of Mr J Ross

| | |
|---|---|
| Date samples received | 12/05/2022 |
| Date written instructions received | 12/05/2022 |
| Date testing commenced | 13/05/2022 |
| **Date of sample disposal** | **05/07/2022** |

Our ref **GEO / 35464**
Your Ref **BAX.326R**

Project **VICTORIA NORTH HIF INFRASTRUCTURE & ENABLING WORKS**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

**LABORATORY TEST REPORT**

| Item No | Test Quantity | Description |
|---|---|---|
| 1 | 3 | Consolidated Undrained Triaxial Compression<br>BH315 / 2.00-2.45 / WA1029635 / U<br>BH315 / 4.00-4.45 / WA1029639 / U<br>BH315 / 7.50-7.95 / WA1029646 / U |

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**

P Heritage

P Heritage
**Project Manager**

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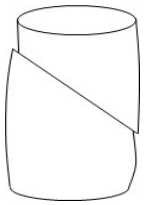
BS EN ISO 17892-9 : 2018 Clause 6.4

# Isotropically Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

| | |
|---|---|
| Borehole No.: | BH315 |
| Sample No.: | WA1029635 |
| Depth (m): | 2.00-2.45 |

Description:
Soft brown mottled black slightly fine gravelly CLAY.

| | | |
|---|---|---|
| **SPECIMEN DETAILS** | | |
| Depth within original sample | | 20 mm from top |
| Orientation within original sample | | Vertical |
| **TEST DETAILS** | | |
| Specimen Type and Preparation | | U (Undisturbed) |
| Cell Preparation | | Checks performed in accordance with Clause 6.1 |
| Specimen Number | | **Single** |
| Initial Diameter | *mm* | 103.17 |
| Initial Length | *mm* | 201.40 |
| Initial Water Content | *%* | 18.1 |
| Initial Bulk Density | *Mg/m³* | 2.14 |
| Initial Dry Density | *Mg/m³* | 1.81 |
| Drainage Conditions | | One end and radial boundary |
| **SATURATION STAGE** | | |
| Final Cell Pressure | *kPa* | 340 |
| Final Pore Pressure | *kPa* | 330 |
| Final Pore Pressure Parameter B | | 0.95 |
| Duration | *day(s)* | 1 |
| **CONSOLIDATION STAGE** | | |
| Cell Pressure | *kPa* | 340 |
| Back Pressure | *kPa* | 300 |
| Effective Pressure | *kPa* | 40 |
| Final Pore Pressure | *kPa* | 300 |
| Final Pore Pressure Dissipation | *%* | 100 |
| Duration | *day(s)* | 2 |
| **SHEARING STAGE** | | |
| Cell Pressure | *kPa* | 340 |
| Rate of Vertical Strain | *%/hr* | 0.12 |
| Initial Pore Pressure | *kPa* | 300 |
| Initial Effective Stress | *kPa* | 40 |
| **CONDITIONS AT FAILURE** | *criteria* | Maximum deviator stress |
| Pore Pressure | *kPa* | 289 |
| Minor Effective Principal Stress | *kPa* | 51 |
| Deviator Stress | *kPa* | 99 |
| Major Effective Principal Stress | *kPa* | 150 |
| Effective Principal Stress Ratio | | 2.92 |
| Pore Pressure Parameter A | | -0.11 |
| Axial Strain | *%* | 15.0 |
| Membrane & filter correction applied to Deviator Stress | *kPa* | 5 |
| Duration | *day(s)* | 5 |
| Final Water Content | *%* | 17.9 |
| Final Wet Density | *Mg/m³* | 2.19 |
| **EFFECTIVE STRESS PARAMETERS** | | |
| Cohesion | *kPa* | Not applicable |
| Angle of Shear Resistance | *degrees* | Not applicable |
| **FAILURE SKETCH** | | |



Checked and Approved by

P Heritage

P Heritage - Project Manager
07/06/2022

Project Number:

**GEO / 35464**

Project Name:

**Victoria North HIF Infrastructure & Enabling Works**
**BAX.326R**

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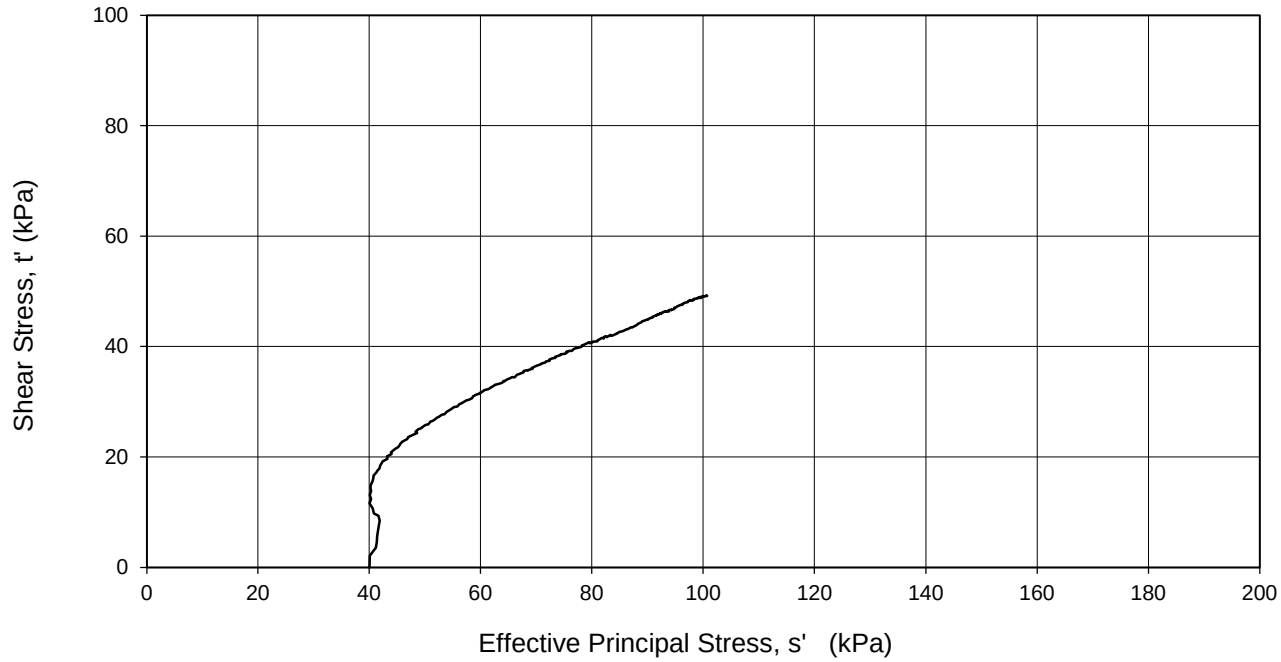
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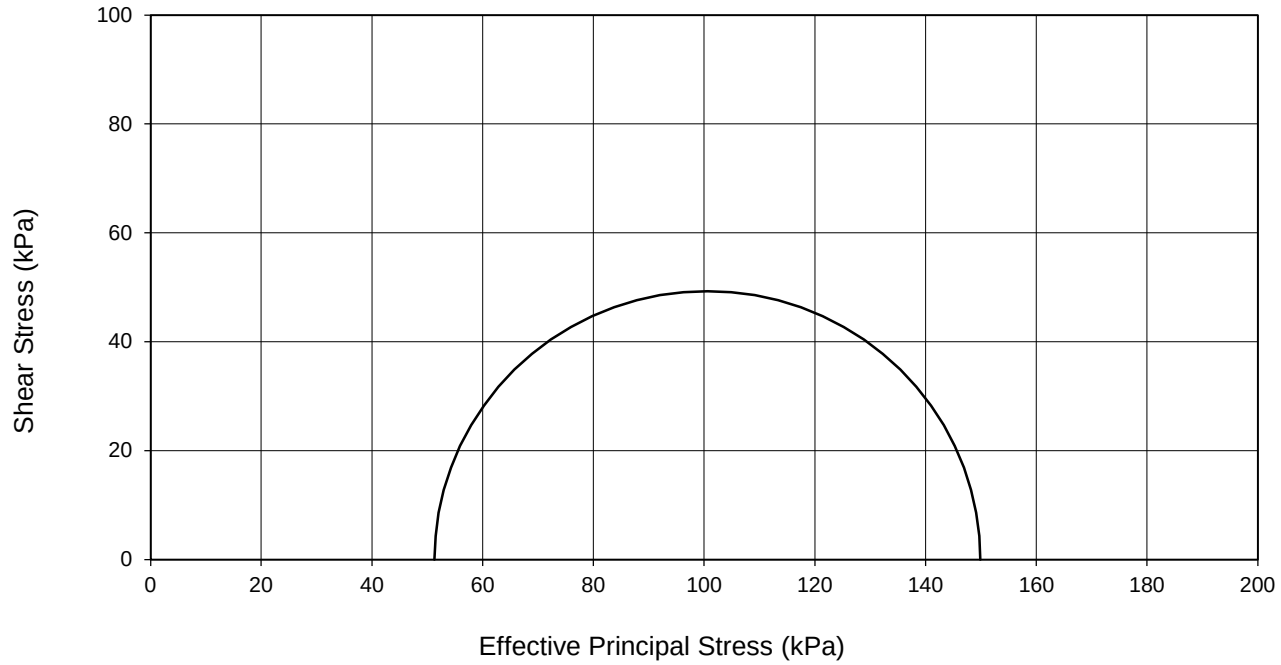
BS EN ISO 17892-9 : 2018 Clause 6.4

# Isotropically Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

| | |
|---|---|
| Borehole No.: | BH315 |
| Sample No.: | WA1029635 |
| Depth (m): | 2.00-2.45 |

Description:
Soft brown mottled black slightly fine gravelly CLAY.




Checked and Approved by

P Heritage

P Heritage - Project Manager
07/06/2022

Project Number:

**GEO / 35464**

Project Name:

**Victoria North HIF Infrastructure & Enabling WorksBAX.326R**

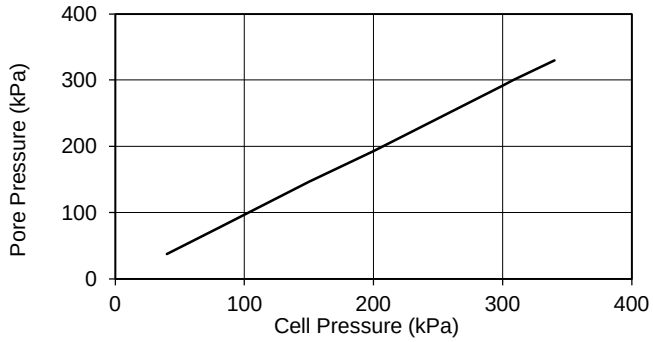
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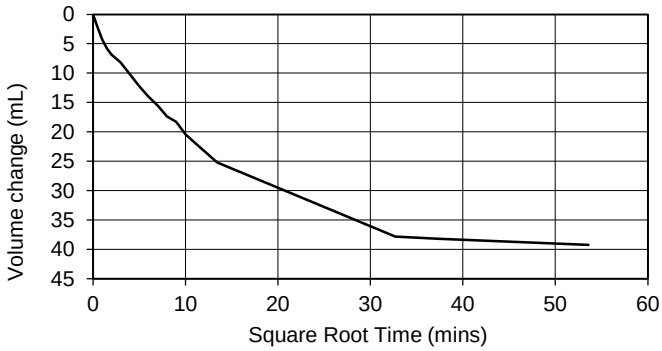
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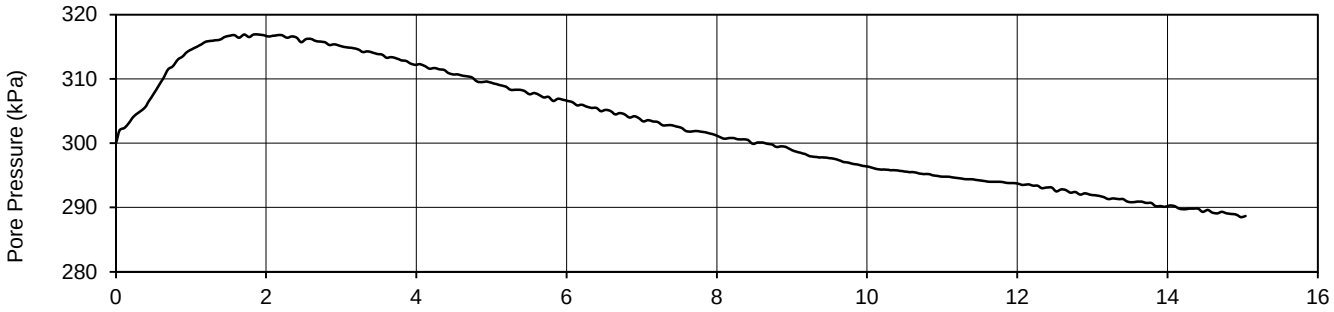
BS EN ISO 17892-9 : 2018 Clause 6.4

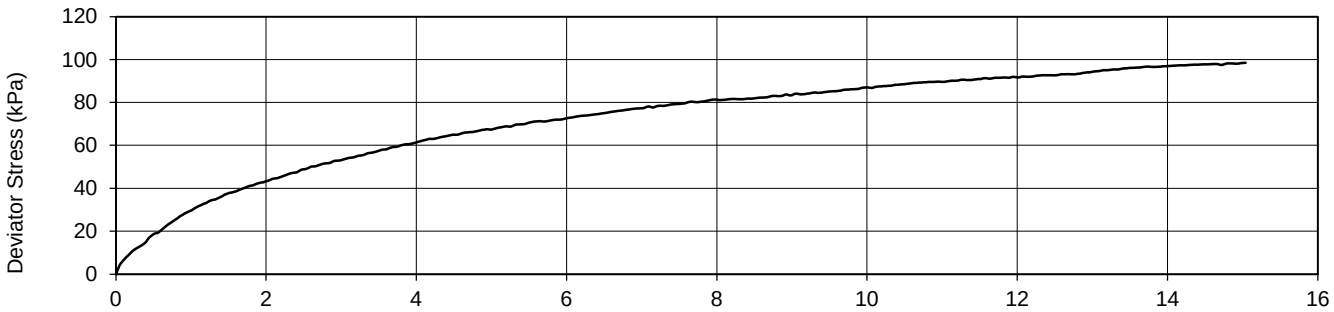
# Isotropically Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

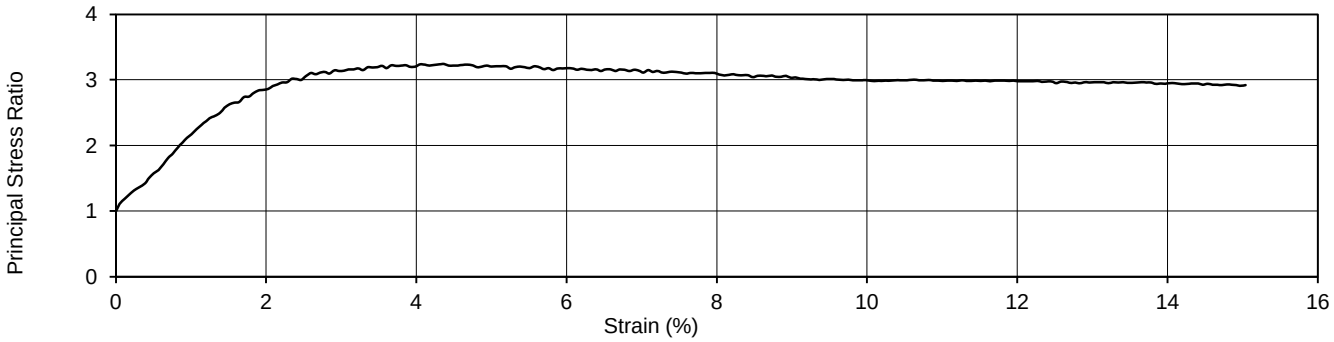
| | |
|---|---|
| Borehole No.: | BH315 |
| Sample No.: | WA1029635 |
| Depth (m): | 2.00-2.45 |




Checked and Approved by

P Heritage

P Heritage - Project Manager
07/06/2022

Project Number:

**GEO / 35464**

Project Name:

**Victoria North HIF Infrastructure & Enabling WorksBAX.326R**

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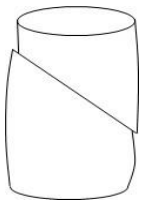
BS EN ISO 17892-9 : 2018 Clause 6.4

# Isotropically Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

| | |
|---|---|
| Borehole No.: | BH315 |
| Sample No.: | WA1029639 |
| Depth (m): | 4.00-4.45 |

Description:
Soft brown gravelly fine sandy CLAY. Gravel is fine to medium.

| | | |
|---|---|---|
| **SPECIMEN DETAILS** | | |
| Depth within original sample | | 20 mm from top |
| Orientation within original sample | | Vertical |
| **TEST DETAILS** | | |
| Specimen Type and Preparation | | U (Undisturbed) |
| Cell Preparation | | Checks performed in accordance with Clause 6.1 |
| Specimen Number | | **Single** |
| Initial Diameter | *mm* | 102.41 |
| Initial Length | *mm* | 202.26 |
| Initial Water Content | *%* | 24.5 |
| Initial Bulk Density | *Mg/m³* | 2.06 |
| Initial Dry Density | *Mg/m³* | 1.66 |
| Drainage Conditions | | One end and radial boundary |
| **SATURATION STAGE** | | |
| Final Cell Pressure | *kPa* | 380 |
| Final Pore Pressure | *kPa* | 371 |
| Final Pore Pressure Parameter B | | 0.95 |
| Duration | *day(s)* | 1 |
| **CONSOLIDATION STAGE** | | |
| Cell Pressure | *kPa* | 380 |
| Back Pressure | *kPa* | 300 |
| Effective Pressure | *kPa* | 80 |
| Final Pore Pressure | *kPa* | 300 |
| Final Pore Pressure Dissipation | *%* | 100 |
| Duration | *day(s)* | 2 |
| **SHEARING STAGE** | | |
| Cell Pressure | *kPa* | 380 |
| Rate of Vertical Strain | *%/hr* | 0.17 |
| Initial Pore Pressure | *kPa* | 300 |
| Initial Effective Stress | *kPa* | 80 |
| **CONDITIONS AT FAILURE** | *criteria* | Maximum deviator stress |
| Pore Pressure | *kPa* | 311 |
| Minor Effective Principal Stress | *kPa* | 69 |
| Deviator Stress | *kPa* | 113 |
| Major Effective Principal Stress | *kPa* | 182 |
| Effective Principal Stress Ratio | | 2.63 |
| Pore Pressure Parameter A | | 0.10 |
| Axial Strain | *%* | 15.0 |
| Membrane & filter correction applied to Deviator Stress | *kPa* | 5 |
| Duration | *day(s)* | 4 |
| Final Water Content | *%* | 22.7 |
| Final Wet Density | *Mg/m³* | 2.12 |
| **EFFECTIVE STRESS PARAMETERS** | | |
| Cohesion | *kPa* | Not applicable |
| Angle of Shear Resistance | *degrees* | Not applicable |
| **FAILURE SKETCH** | | |



Checked and Approved by

P. Heritage

P Heritage - Project Manager
07/06/2022

Project Number:

**GEO / 35464**

Project Name:

**Victoria North HIF Infrastructure & Enabling Works**
**BAX.326R**

GEOLABS

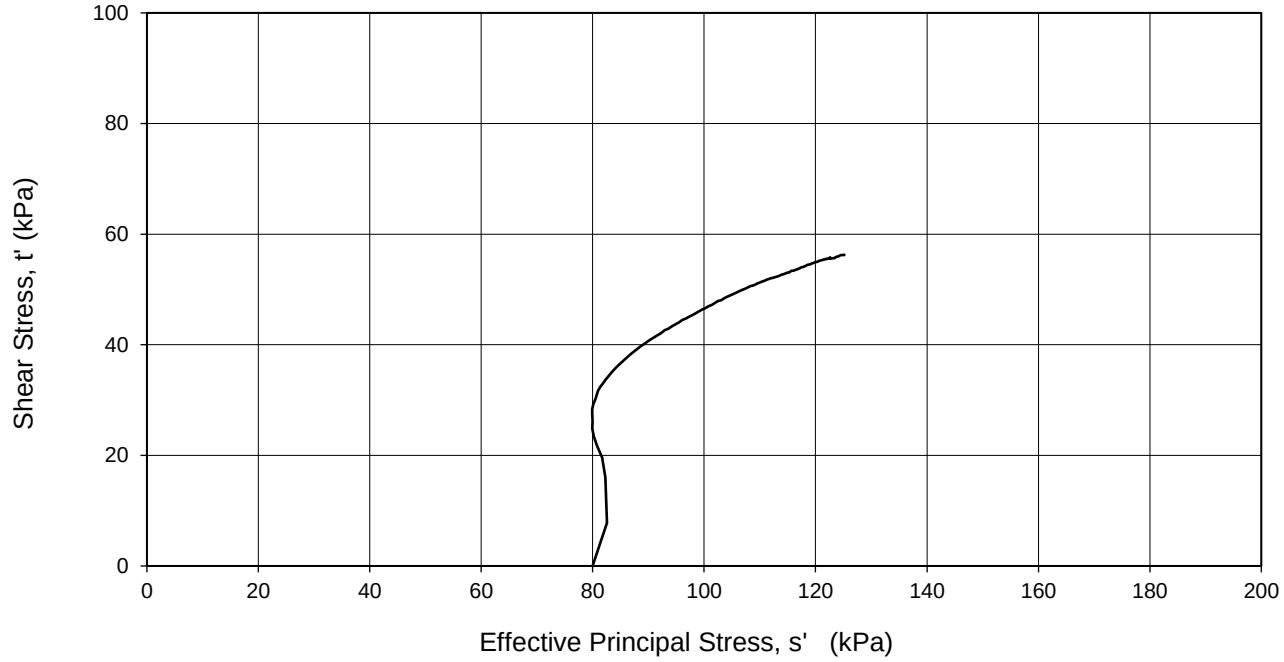
UKAS TESTING 1982

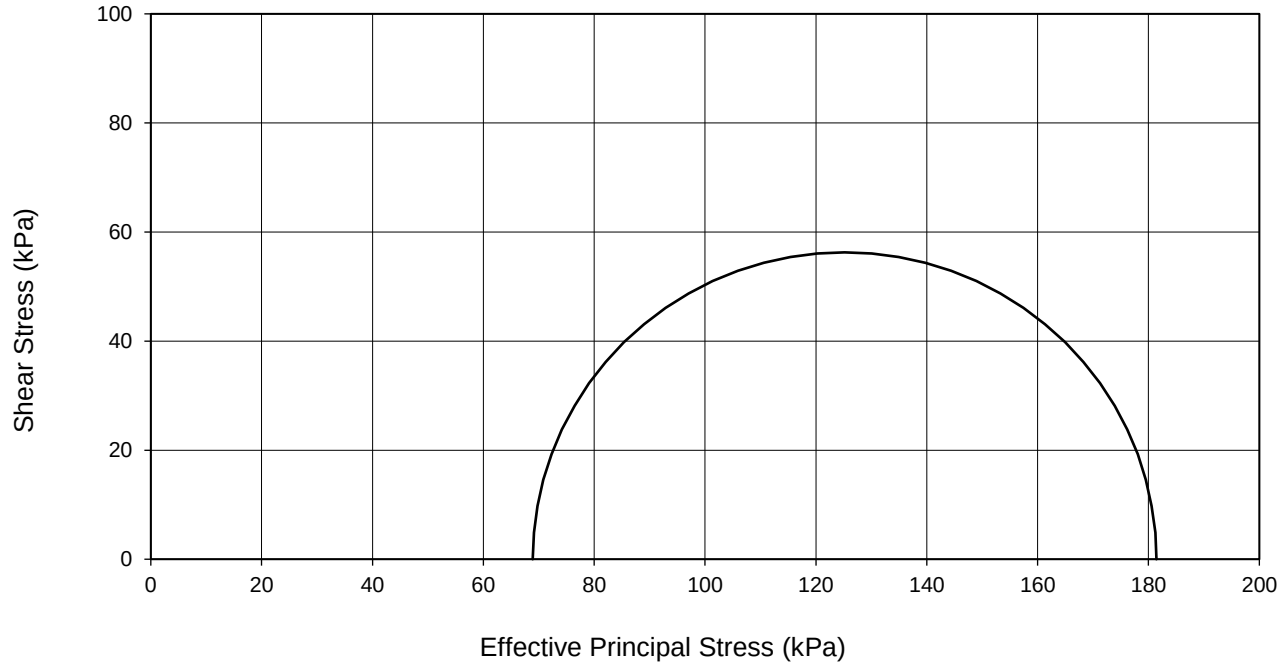
BS EN ISO 17892-9 : 2018 Clause 6.4

# Isotropically Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

| | |
|---|---|
| Borehole No.: | BH315 |
| Sample No.: | WA1029639 |
| Depth (m): | 4.00-4.45 |

Description:
Soft brown gravelly fine sandy CLAY. Gravel is fine to medium.




Checked and Approved by

P. Heritage

P Heritage - Project Manager
07/06/2022

Project Number:

**GEO / 35464**

Project Name:

**Victoria North HIF Infrastructure & Enabling WorksBAX.326R**

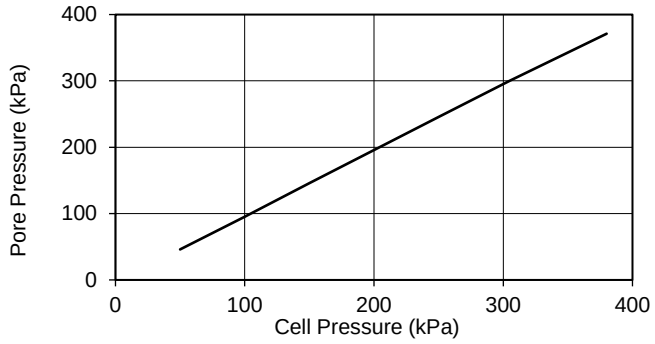
GEOLABS

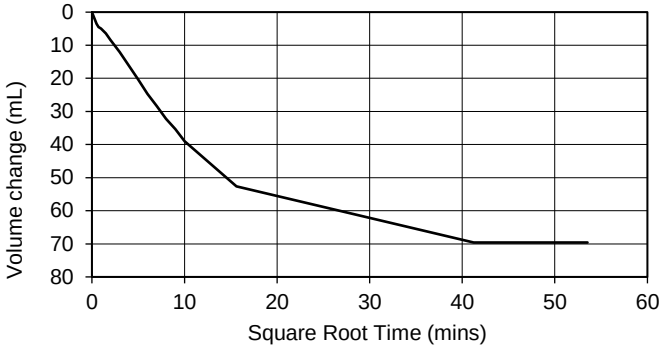
UKAS TESTING 1982

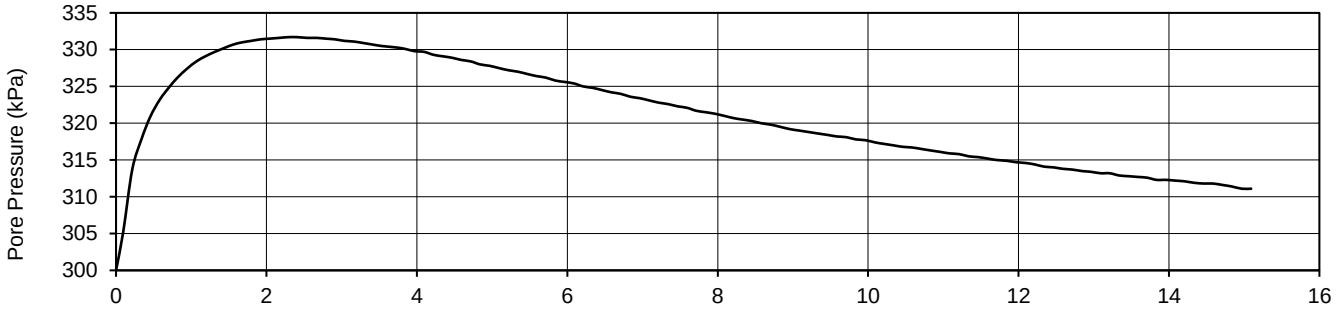
BS EN ISO 17892-9 : 2018 Clause 6.4

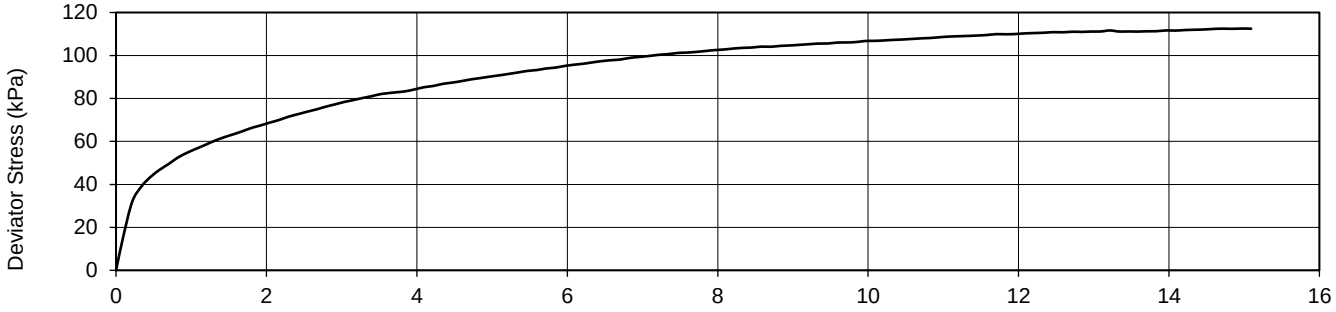
# Isotropically Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

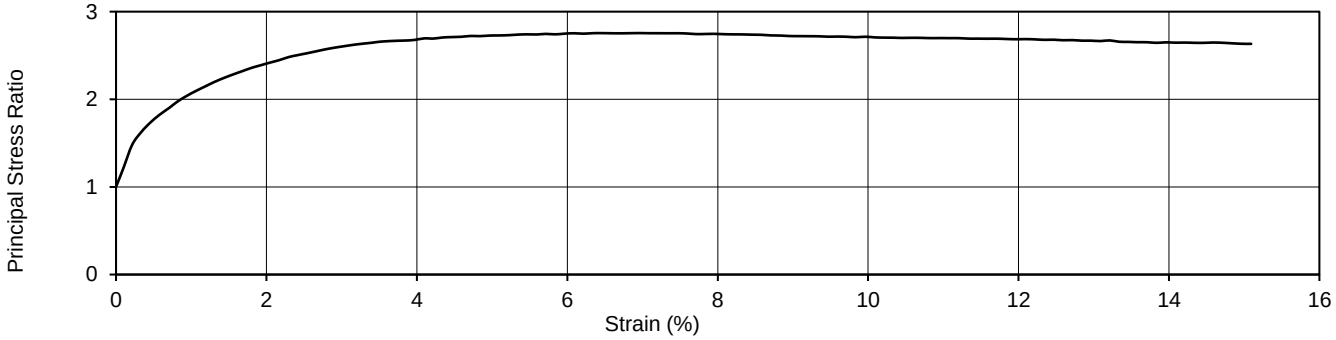
| | |
|---|---|
| Borehole No.: | BH315 |
| Sample No.: | WA1029639 |
| Depth (m): | 4.00-4.45 |




Checked and Approved by

P Heritage

P Heritage - Project Manager
07/06/2022

Project Number:

**GEO / 35464**

Project Name:

**Victoria North HIF Infrastructure & Enabling WorksBAX.326R**

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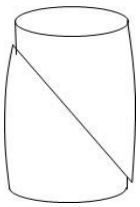
BS EN ISO 17892-9 : 2018 Clause 6.4

# Isotropically Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

| | |
|---|---|
| Borehole No.: | BH315 |
| Sample No.: | WA1029646 |
| Depth (m): | 7.50-7.95 |

Description:
Firm brown slightly gravelly CLAY. Gravel is fine to coarse.

| | | |
|---|---|---|
| **SPECIMEN DETAILS** | | |
| Depth within original sample | | 20 mm from top |
| Orientation within original sample | | Vertical |
| **TEST DETAILS** | | |
| Specimen Type and Preparation | | U (Undisturbed) |
| Cell Preparation | | Checks performed in accordance with Clause 6.1 |
| Specimen Number | | **Single** |
| Initial Diameter | *mm* | 101.40 |
| Initial Length | *mm* | 200.44 |
| Initial Water Content | *%* | 20.3 |
| Initial Bulk Density | *Mg/m³* | 2.12 |
| Initial Dry Density | *Mg/m³* | 1.76 |
| Drainage Conditions | | One end and radial boundary |
| **SATURATION STAGE** | | |
| Final Cell Pressure | *kPa* | 450 |
| Final Pore Pressure | *kPa* | 435 |
| Final Pore Pressure Parameter B | | 0.97 |
| Duration | *day(s)* | 2 |
| **CONSOLIDATION STAGE** | | |
| Cell Pressure | *kPa* | 450 |
| Back Pressure | *kPa* | 300 |
| Effective Pressure | *kPa* | 150 |
| Final Pore Pressure | *kPa* | 300 |
| Final Pore Pressure Dissipation | *%* | 100 |
| Duration | *day(s)* | 1 |
| **SHEARING STAGE** | | |
| Cell Pressure | *kPa* | 450 |
| Rate of Vertical Strain | *%/hr* | 0.21 |
| Initial Pore Pressure | *kPa* | 300 |
| Initial Effective Stress | *kPa* | 150 |
| **CONDITIONS AT FAILURE** | *criteria* | Maximum deviator stress |
| Pore Pressure | *kPa* | 324 |
| Minor Effective Principal Stress | *kPa* | 126 |
| Deviator Stress | *kPa* | 238 |
| Major Effective Principal Stress | *kPa* | 364 |
| Effective Principal Stress Ratio | | 2.88 |
| Pore Pressure Parameter A | | 0.10 |
| Axial Strain | *%* | 15.1 |
| Membrane & filter correction applied to Deviator Stress | *kPa* | 5 |
| Duration | *day(s)* | 4 |
| Final Water Content | *%* | 20.2 |
| Final Wet Density | *Mg/m³* | 2.19 |
| **EFFECTIVE STRESS PARAMETERS** | | |
| Cohesion | *kPa* | Not applicable |
| Angle of Shear Resistance | *degrees* | Not applicable |
| **FAILURE SKETCH** | | |



Checked and Approved by

P. Heritage

P Heritage - Project Manager
07/06/2022

Project Number:

**GEO / 35464**

Project Name:

**Victoria North HIF Infrastructure & Enabling Works**
**BAX.326R**

GEOLABS

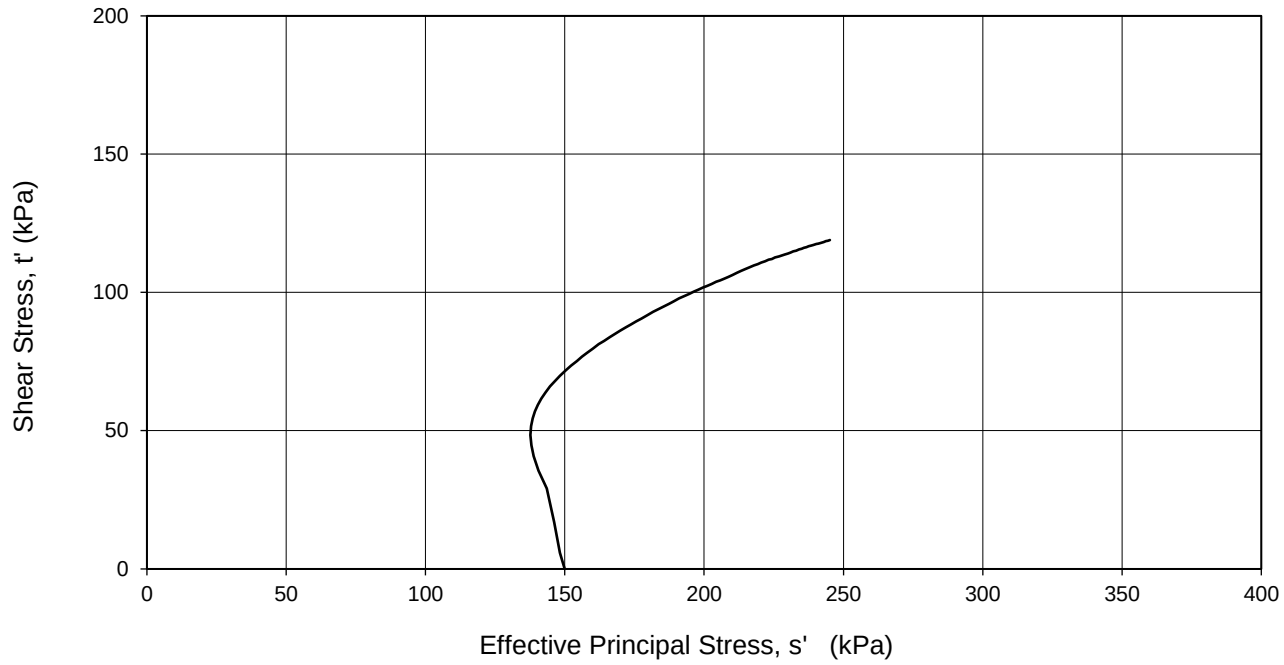
UKAS TESTING 1982

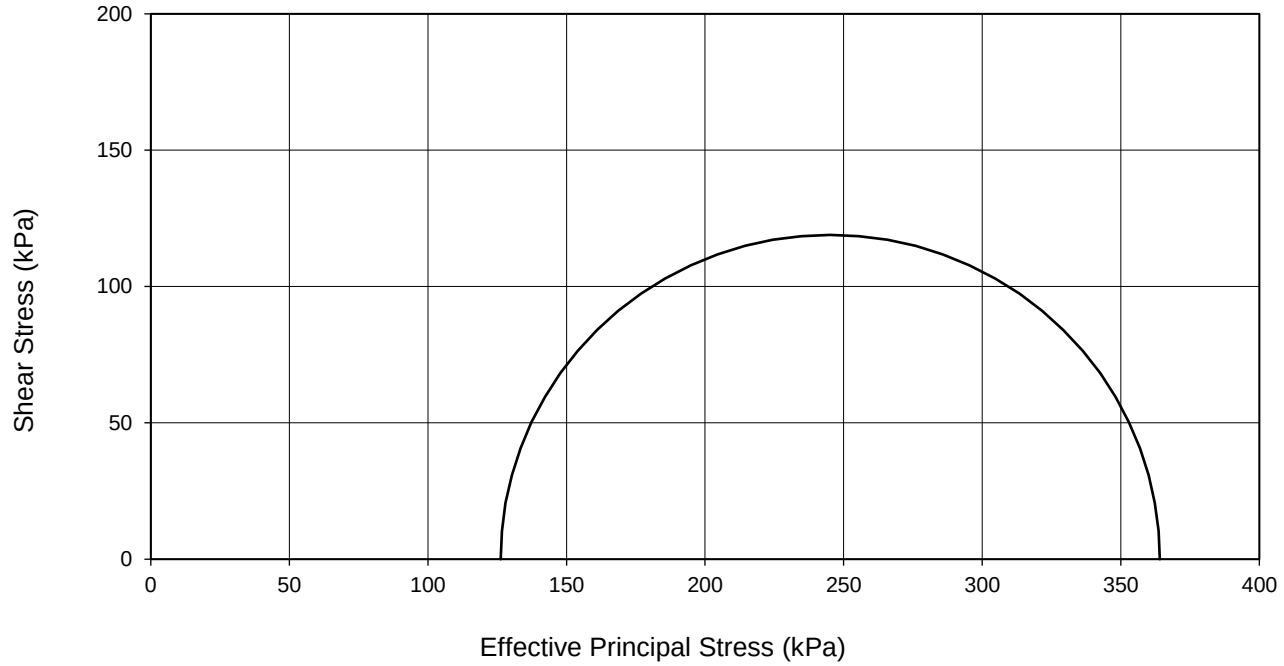
BS EN ISO 17892-9 : 2018 Clause 6.4

# Isotropically Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

| | |
|---|---|
| Borehole No.: | BH315 |
| Sample No.: | WA1029646 |
| Depth (m): | 7.50-7.95 |

Description:
Firm brown slightly gravelly CLAY. Gravel is fine to coarse.




Checked and Approved by

P. Heritage

P Heritage - Project Manager
07/06/2022

Project Number:

**GEO / 35464**

Project Name:

**Victoria North HIF Infrastructure & Enabling WorksBAX.326R**

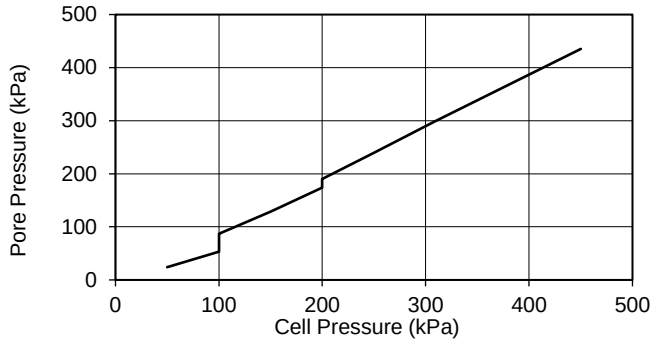
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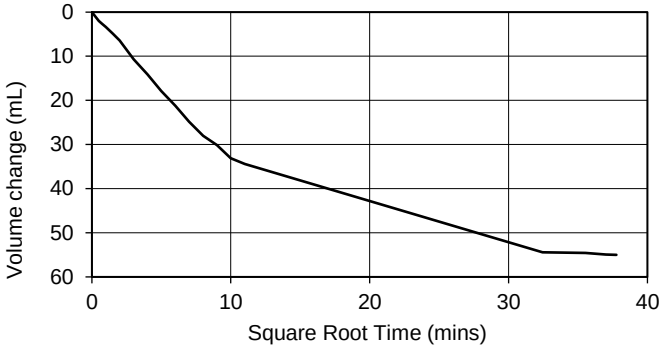
UKAS TESTING 1982

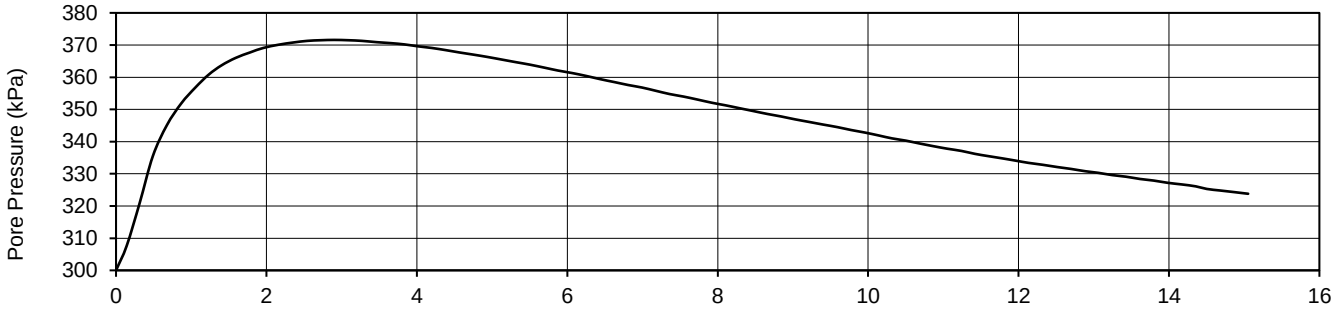
BS EN ISO 17892-9 : 2018 Clause 6.4

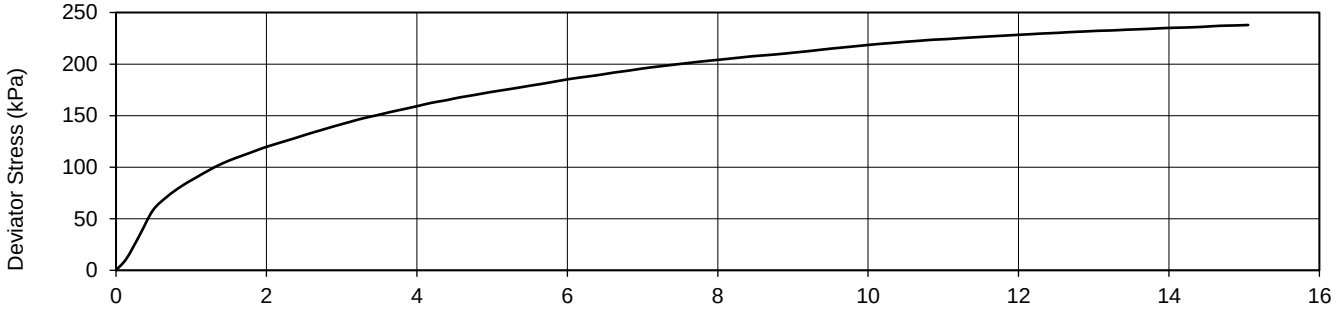
# Isotropically Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

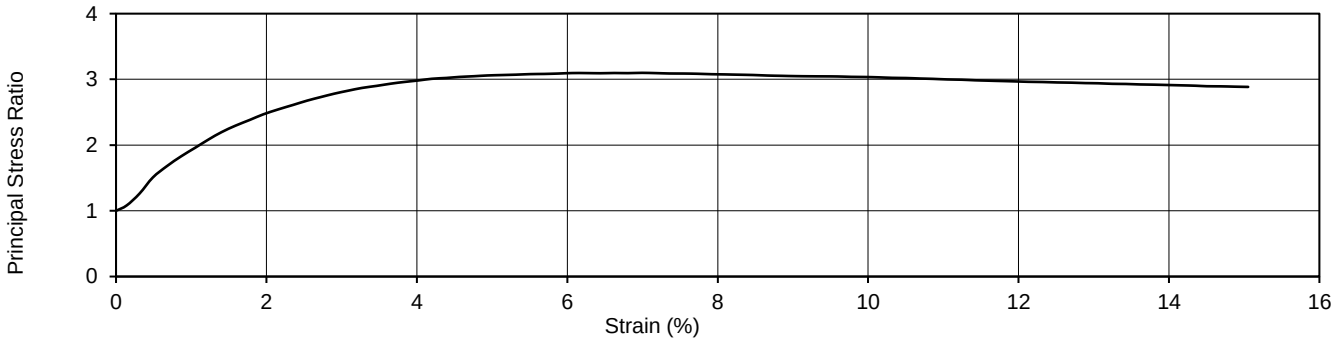
| | |
|---|---|
| Borehole No.: | BH315 |
| Sample No.: | WA1029646 |
| Depth (m): | 7.50-7.95 |




Checked and Approved by

P Heritage

P Heritage - Project Manager
07/06/2022

Project Number:

**GEO / 35464**

Project Name:

**Victoria North HIF Infrastructure & Enabling WorksBAX.326R**

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# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

## LABORATORY TESTING OF SOIL

### Introduction

We refer to samples taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

### Material & Source

| | | |
|---|---|---|
| Sample Reference | : | See Report Plates |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | See Report Plates |
| Description | : | See Page 2 to Page 3 inclusive |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |

### Test Results

As Detailed On Page 2 to Page 4 inclusive

### Comments

The results contained in this report relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

### Remarks

**Approved for Issue**

T McLelland (Director)

Date 27/04/2022

UKAS TESTING
2643

MATtest Limited
materials testing & consultancy

| BOREHOLE | SAMPLE | DEPTH (m) | SAMPLE DESCRIPTION |
|---|---|---|---|
| BH304 | WA1030262 | 9.00-9.45 | Black clayey fine to coarse ASHFILL. |
| BH304 | WA1030268 | 12.00-12.45 | Dark brown / grey silty fine to coarse SAND and GRAVEL with silty clay. |
| BH305 | B | 3.00-3.45 | Black fine to medium SAND and GRAVEL / ASHFILL. |
| BH305 | B | 5.00-5.45 | Black fine to medium SAND and GRAVEL / ASHFILL. |
| BH305 | B | 7.50-7.95 | Black fine to coarse ASHFILL / SAND and GRAVEL. |

## SUMMARY OF SAMPLE DESCRIPTIONS

MATtest Limited
materials testing & consultancy

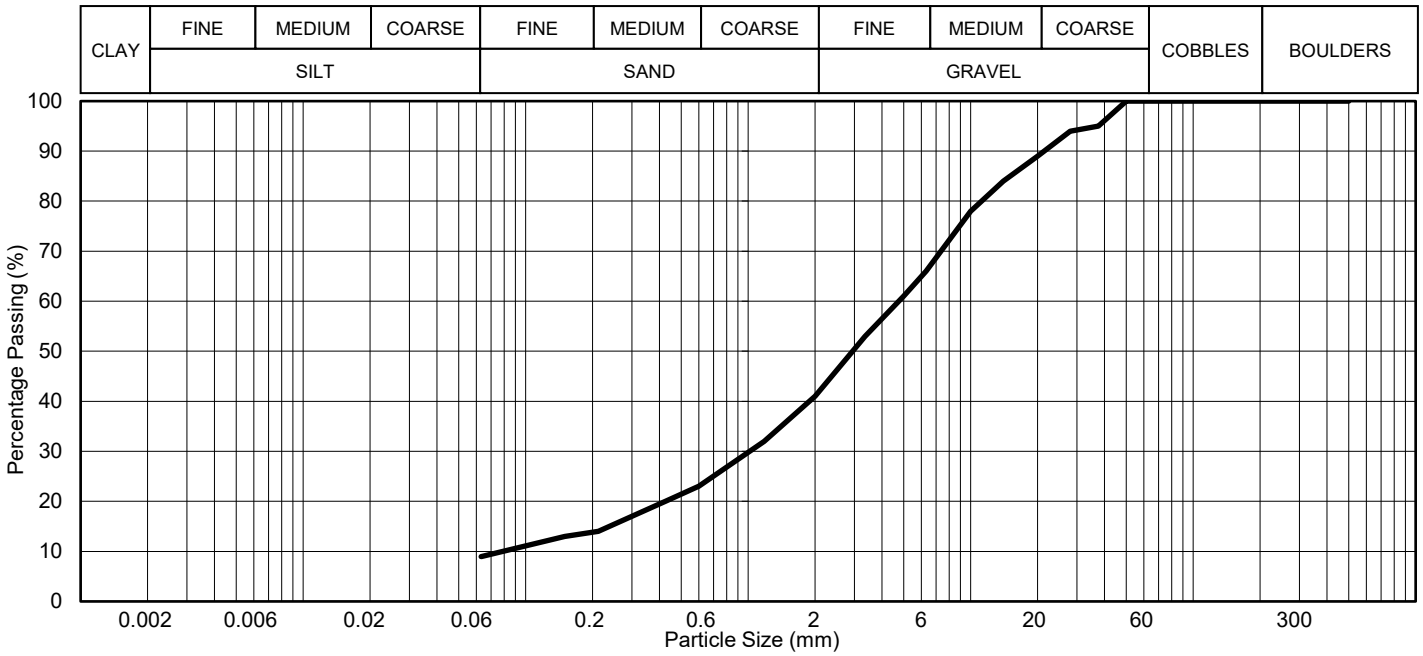
| TRIAL PIT | SAMPLE | DEPTH (m) | SAMPLE DESCRIPTION |
|---|---|---|---|
| TP304 | WA1031264 | 2.90 | Dark grey / brown clayey fine to coarse ASHFILL with black staining and silty clay. |
| TP305 | WA1031277 | 3.00 | Dark grey / brown fine to coarse ASHFILL. |
| TP306 | WA1031280 | 1.00 | Dark grey / brown fine to coarse ASHFILL. |
| TP308 | WA1031265 | 0.30 | Black very clayey fine to coarse ASHFILL. |
| TP309 | WA1031289 | 3.00 | Brown silty fine to coarse SAND. |

## SUMMARY OF SAMPLE DESCRIPTIONS

**BAM RITCHIES**
**VICTORIA NORTH HIF INFRASTRUCTURE & ENABLING WORKS**

MATtest Limited
materials testing & consultancy

| | |
|---|---|
| Borehole | TP306 |
| Sample | WA1031280 |
| Depth (m) | 1.00 |




| SIEVING | | | | SEDIMENTATION | |
|---|---|---|---|---|---|
| Sieve Size (mm) | Percentage Passing (%) | Specification Not Applicable Lower % | Specification Not Applicable Upper % | Particle Size (mm) | Percentage Passing (%) |
| 500.0 | 100 | - | - | 0.020 | |
| 300.0 | 100 | - | - | 0.006 | |
| 125.0 | 100 | - | - | 0.002 | |
| 90.0 | 100 | - | - | | |
| 75.0 | 100 | - | - | | |
| 63.0 | 100 | - | - | | |
| 50.0 | 100 | - | - | | |
| 37.5 | 95 | - | - | | |
| 28.0 | 94 | - | - | | |
| 20.0 | 89 | - | - | | |
| 14.0 | 84 | - | - | | |
| 10.0 | 78 | - | - | | |
| 6.30 | 66 | - | - | | |
| 5.00 | 61 | - | - | | |
| 3.35 | 53 | - | - | | |
| 2.00 | 41 | - | - | | |
| 1.18 | 32 | - | - | | |
| 0.600 | 23 | - | - | | |
| 0.425 | 20 | - | - | | |
| 0.300 | 17 | - | - | | |
| 0.212 | 14 | - | - | | |
| 0.150 | 13 | - | - | | |
| 0.063 | 9 | - | - | | |

**GRADING CLASSIFICATION (SHW TABLE 6/2)**

-

Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.

**PERCENTAGE SOIL TYPES**

| CLAY | SILT ₸ | SAND | GRAVEL | COBBLES |
|---|---|---|---|---|
| / | 9 | 32 | 59 | 0 |

**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**

| D10 | D60 | Specification |
|---|---|---|
| - | - | |
| UNIFORMITY COEFFICIENT - | | - |

**Remarks**

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

**SIEVE ANALYSIS - BS 1377 : Part 2 : 1990 : CLAUSE 9.2**

# LABORATORY TEST CERTIFICATE

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10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01-1**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH304, WA1030262, 9.00-9.45m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH304, WA1030262, 9.00-9.45m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Black clayey fine to coarse ASHFILL. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

Date 27/04/2022

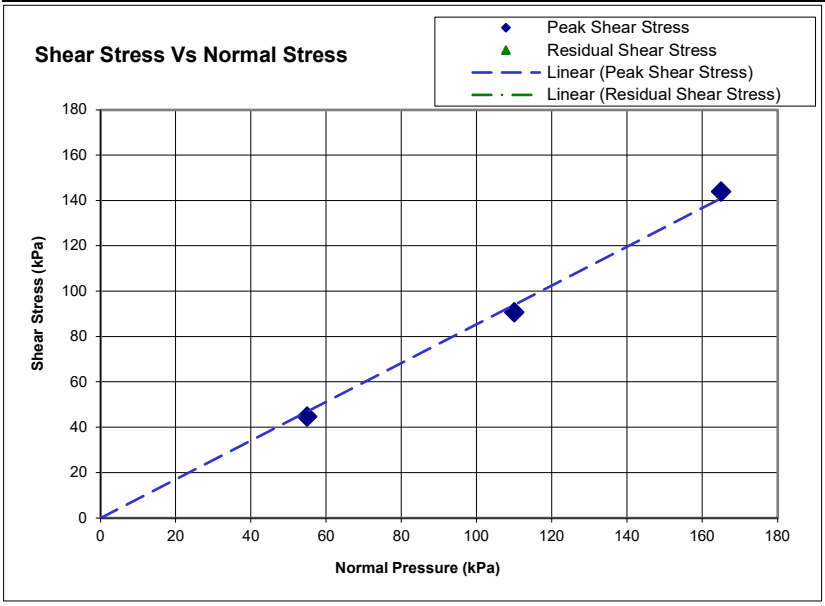
UKAS TESTING
2643

MATtest Limited
materials testing & consultancy

**Certificate No :** **22/393 - 01-1**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.1 | 23.1 | 23.1 | | |
| | Moisture Content | % | 28 | 29 | 29 | | |
| | Bulk Density | $Mg/m^3$ | 1.63 | 1.63 | 1.64 | | |
| | Dry Density | $Mg/m^3$ | 1.27 | 1.27 | 1.27 | | |
| | Voids Ratio | | 1.090 | 1.085 | 1.084 | | |
| | Degree of Saturation | % | 69 | 70 | 70 | | |
| Consol | Consolidation / Normal Stress | kPa | 55 | 110 | 165 | | |
| | Change in height | mm | 0.63 | 0.96 | 1.03 | | |
| | Voids ratio | | 1.033 | 0.999 | 0.991 | | |
| Final | Voids ratio | | 1.002 | 1.031 | 0.933 | | |
| | Moisture Content | % | 32 | 32 | 31 | | |
| | Saturation | % | 85 | 83 | 87 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 3.94 | 3.43 | 6.21 | | |
| | Shear stress | kPa | 44.709 | 90.741 | 143.922 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |



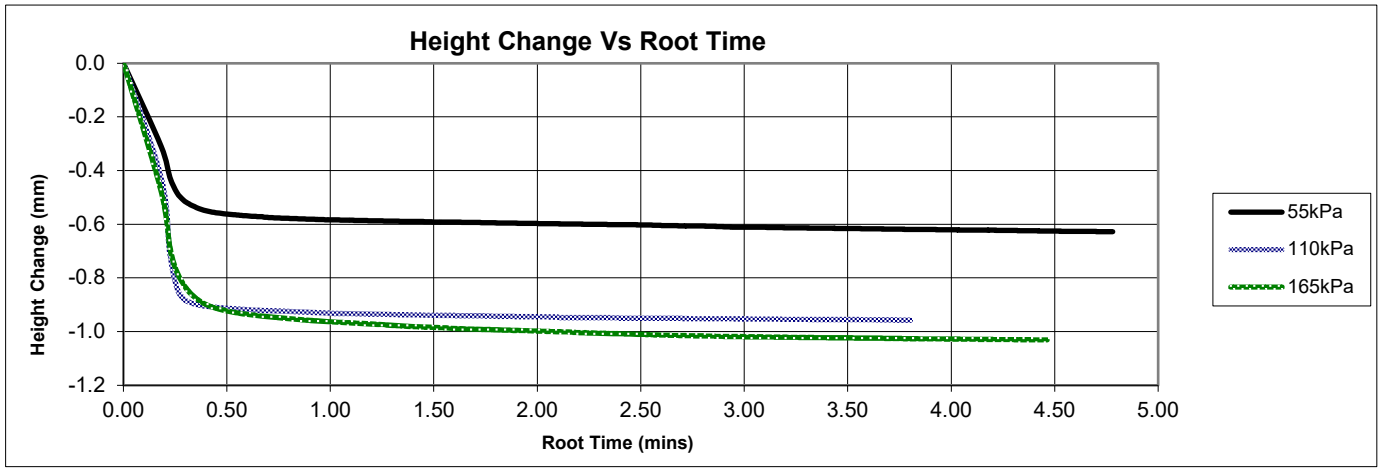

**Shear Strength Parameters**

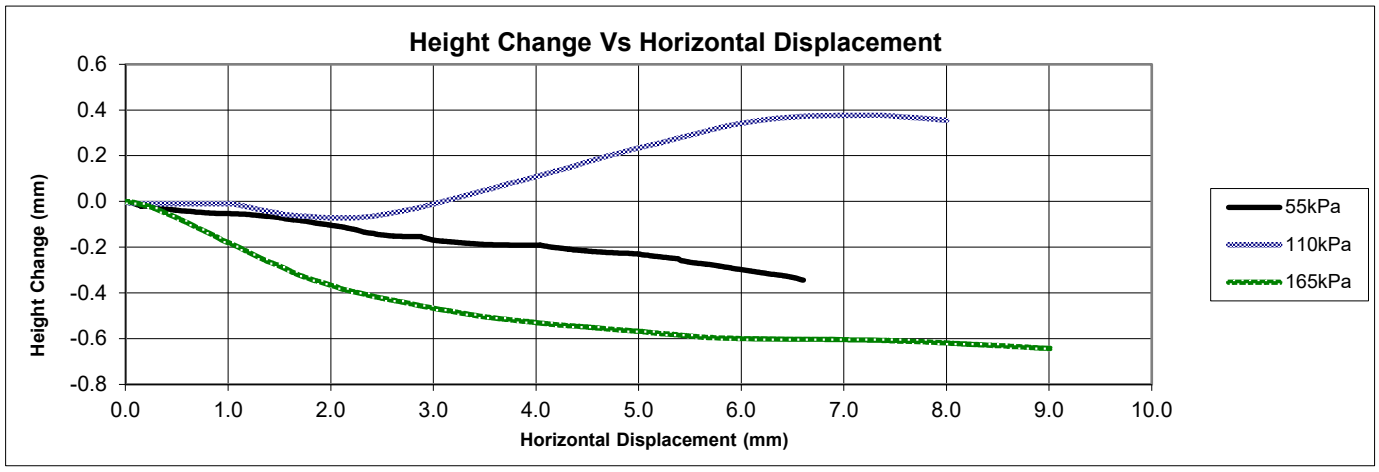
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | -6.1 | 0.0 |
| $\phi'$ | degrees | 42.0 | 40.5 |

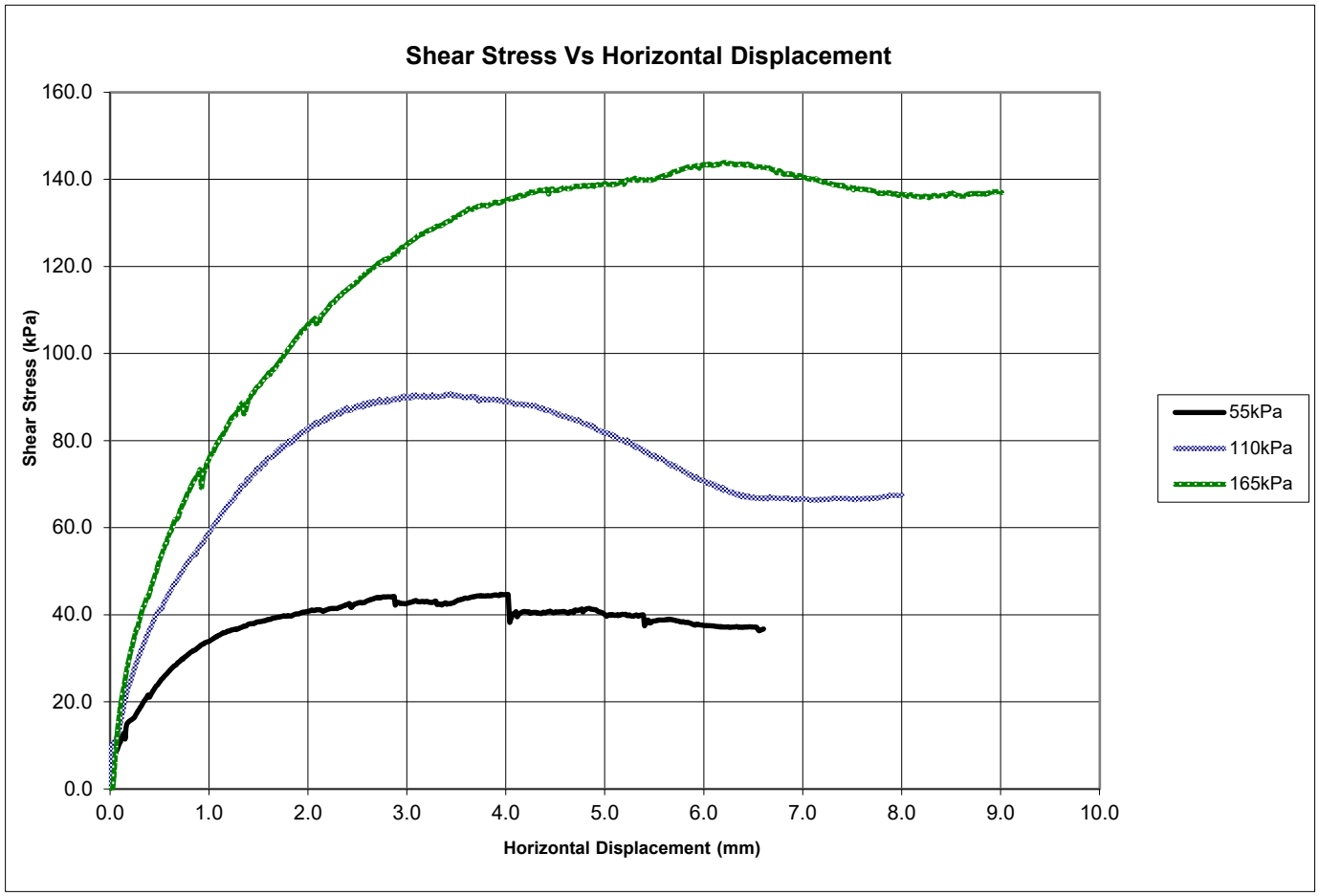
| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

Note - The automated regression line results in a negative c' value, therefore a manual line has been used which assumes a c' value of 0kPa

**Certificate No :** **22/393 - 01-1**



# LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01-2**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH304, WA1030268, 12.00-12.45m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH304, WA1030268, 12.00-12.45m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Dark brown / grey silty fine to coarse SAND and GRAVEL with silty clay. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

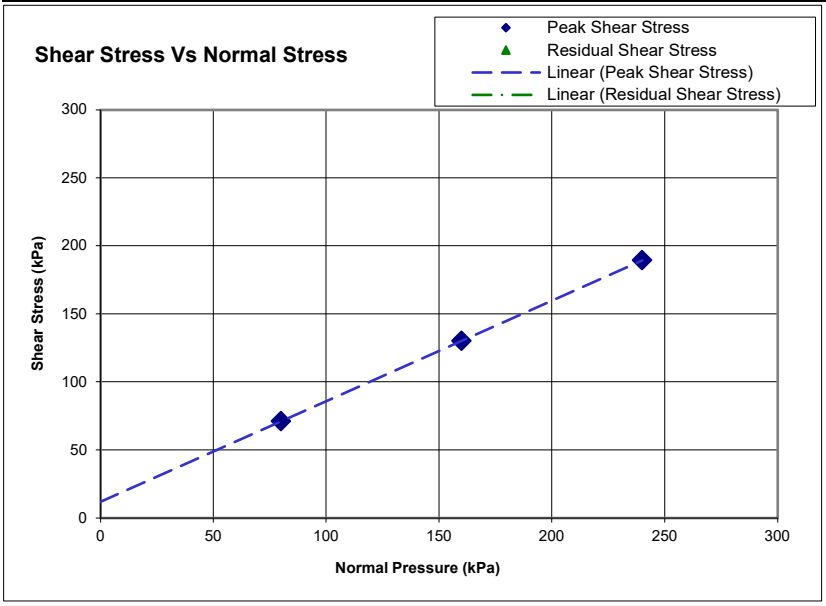
Date 27/04/2022

2643

**Certificate No :** **22/393 - 01-2**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.1 | 23.1 | 23.1 | | |
| | Moisture Content | % | 20 | 20 | 20 | | |
| | Bulk Density | $Mg/m^3$ | 1.90 | 1.89 | 1.90 | | |
| | Dry Density | $Mg/m^3$ | 1.58 | 1.57 | 1.58 | | |
| | Voids Ratio | | 0.676 | 0.683 | 0.674 | | |
| | Degree of Saturation | % | 78 | 78 | 78 | | |
| Consol | Consolidation / Normal Stress | kPa | 80 | 160 | 240 | | |
| | Change in height | mm | 1.39 | 2.01 | 2.20 | | |
| | Voids ratio | | 0.575 | 0.537 | 0.515 | | |
| Final | Voids ratio | | 0.556 | 0.510 | 0.489 | | |
| | Moisture Content | % | 21 | 21 | 21 | | |
| | Saturation | % | 100 | 100 | 100 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 3.44 | 5.60 | 4.38 | | |
| | Shear stress | kPa | 71.107 | 130.179 | 189.389 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

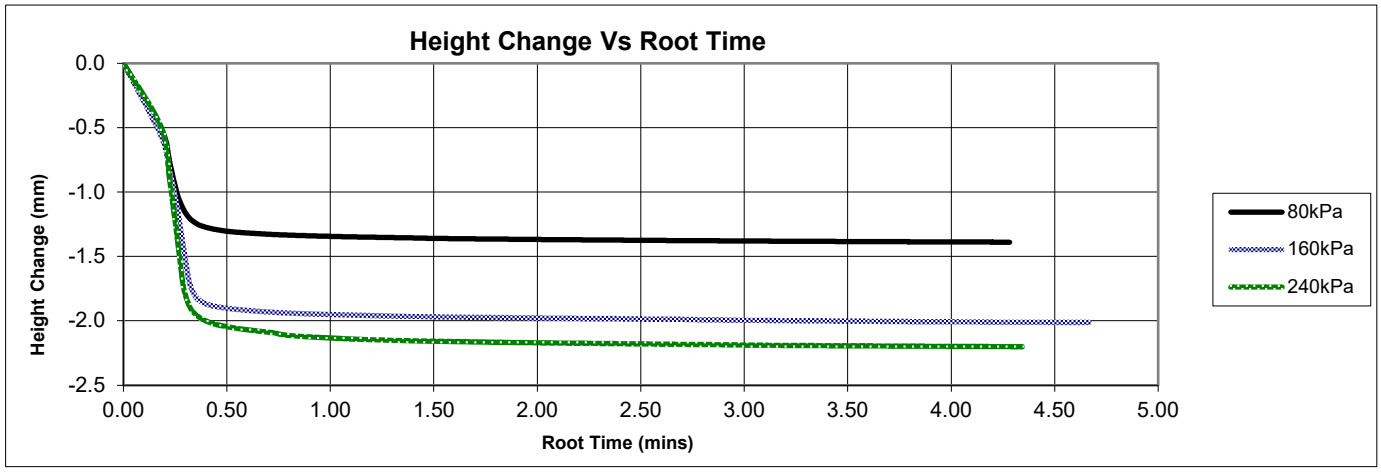


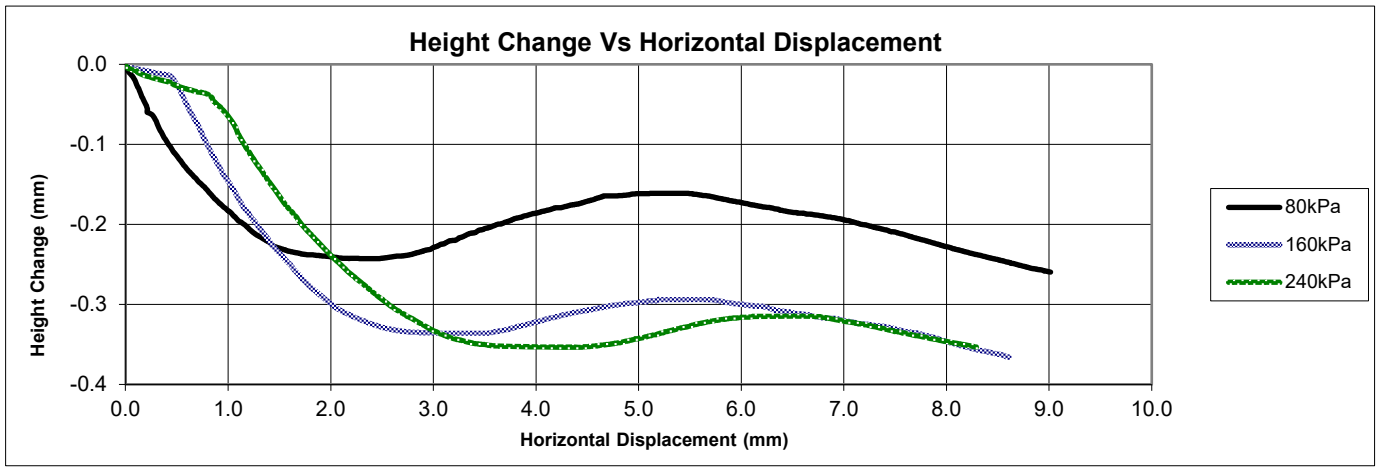

**Shear Strength Parameters**

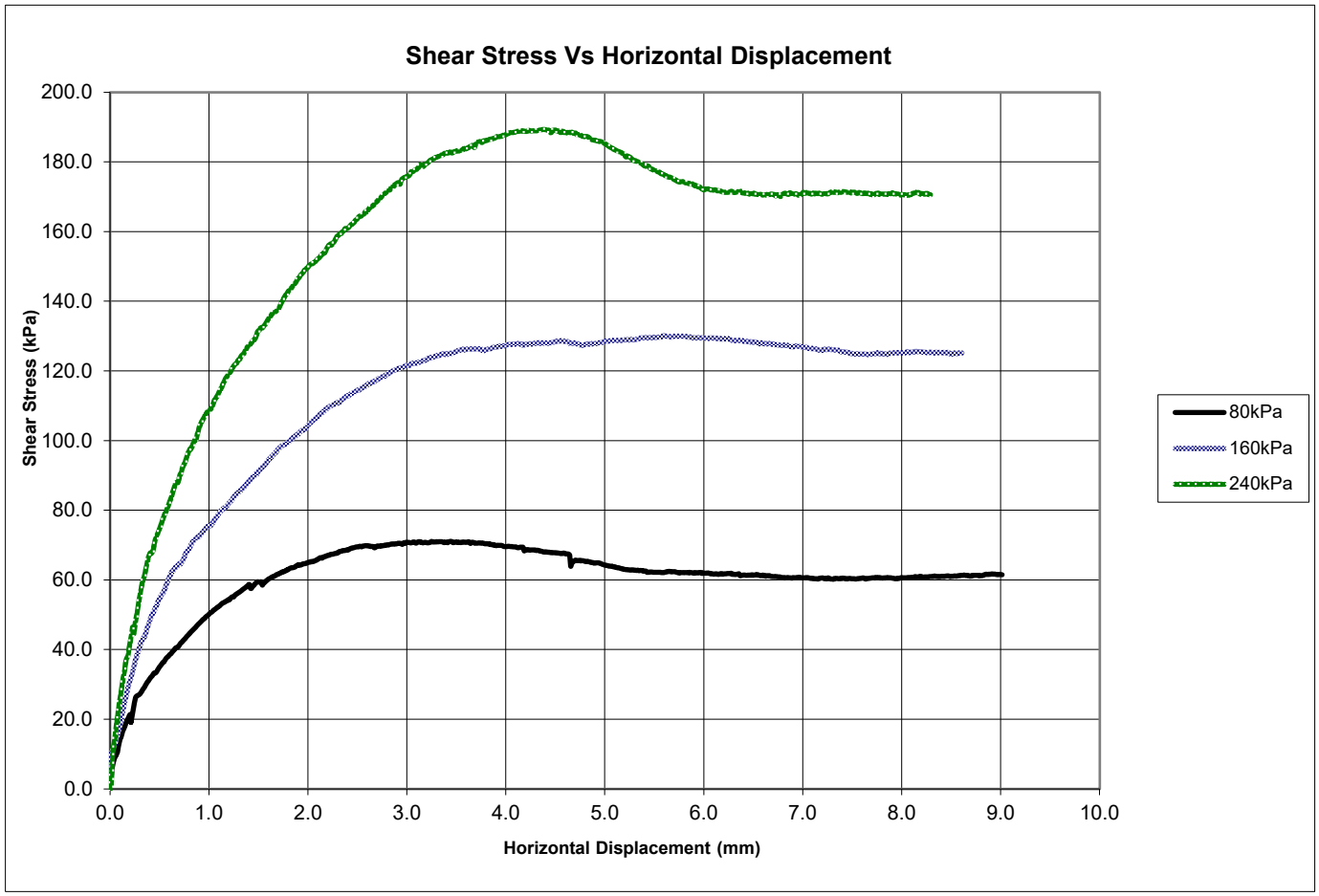
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 11.9 | - |
| $\phi'$ | degrees | 36.5 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 01-2**



# LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01-3**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH305, B, 3.00-3.45m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH305, B, 3.00-3.45m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Black fine to medium SAND and GRAVEL / ASHFILL. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

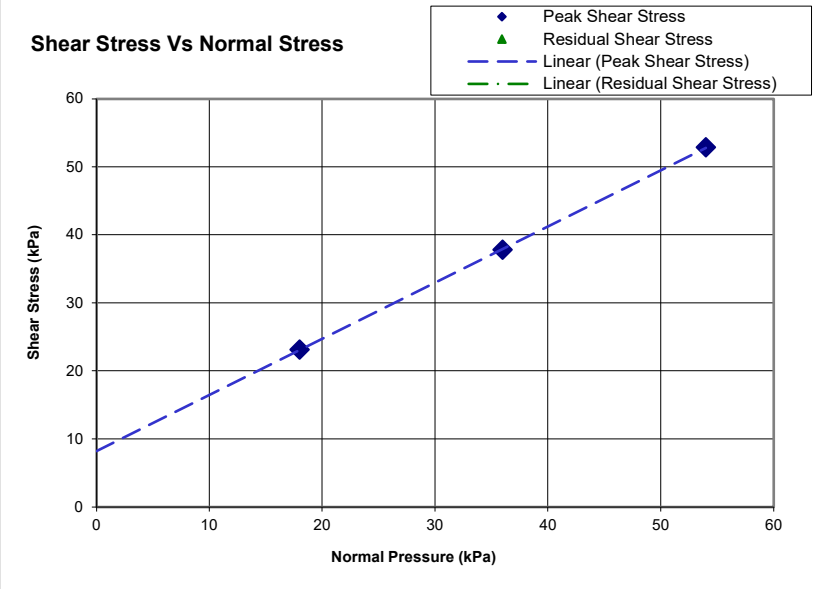
Date 27/04/2022

2643

**Certificate No :** **22/393 - 01-3**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.2 | 23.1 | 23.2 | | |
| | Moisture Content | % | 25 | 25 | 25 | | |
| | Bulk Density | $Mg/m^3$ | 1.88 | 1.89 | 1.88 | | |
| | Dry Density | $Mg/m^3$ | 1.50 | 1.51 | 1.51 | | |
| | Voids Ratio | | 0.767 | 0.751 | 0.758 | | |
| | Degree of Saturation | % | 87 | 88 | 87 | | |
| Consol | Consolidation / Normal Stress | kPa | 18 | 36 | 54 | | |
| | Change in height | mm | 0.12 | 0.15 | 0.21 | | |
| | Voids ratio | | 0.758 | 0.740 | 0.742 | | |
| Final | Voids ratio | | 0.824 | 0.794 | 0.798 | | |
| | Moisture Content | % | 31 | 31 | 30 | | |
| | Saturation | % | 100 | 100 | 100 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 0.90 | 1.18 | 1.64 | | |
| | Shear stress | kPa | 23.129 | 37.803 | 52.856 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

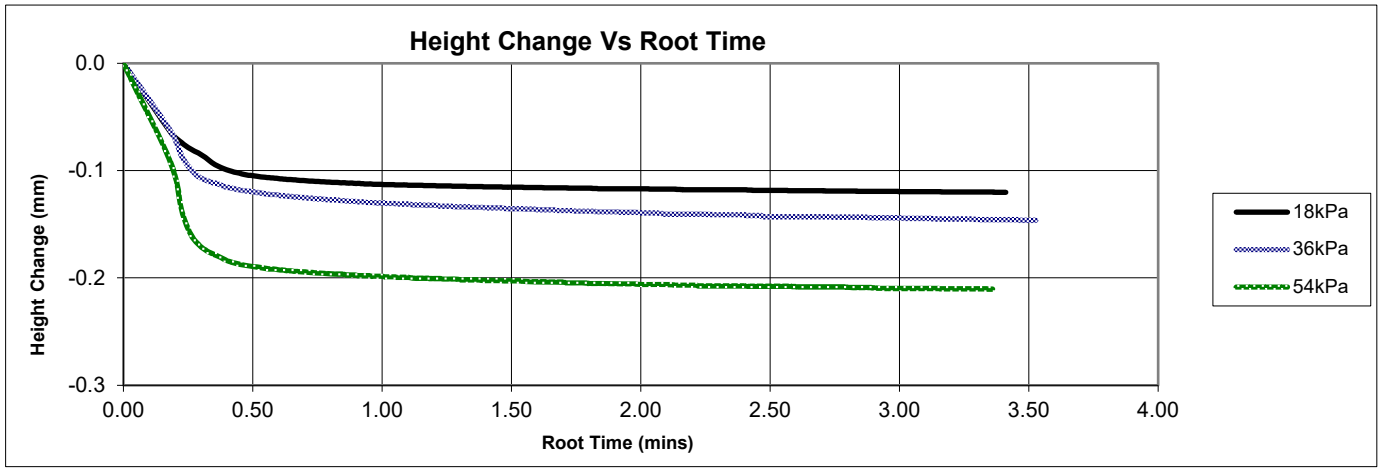


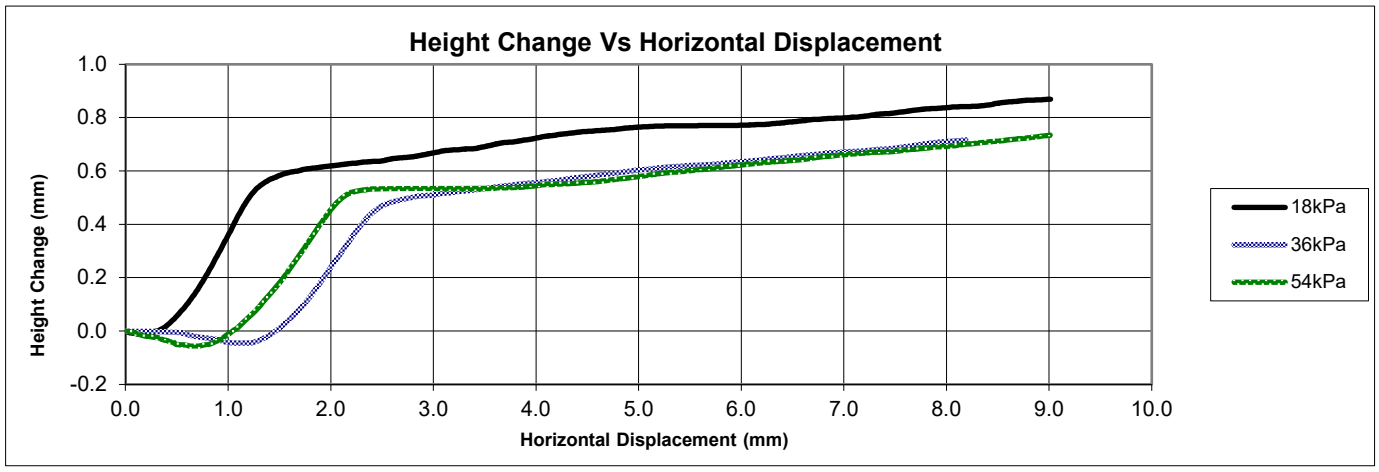

**Shear Strength Parameters**

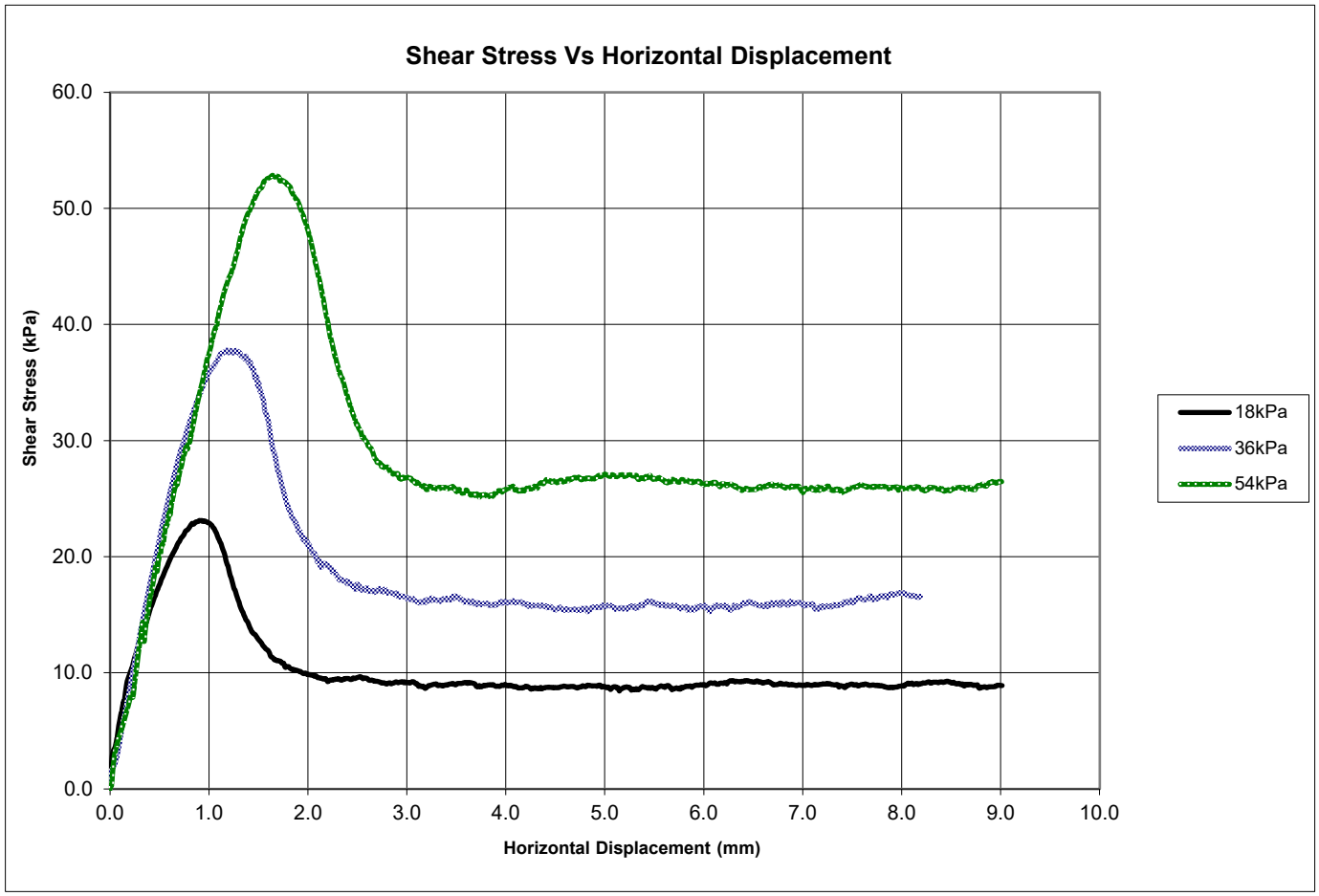
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 8.2 | - |
| $\phi'$ | degrees | 39.5 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 01-3**



# LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01-4**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH305, B, 5.00-5.45m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH305, B, 5.00-5.45m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Black fine to medium SAND and GRAVEL / ASHFILL. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

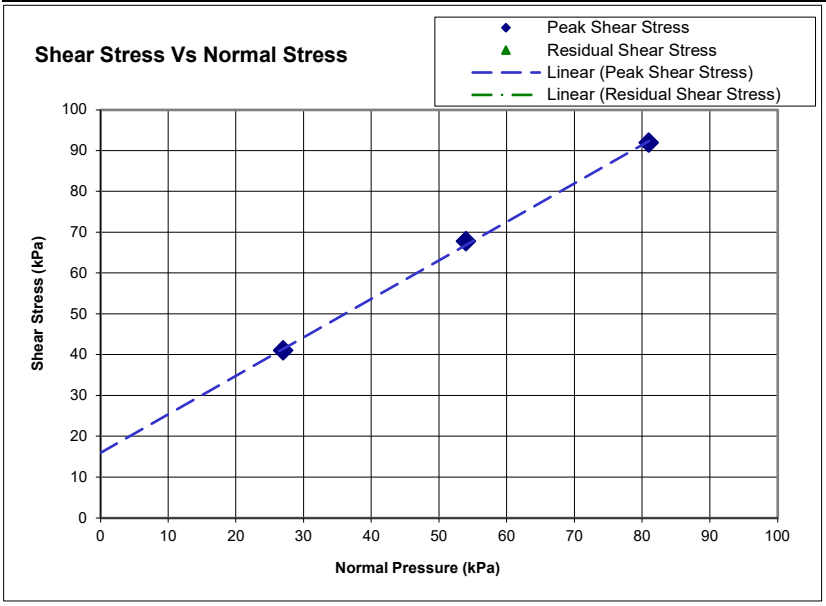
Date 27/04/2022

2643

**Certificate No :** **22/393 - 01-4**

| Specimen Details | | | No. 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.1 | 23.2 | 23.2 | | |
| | Moisture Content | % | 33 | 32 | 33 | | |
| | Bulk Density | $Mg/m^3$ | 1.63 | 1.62 | 1.61 | | |
| | Dry Density | $Mg/m^3$ | 1.22 | 1.22 | 1.22 | | |
| | Voids Ratio | | 1.164 | 1.173 | 1.179 | | |
| | Degree of Saturation | % | 75 | 73 | 73 | | |
| Consol | Consolidation / Normal Stress | kPa | 27 | 54 | 81 | | |
| | Change in height | mm | 0.72 | 0.96 | 1.21 | | |
| | Voids ratio | | 1.097 | 1.082 | 1.065 | | |
| Final | Voids ratio | | 1.148 | 1.132 | 1.105 | | |
| | Moisture Content | % | 39 | 38 | 38 | | |
| | Saturation | % | 89 | 89 | 91 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| Shearing stage | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 1.86 | 2.43 | 2.48 | | |
| | Shear stress | kPa | 41.029 | 67.747 | 91.933 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

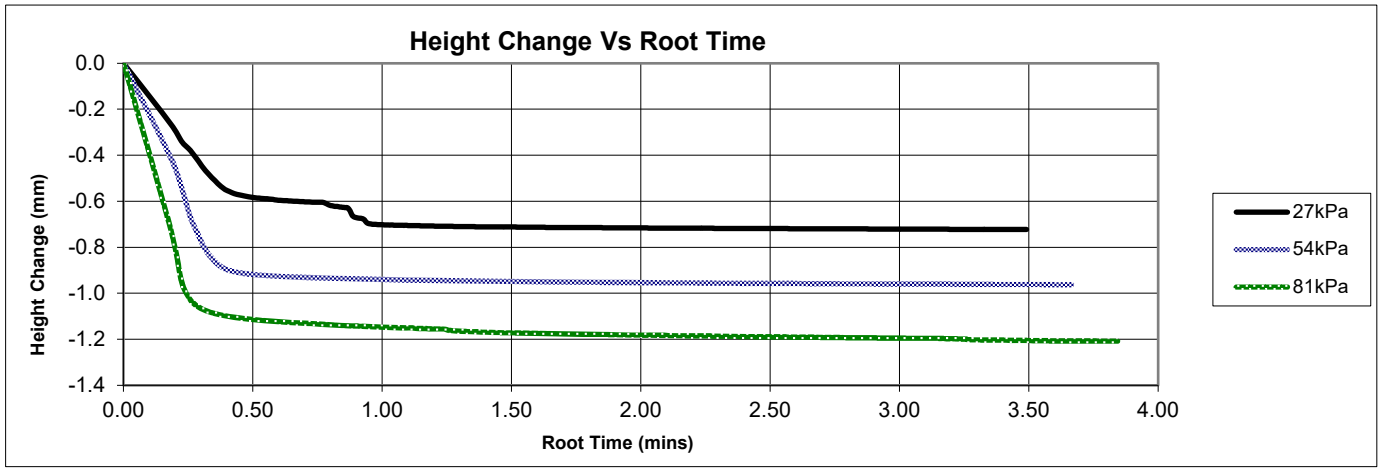


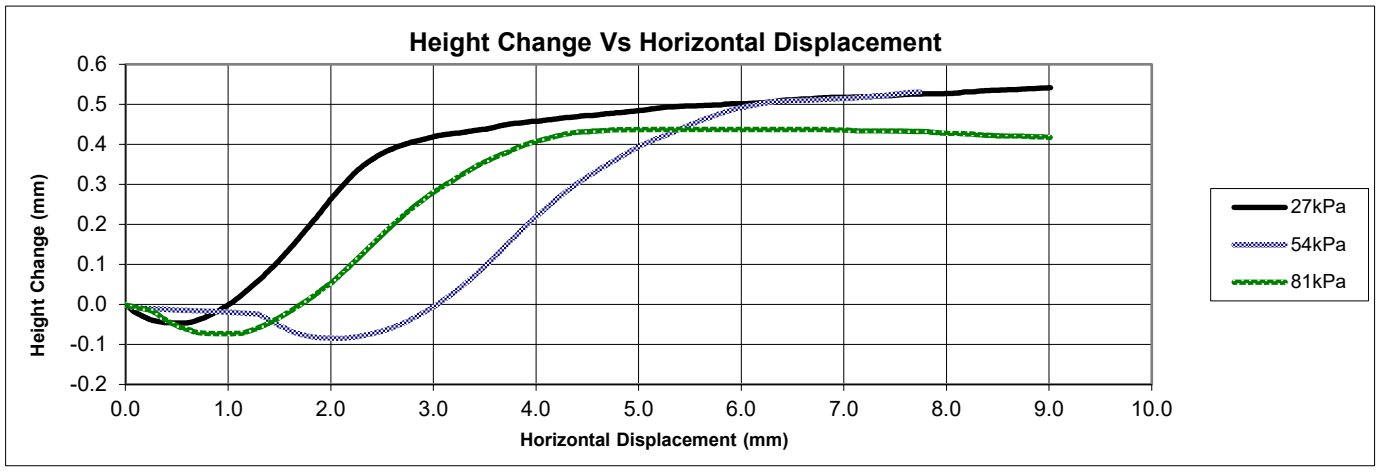

**Shear Strength Parameters**

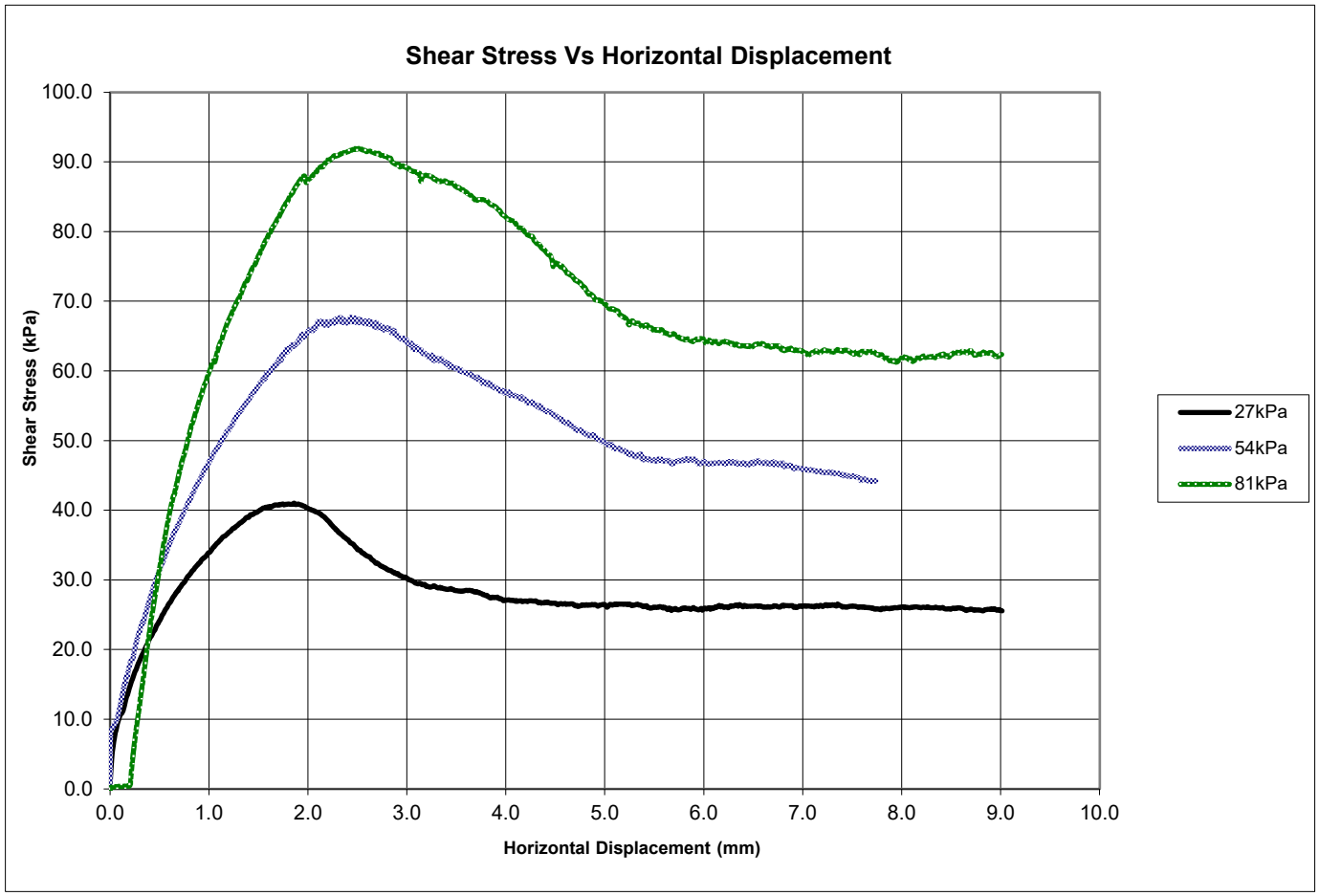
| Peak Strength | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 16.0 | - |
| $\phi'$ | degrees | 43.5 | - |

| Residual Strength | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 01-4**



# LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01-5**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH305, B, 7.50-7.95m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH305, B, 7.50-7.95m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Black fine to coarse ASHFILL / SAND and GRAVEL. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
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Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
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All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

Date 27/04/2022

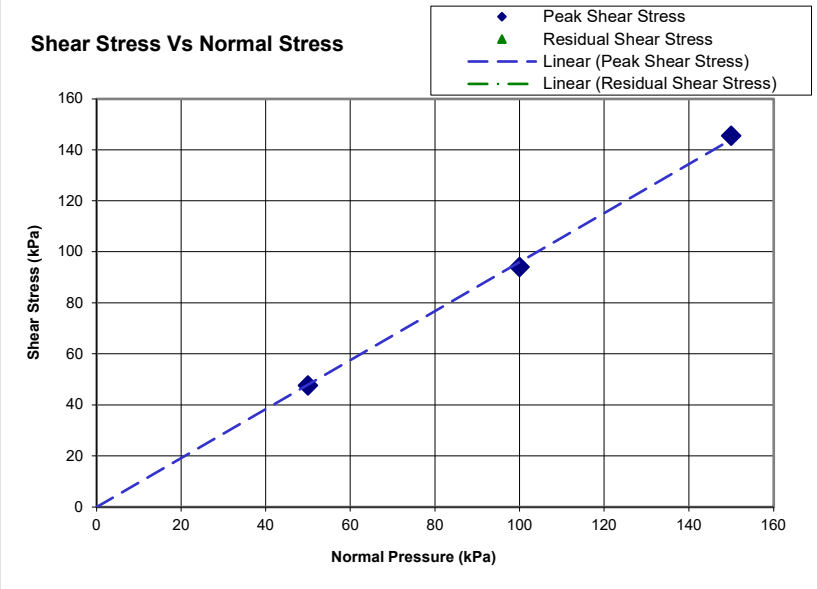


UKAS TESTING
2643

**Certificate No :** **22/393 - 01-5**

| Specimen Details | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 22.8 | 23.1 | 23.2 | | |
| | Moisture Content | % | 35 | 35 | 35 | | |
| | Bulk Density | $Mg/m^3$ | 1.57 | 1.57 | 1.57 | | |
| | Dry Density | $Mg/m^3$ | 1.16 | 1.16 | 1.16 | | |
| | Voids Ratio | | 1.285 | 1.282 | 1.281 | | |
| | Degree of Saturation | % | 73 | 73 | 72 | | |
| Consol | Consolidation / Normal Stress | kPa | 50 | 100 | 150 | | |
| | Change in height | mm | 0.72 | 0.80 | 0.92 | | |
| | Voids ratio | | 1.213 | 1.203 | 1.191 | | |
| Final | Voids ratio | | 1.248 | 1.209 | 1.195 | | |
| | Moisture Content | % | 40 | 39 | 38 | | |
| | Saturation | % | 85 | 85 | 85 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| Shearing stage | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 3.31 | 4.87 | 3.85 | | |
| | Shear stress | kPa | 47.594 | 94.010 | 145.474 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |



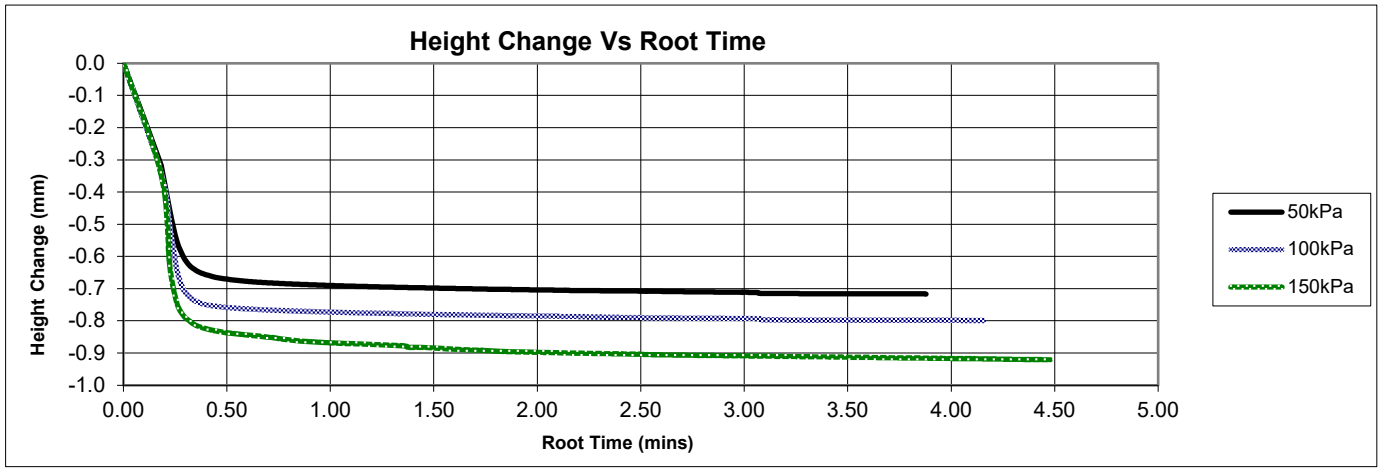

**Shear Strength Parameters**

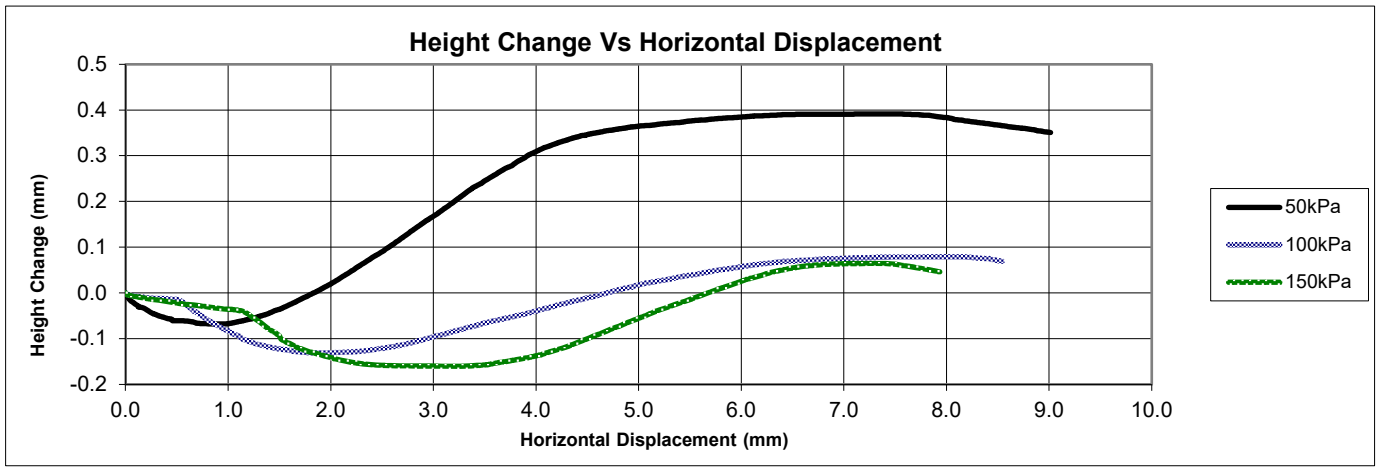
| Peak Strength | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | -2.2 | 0.0 |
| $\phi'$ | degrees | 44.5 | 44.0 |

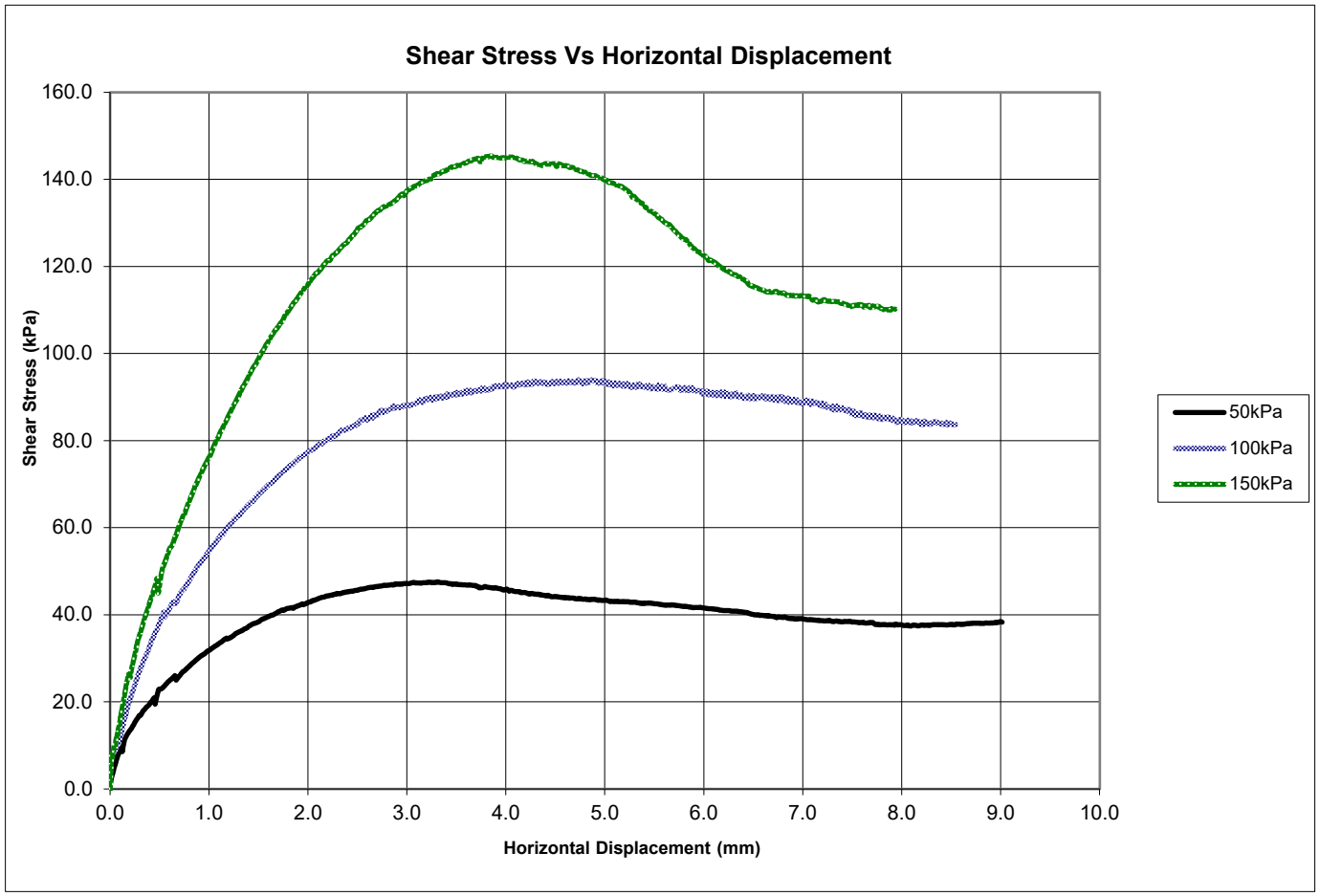
| Residual Strength | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

Note - The automated regression line results in a negative c' value, therefore a manual line has been used which assumes a c' value of 0kPa

**Certificate No :** **22/393 - 01-5**



# LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01-6**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | TP304, WA1031264, 2.90m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | TP304, WA1031264, 2.90m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Dark grey / brown clayey fine to coarse ASHFILL with black staining and silty clay. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
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**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

Date 27/04/2022

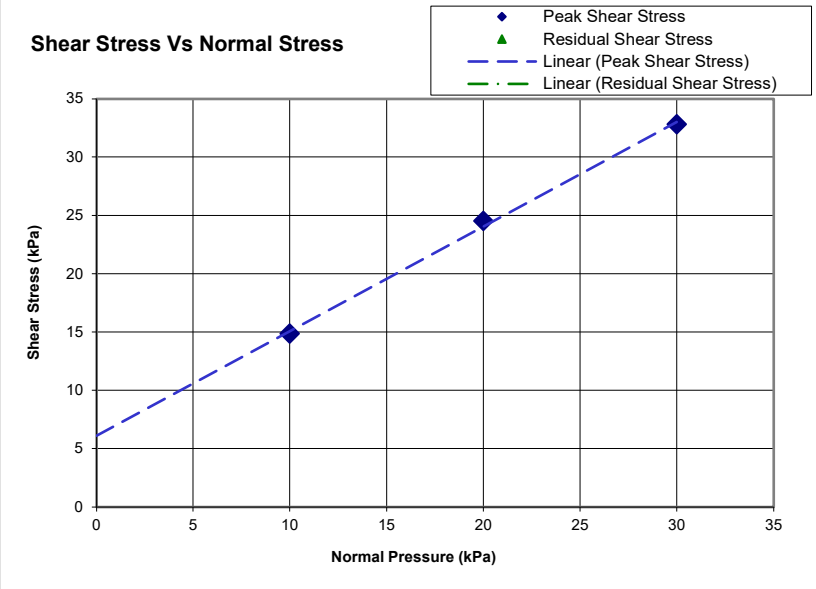
UKAS TESTING
2643

MATtest Limited
materials testing & consultancy

**Certificate No :** **22/393 - 01-6**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.2 | 23.1 | 23.1 | | |
| | Moisture Content | % | 26 | 26 | 26 | | |
| | Bulk Density | $Mg/m^3$ | 1.60 | 1.59 | 1.59 | | |
| | Dry Density | $Mg/m^3$ | 1.27 | 1.26 | 1.27 | | |
| | Voids Ratio | | 1.088 | 1.095 | 1.093 | | |
| | Degree of Saturation | % | 63 | 62 | 62 | | |
| Consol | Consolidation / Normal Stress | kPa | 10 | 20 | 30 | | |
| | Change in height | mm | 0.42 | 0.51 | 0.77 | | |
| | Voids ratio | | 1.050 | 1.049 | 1.022 | | |
| Final | Voids ratio | | 1.077 | 1.078 | 1.002 | | |
| | Moisture Content | % | 29 | 28 | 27 | | |
| | Saturation | % | 71 | 69 | 70 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 2.62 | 2.78 | 4.13 | | |
| | Shear stress | kPa | 14.854 | 24.518 | 32.799 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

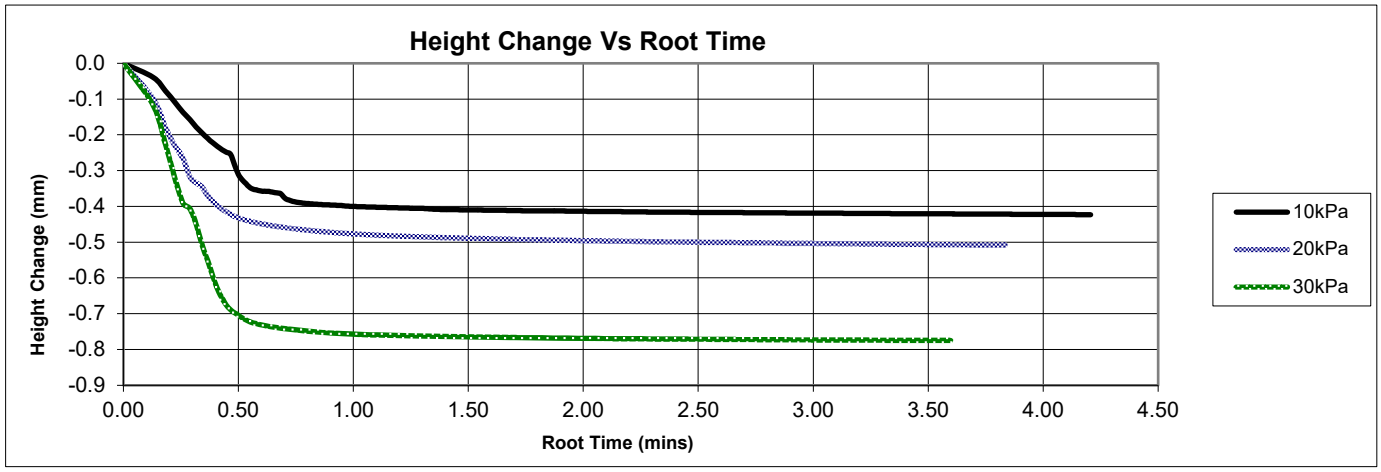


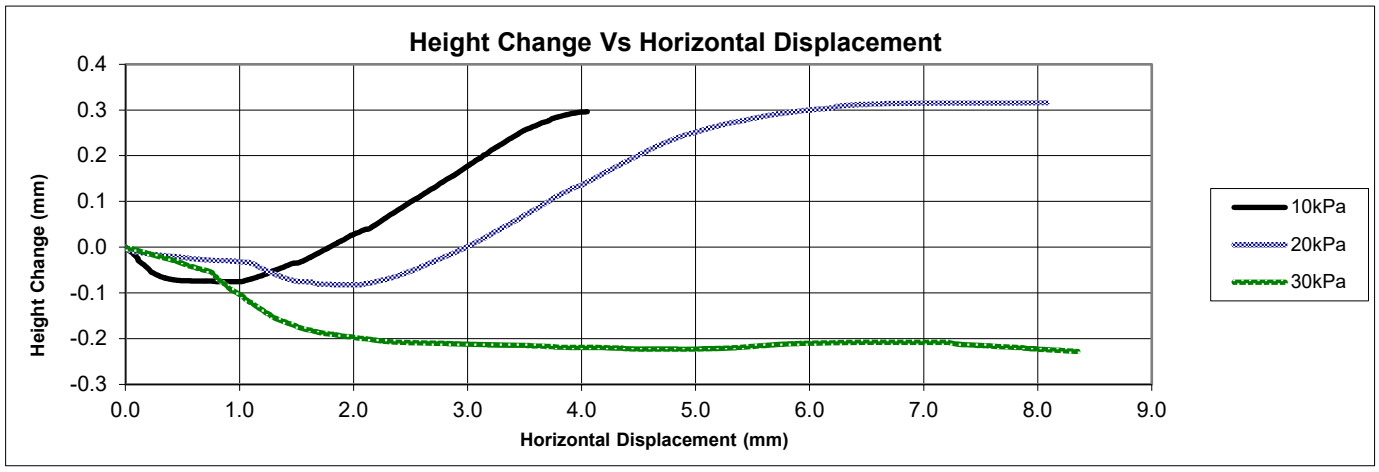

**Shear Strength Parameters**

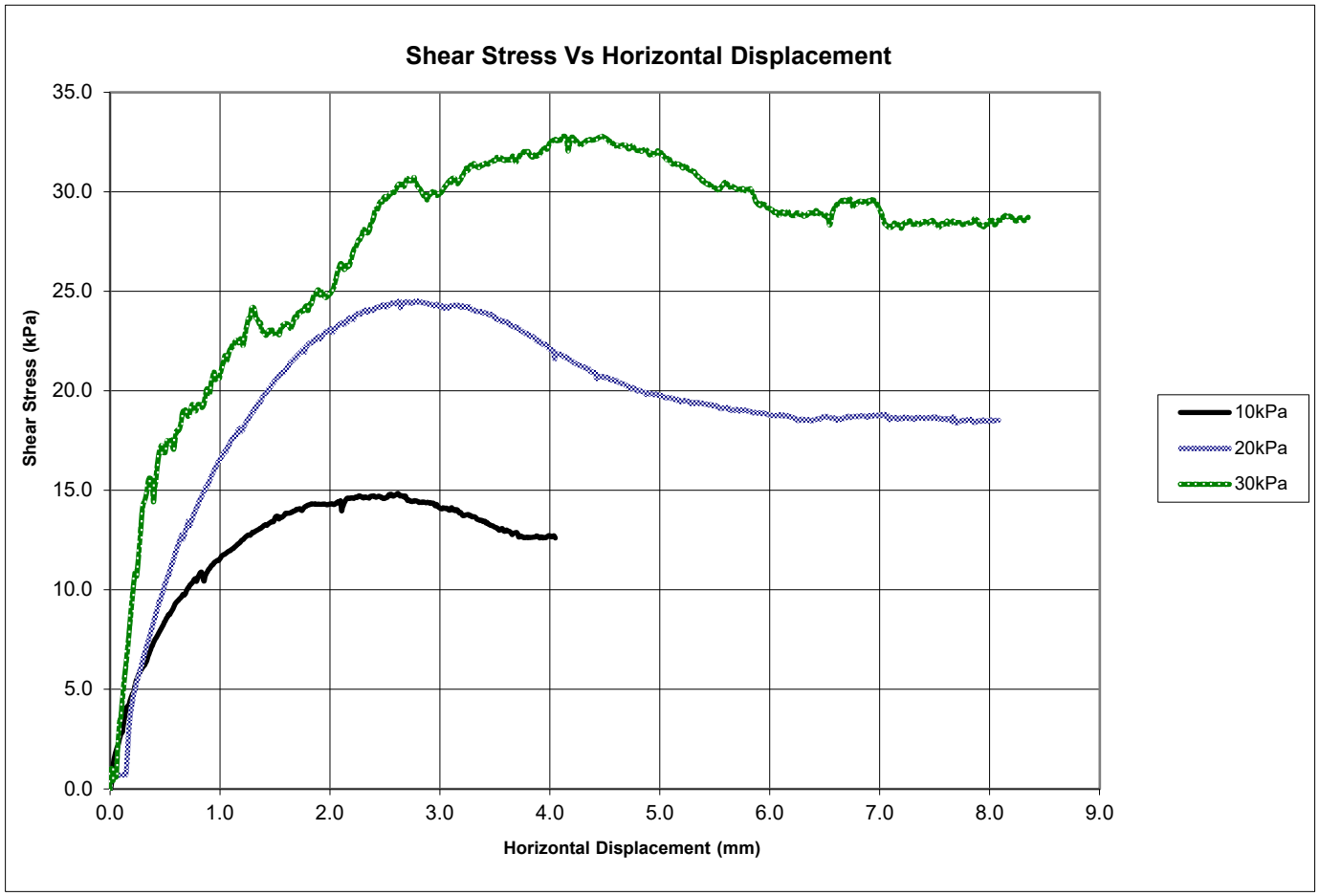
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 6.1 | - |
| $\phi'$ | degrees | 42.0 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 01-6**



# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01-7**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | TP305, WA1031277, 3.00m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | TP305, WA1031277, 3.00m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Dark grey / brown fine to coarse ASHFILL. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

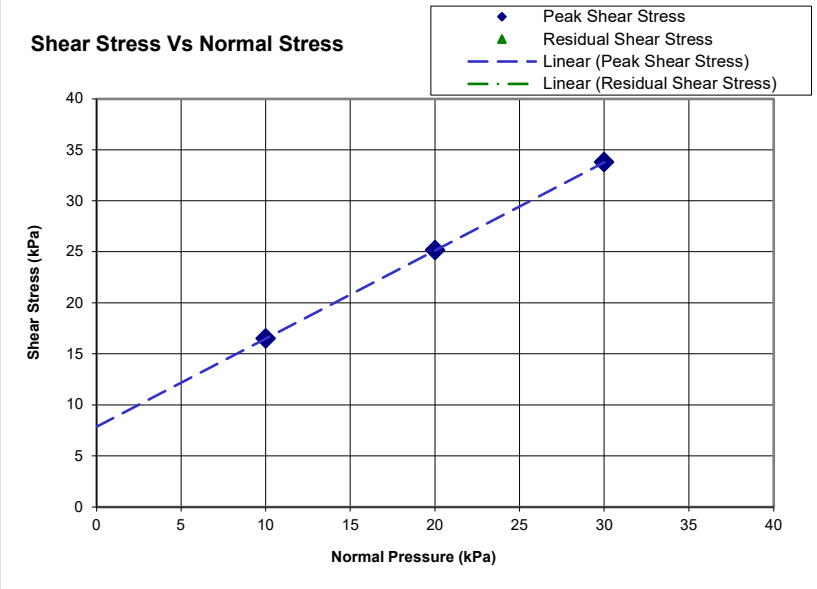
Date 27/04/2022

UKAS TESTING
2643

**Certificate No :** **22/393 - 01-7**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.1 | 23.1 | 23.2 | | |
| | Moisture Content | % | 37 | 37 | 38 | | |
| | Bulk Density | $Mg/m^3$ | 1.48 | 1.47 | 1.47 | | |
| | Dry Density | $Mg/m^3$ | 1.07 | 1.07 | 1.06 | | |
| | Voids Ratio | | 1.468 | 1.468 | 1.492 | | |
| | Degree of Saturation | % | 68 | 67 | 67 | | |
| Consol | Consolidation / Normal Stress | kPa | 10 | 20 | 30 | | |
| | Change in height | mm | 0.41 | 0.57 | 0.73 | | |
| | Voids ratio | | 1.424 | 1.406 | 1.414 | | |
| Final | Voids ratio | | 1.461 | 1.427 | 1.487 | | |
| | Moisture Content | % | 50 | 51 | 51 | | |
| | Saturation | % | 90 | 94 | 91 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 0.54 | 0.50 | 3.05 | | |
| | Shear stress | kPa | 16.503 | 25.155 | 33.782 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

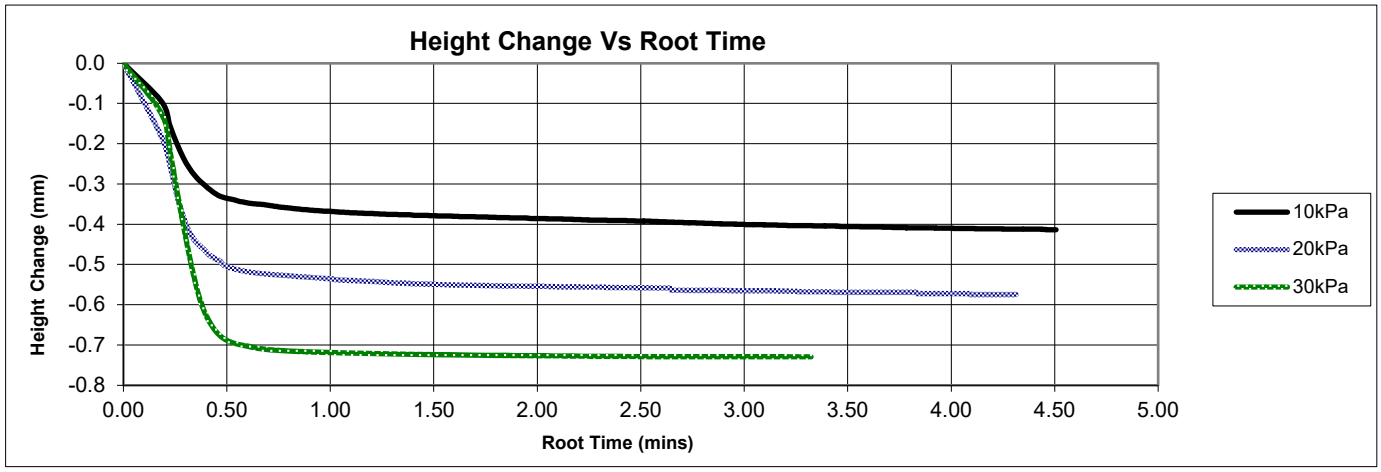


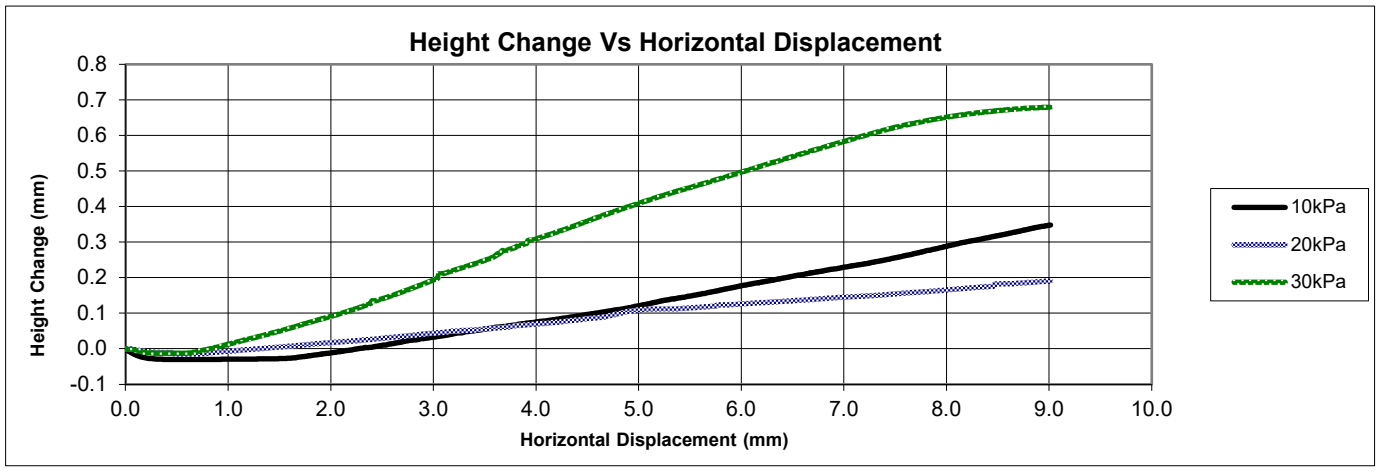

**Shear Strength Parameters**

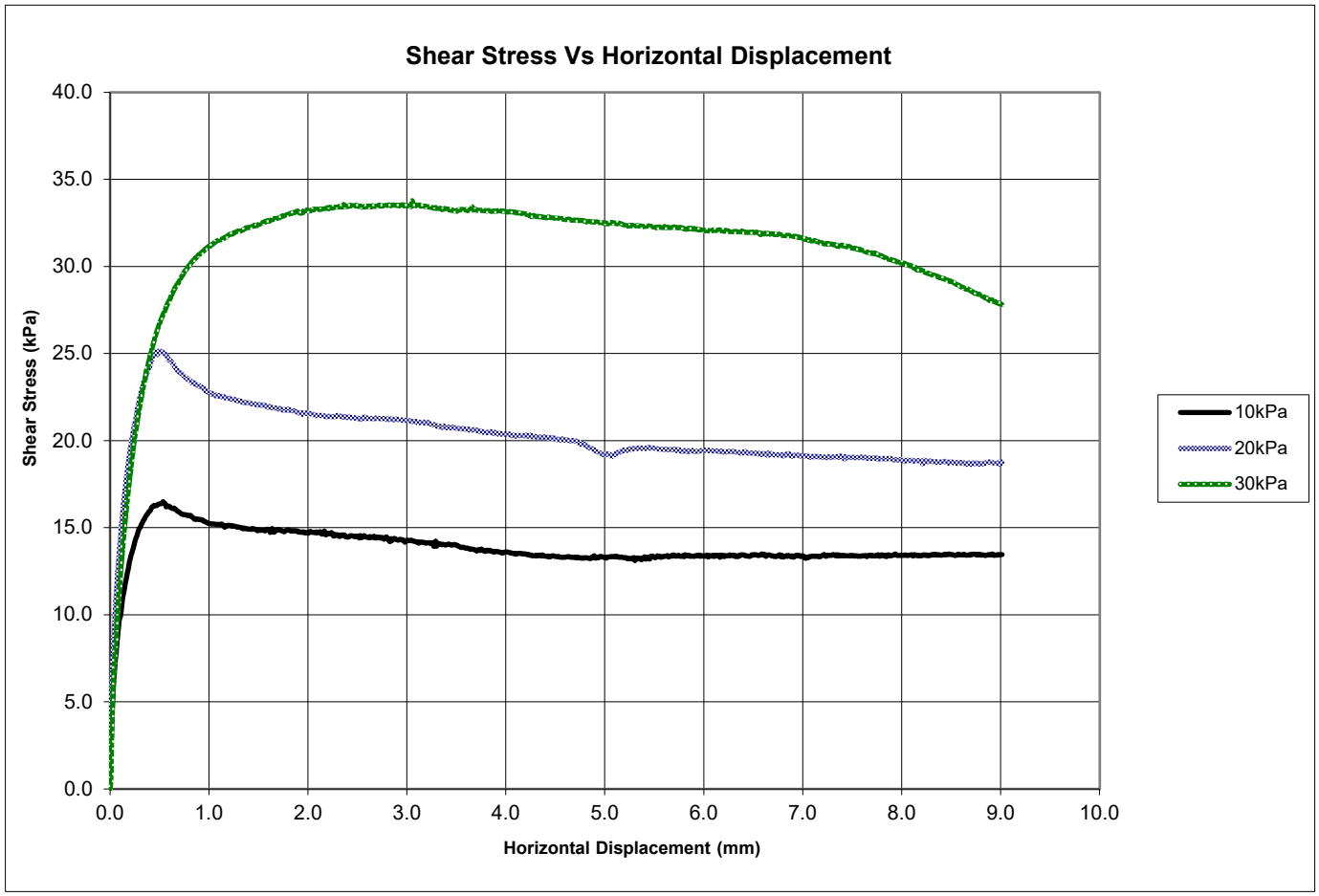
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 7.9 | - |
| $\phi'$ | degrees | 41.0 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 01-7**



# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01-8**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | TP306, WA1031280, 1.00m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | TP306, WA1031280, 1.00m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Dark grey / brown fine to coarse ASHFILL. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

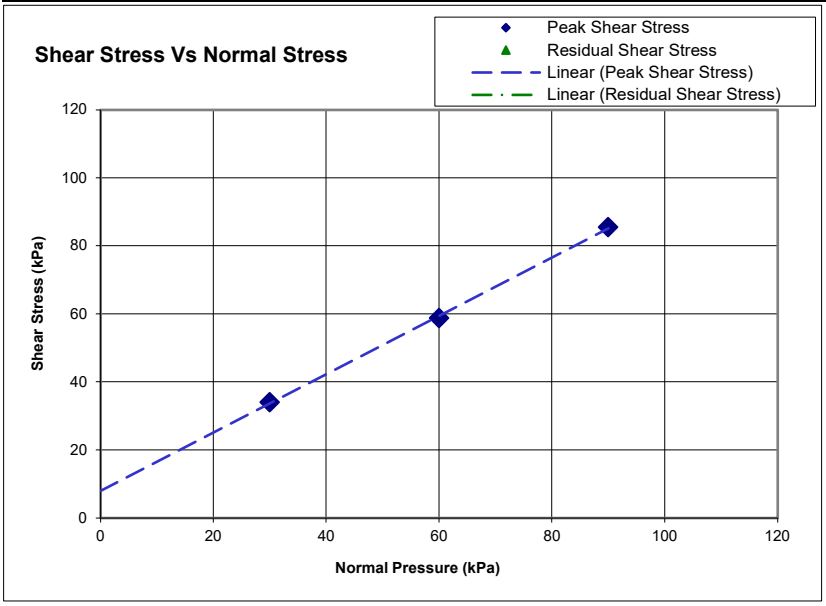
Date 27/04/2022

UKAS TESTING
2643

**Certificate No :** **22/393 - 01-8**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.1 | 23.2 | 23.1 | | |
| | Moisture Content | % | 32 | 32 | 32 | | |
| | Bulk Density | $Mg/m^3$ | 1.37 | 1.36 | 1.37 | | |
| | Dry Density | $Mg/m^3$ | 1.03 | 1.03 | 1.04 | | |
| | Voids Ratio | | 1.561 | 1.580 | 1.556 | | |
| | Degree of Saturation | % | 54 | 54 | 55 | | |
| Consol | Consolidation / Normal Stress | kPa | 30 | 60 | 90 | | |
| | Change in height | mm | 0.71 | 0.97 | 1.59 | | |
| | Voids ratio | | 1.482 | 1.472 | 1.379 | | |
| Final | Voids ratio | | 1.549 | 1.547 | 1.432 | | |
| | Moisture Content | % | 35 | 34 | 33 | | |
| | Saturation | % | 59 | 58 | 61 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 1.56 | 2.82 | 3.14 | | |
| | Shear stress | kPa | 34.015 | 58.756 | 85.450 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

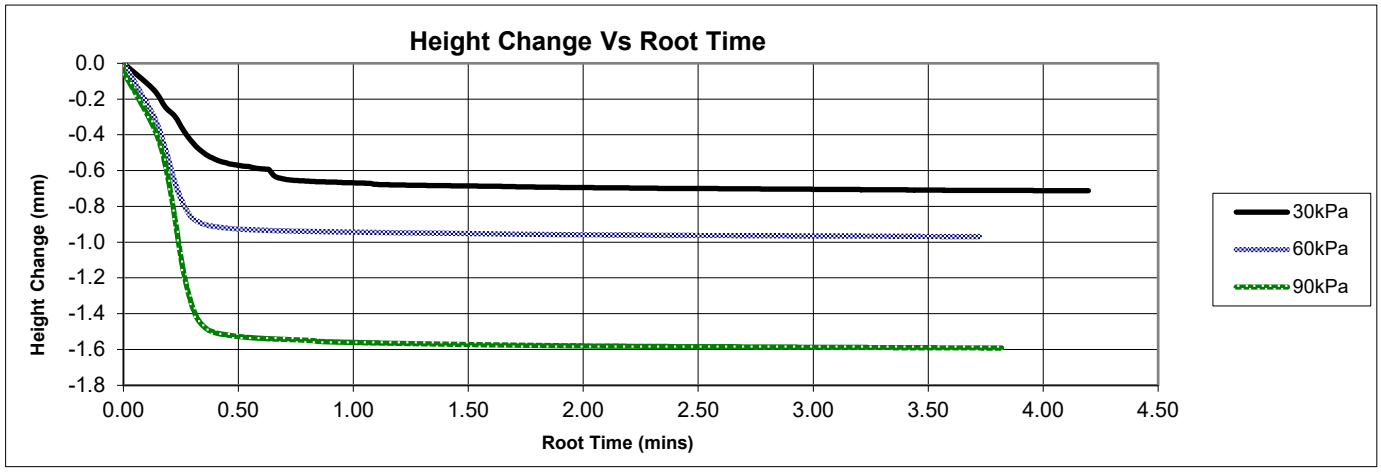


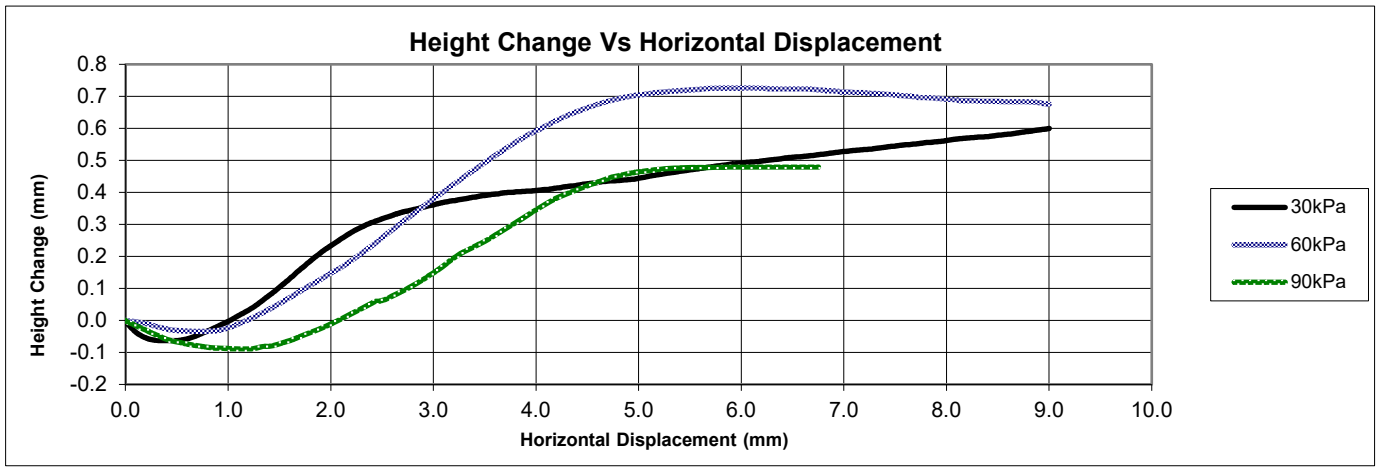

**Shear Strength Parameters**

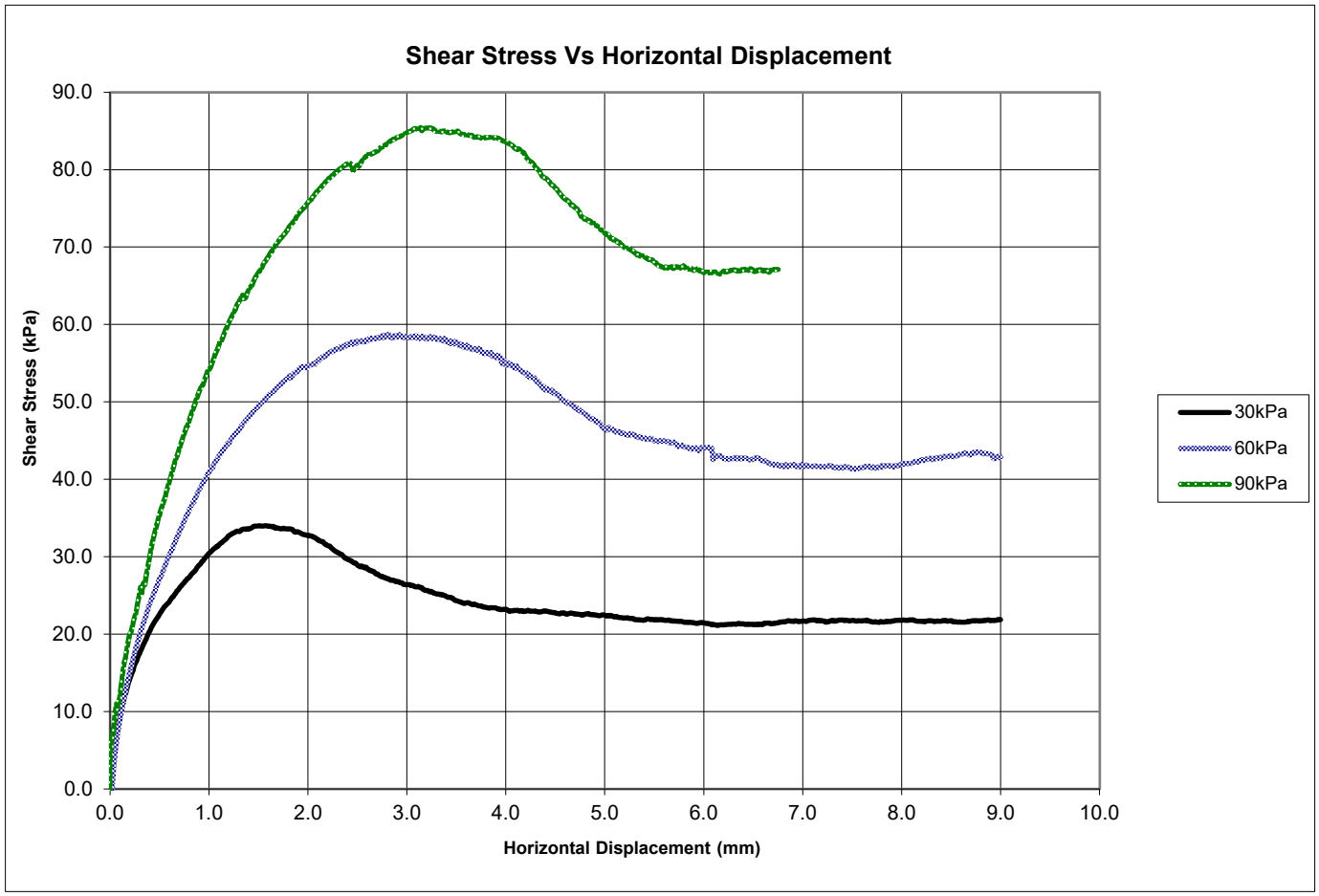
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 8.0 | - |
| $\phi'$ | degrees | 40.5 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 01-8**



# LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01-9**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | TP308, WA1031265, 0.30m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | TP308, WA1031265, 0.30m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Black very clayey fine to coarse ASHFILL. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

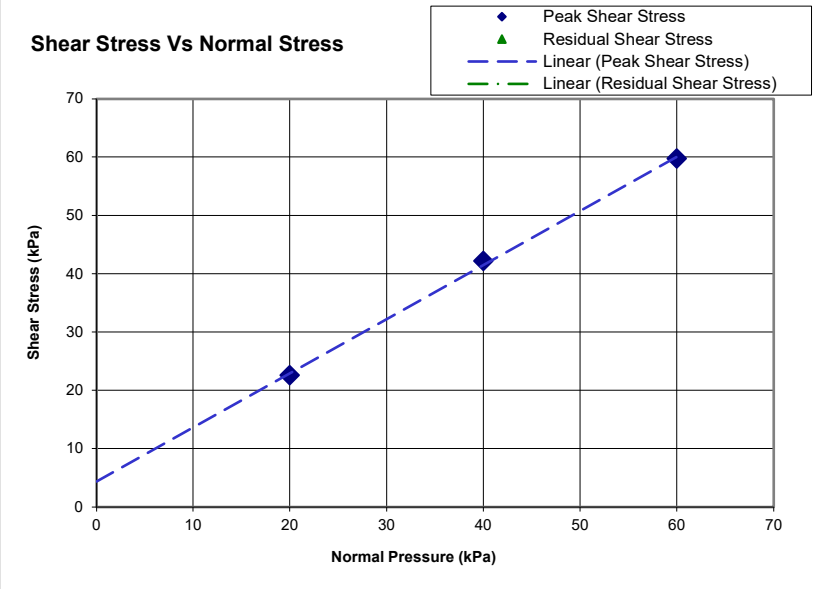
Date 27/04/2022

UKAS TESTING
2643

**Certificate No :** **22/393 - 01-9**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.1 | 23.1 | 23.1 | | |
| | Moisture Content | % | 27 | 27 | 27 | | |
| | Bulk Density | $Mg/m^3$ | 1.59 | 1.59 | 1.60 | | |
| | Dry Density | $Mg/m^3$ | 1.26 | 1.26 | 1.26 | | |
| | Voids Ratio | | 1.106 | 1.110 | 1.095 | | |
| | Degree of Saturation | % | 64 | 63 | 64 | | |
| Consol | Consolidation / Normal Stress | kPa | 20 | 40 | 60 | | |
| | Change in height | mm | 0.34 | 0.48 | 0.53 | | |
| | Voids ratio | | 1.075 | 1.066 | 1.047 | | |
| Final | Voids ratio | | 1.119 | 1.152 | 1.095 | | |
| | Moisture Content | % | 37 | 35 | 33 | | |
| | Saturation | % | 87 | 81 | 80 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 1.33 | 2.03 | 2.66 | | |
| | Shear stress | kPa | 22.587 | 42.156 | 59.723 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

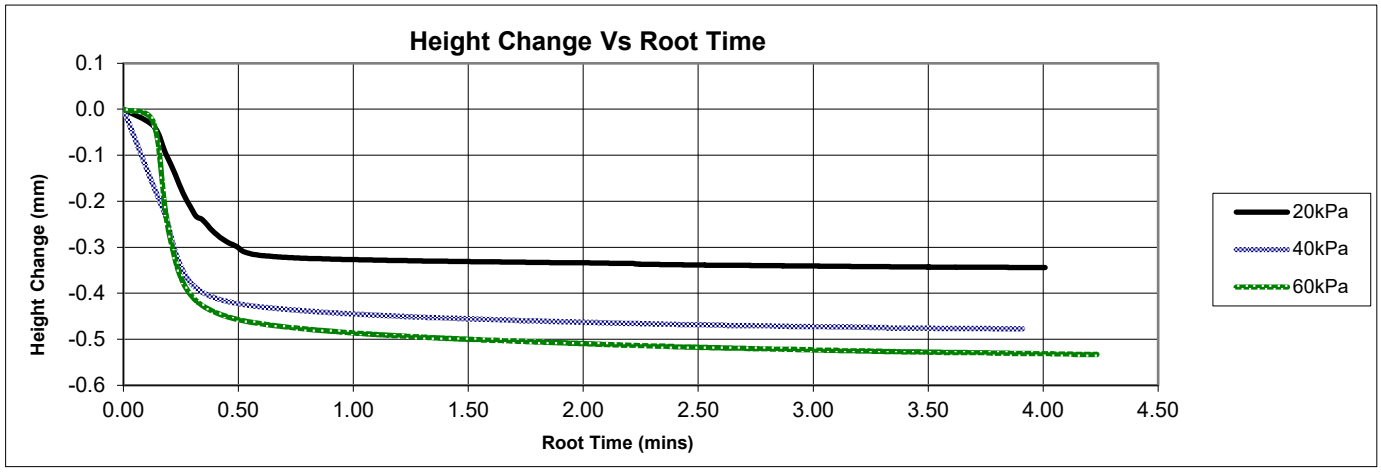


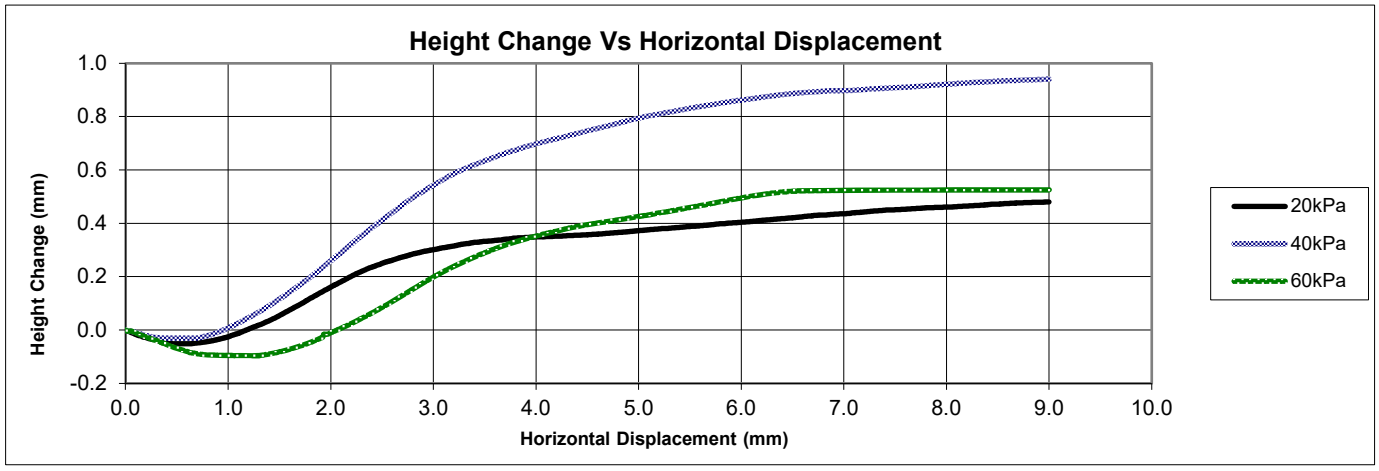

**Shear Strength Parameters**

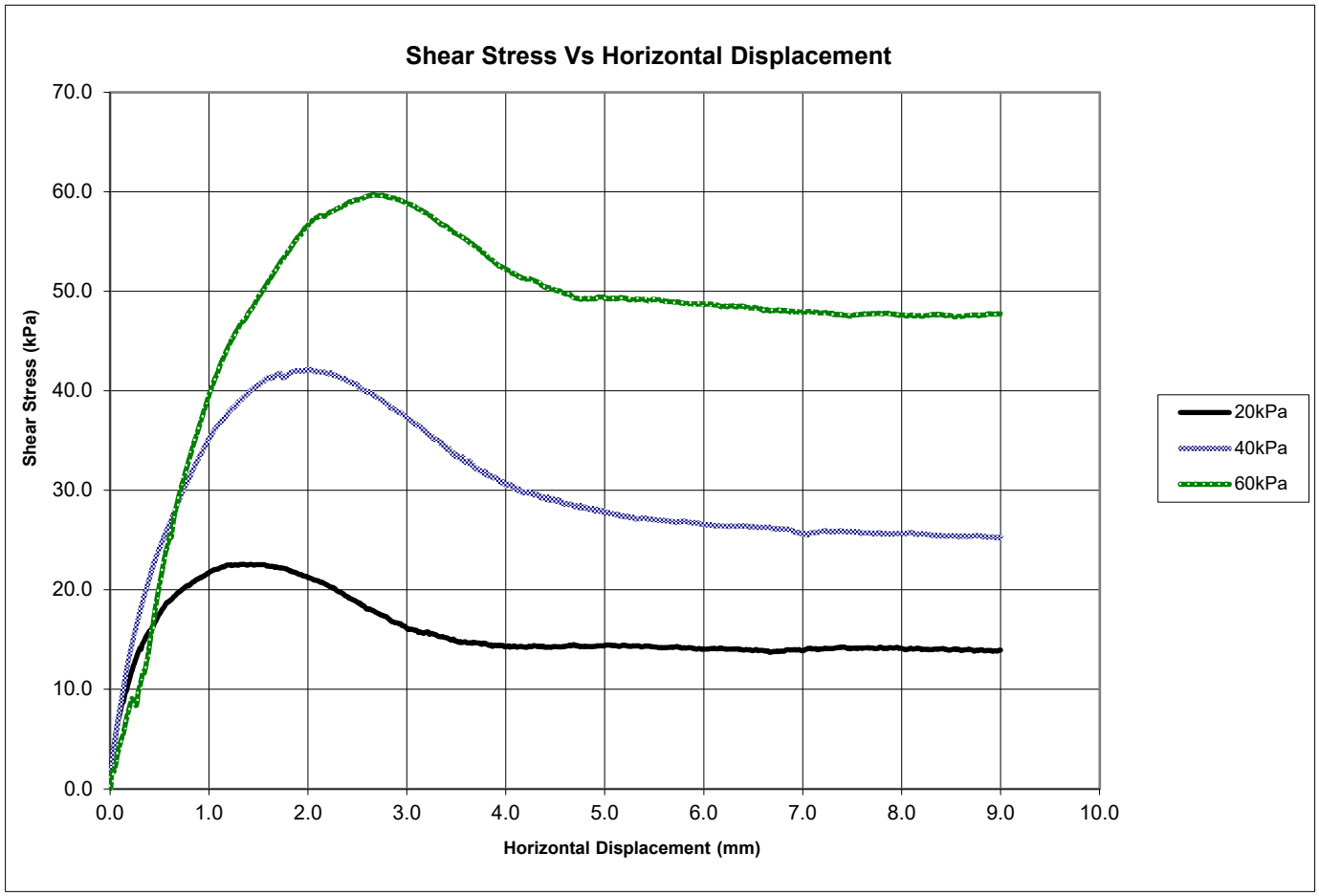
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 4.4 | - |
| $\phi'$ | degrees | 43.0 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 01-9**



# LABORATORY TEST CERTIFICATE

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10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 01-10**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 29th March 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | TP309, WA1031289, 3.00m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | TP309, WA1031289, 3.00m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Brown silty fine to coarse SAND. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 11th April 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
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All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

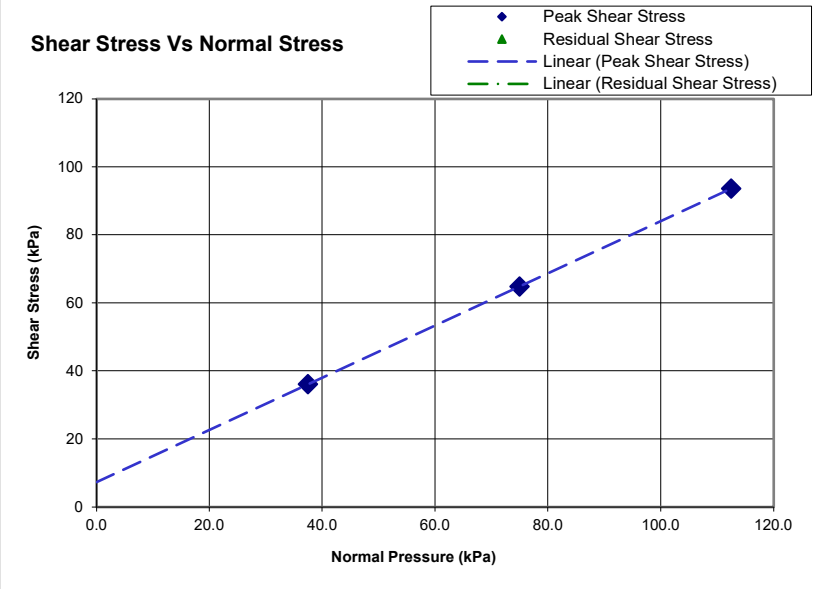
Date 27/04/2022

UKAS TESTING
2643

**Certificate No :** **22/393 - 01-10**

| Specimen Details | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.1 | 23.1 | 23.1 | | |
| | Moisture Content | % | 19 | 19 | 19 | | |
| | Bulk Density | $Mg/m^3$ | 1.92 | 1.91 | 1.91 | | |
| | Dry Density | $Mg/m^3$ | 1.61 | 1.60 | 1.60 | | |
| | Voids Ratio | | 0.650 | 0.655 | 0.652 | | |
| | Degree of Saturation | % | 79 | 78 | 78 | | |
| Consol | Consolidation / Normal Stress | kPa | 37.5 | 75.0 | 112.5 | | |
| | Change in height | mm | 0.77 | 0.84 | 1.04 | | |
| | Voids ratio | | 0.595 | 0.595 | 0.577 | | |
| Final | Voids ratio | | 0.601 | 0.587 | 0.570 | | |
| | Moisture Content | % | 20 | 19 | 19 | | |
| | Saturation | % | 87 | 87 | 87 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| Shearing stage | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 2.44 | 3.13 | 3.08 | | |
| | Shear stress | kPa | 36.108 | 64.818 | 93.621 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

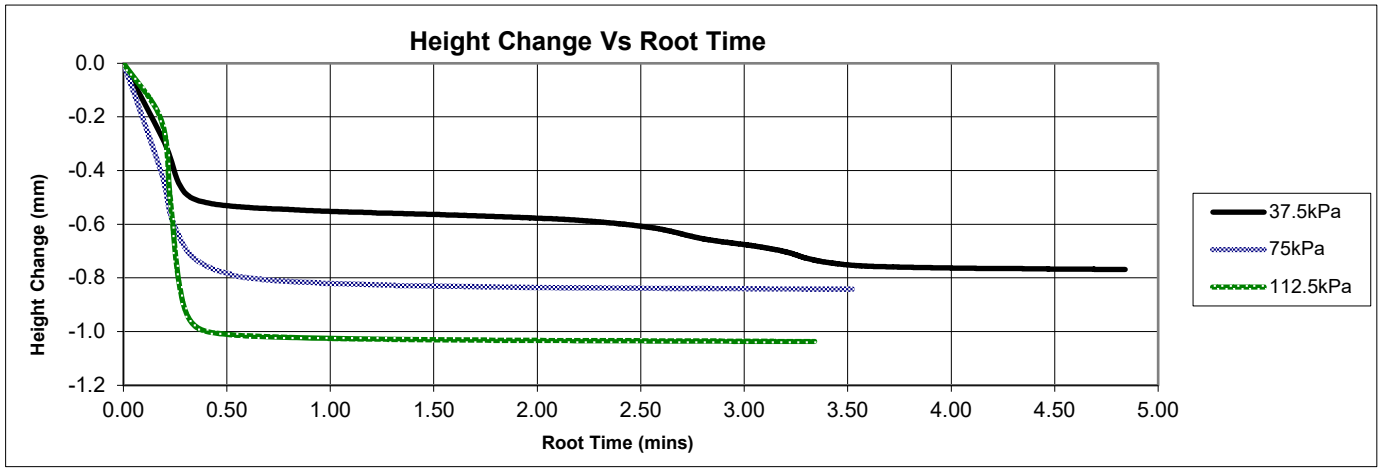


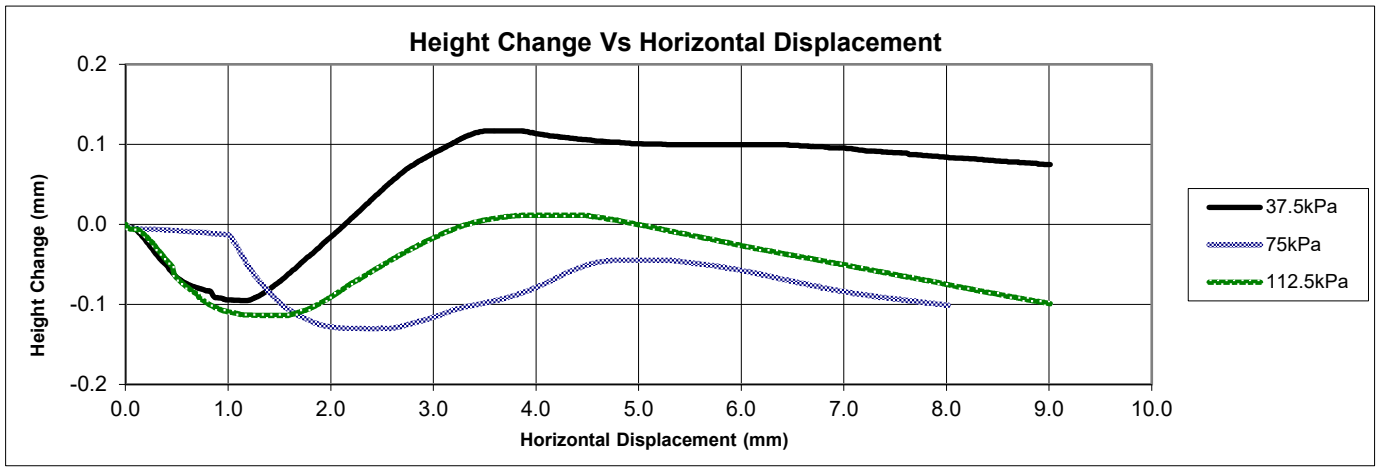

**Shear Strength Parameters**

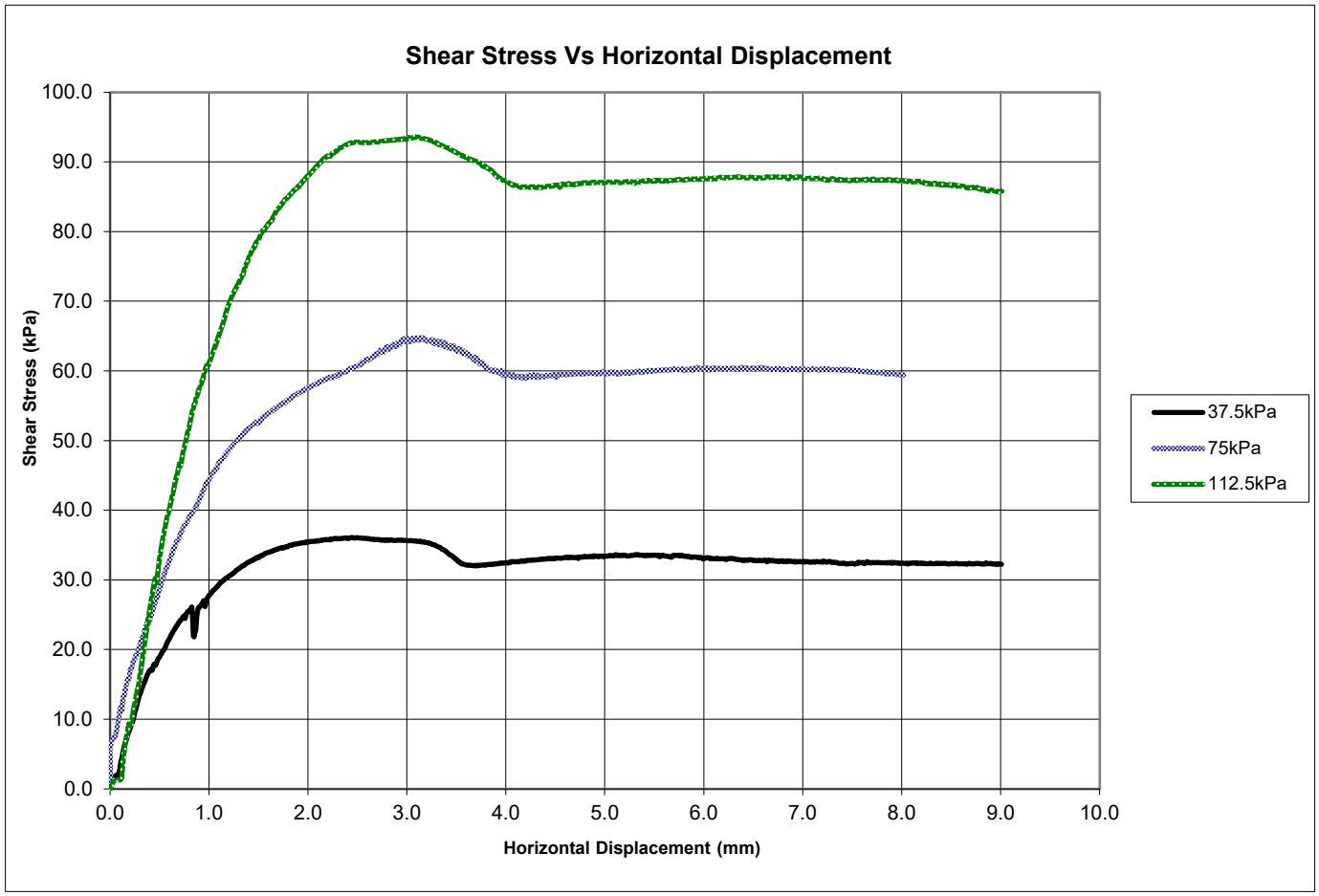
| Peak Strength | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 7.3 | - |
| $\phi'$ | degrees | 37.5 | - |

| Residual Strength | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 01-10**



# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 02**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

## LABORATORY TESTING OF SOIL

### Introduction

We refer to samples taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 04th May 2022.

### Material & Source

| | | |
|---|---|---|
| Sample Reference | : | See Report Plates |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | See Report Plates |
| Description | : | See Page 2 |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 04th May 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |

### Test Results

As Detailed On Page 2 to Page 4 inclusive

### Comments

The results contained in this report relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

### Remarks

**Approved for Issue**

T McLelland (Director)

Date 17/05/2022

UKAS TESTING
2643

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materials testing & consultancy

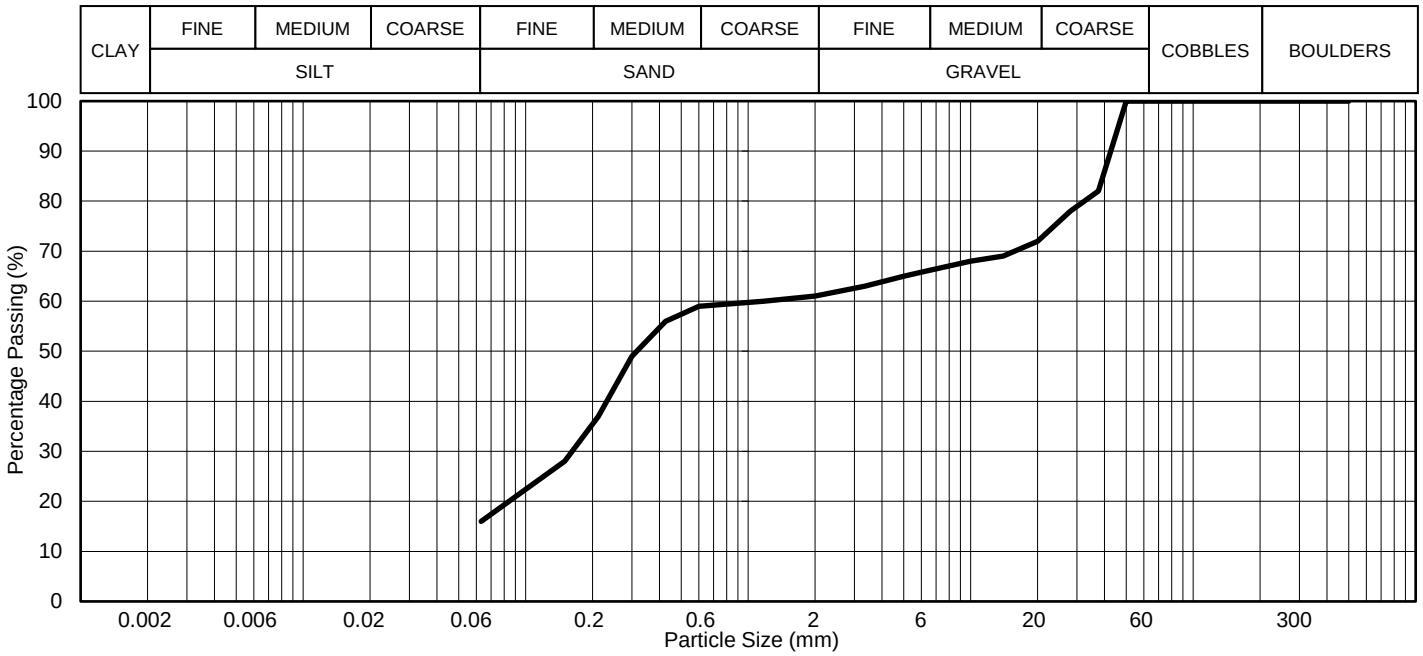
| BOREHOLE | SAMPLE | DEPTH (m) | SAMPLE DESCRIPTION |
|---|---|---|---|
| BH323 | WA1033795 | 1.50-1.90 | Brown fine to coarse SAND and GRAVEL with pockets of clay. |
| BH324 | WA1030384 | 5.00-5.45 | Black fine to coarse ASHFILL with pockets of clay. |
| BH324 | WA1030387 | 6.00-6.45 | Black fine to coarse ASHFILL with cobbles and pockets of clay. |
| BH324 | WA1030390 | 7.50-7.95 | Black slightly clayey fine to coarse ASHFILL with cobbles. |

## SUMMARY OF SAMPLE DESCRIPTIONS

**BAM RITCHIES**
**VICTORIA NORTH HIF**
**INFRASTRUCTURE & ENABLING WORKS**

MATtest Limited
materials testing & consultancy

| | |
|---|---|
| Borehole | BH323 |
| Sample | WA1033795 |
| Depth (m) | 1.50-1.90 |




| SIEVING | | | | SEDIMENTATION | |
|---|---|---|---|---|---|
| Sieve Size (mm) | Percentage Passing (%) | Specification Not Applicable Lower % | Specification Not Applicable Upper % | Particle Size (mm) | Percentage Passing (%) |
| 500.0 | 100 | - | - | 0.020 | |
| 300.0 | 100 | - | - | 0.006 | |
| 125.0 | 100 | - | - | 0.002 | |
| 90.0 | 100 | - | - | | |
| 75.0 | 100 | - | - | | |
| 63.0 | 100 | - | - | | |
| 50.0 | 100 | - | - | | |
| 37.5 | 82 | - | - | | |
| 28.0 | 78 | - | - | | |
| 20.0 | 72 | - | - | | |
| 14.0 | 69 | - | - | | |
| 10.0 | 68 | - | - | | |
| 6.30 | 66 | - | - | | |
| 5.00 | 65 | - | - | | |
| 3.35 | 63 | - | - | | |
| 2.00 | 61 | - | - | | |
| 1.18 | 60 | - | - | | |
| 0.600 | 59 | - | - | | |
| 0.425 | 56 | - | - | | |
| 0.300 | 49 | - | - | | |
| 0.212 | 37 | - | - | | |
| 0.150 | 28 | - | - | | |
| 0.063 | 16 | - | - | | |

**GRADING CLASSIFICATION (SHW TABLE 6/2)**

-

Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.

**PERCENTAGE SOIL TYPES**

| CLAY | SILT ₸ | SAND | GRAVEL | COBBLES |
|---|---|---|---|---|
| / | 16 | 45 | 39 | 0 |

**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**

| D10 | D60 | Specification |
|---|---|---|
| - | - | |
| UNIFORMITY COEFFICIENT - | | - |

**Remarks**

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

Sample does not meet minimum mass requirement for material type

**SIEVE ANALYSIS - BS 1377 : Part 2 : 1990 : CLAUSE 9.2**

**BAM RITCHIES**
**VICTORIA NORTH HIF**
**INFRASTRUCTURE & ENABLING WORKS**

MATtest Limited
materials testing & consultancy

| | |
|---|---|
| Borehole | BH324 |
| Sample | WA1030387 |
| Depth (m) | 6.00-6.45 |




| SIEVING | | | | SEDIMENTATION | |
|---|---|---|---|---|---|
| Sieve Size (mm) | Percentage Passing (%) | Specification Not Applicable Lower % | Specification Not Applicable Upper % | Particle Size (mm) | Percentage Passing (%) |
| 500.0 | 100 | - | - | 0.020 | |
| 300.0 | 100 | - | - | 0.006 | |
| 125.0 | 100 | - | - | 0.002 | |
| 90.0 | 100 | - | - | | |
| 75.0 | 100 | - | - | | |
| 63.0 | 82 | - | - | | |
| 50.0 | 82 | - | - | | |
| 37.5 | 82 | - | - | | |
| 28.0 | 82 | - | - | | |
| 20.0 | 81 | - | - | | |
| 14.0 | 77 | - | - | | |
| 10.0 | 73 | - | - | | |
| 6.30 | 65 | - | - | | |
| 5.00 | 61 | - | - | | |
| 3.35 | 53 | - | - | | |
| 2.00 | 43 | - | - | | |
| 1.18 | 39 | - | - | | |
| 0.600 | 33 | - | - | | |
| 0.425 | 31 | - | - | | |
| 0.300 | 29 | - | - | | |
| 0.212 | 27 | - | - | | |
| 0.150 | 24 | - | - | | |
| 0.063 | 19 | - | - | | |

**GRADING CLASSIFICATION (SHW TABLE 6/2)**

-

Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.

**PERCENTAGE SOIL TYPES**

| CLAY | SILT ₸ | SAND | GRAVEL | COBBLES |
|---|---|---|---|---|
| / | 19 | 24 | 39 | 18 |

**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**

| D10 | D60 | Specification |
|---|---|---|
| - | - | |
| **UNIFORMITY COEFFICIENT** | - | - |

**Remarks**

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

Sample does not meet minimum mass requirement for material type

**SIEVE ANALYSIS - BS 1377 : Part 2 : 1990 : CLAUSE 9.2**

# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 02-1**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 04th May 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH323, WA1033795, 1.50-1.90m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH323, WA1033795, 1.50-1.90m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Brown fine to coarse SAND and GRAVEL with pockets of clay. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 04th May 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

Date 17/05/2022

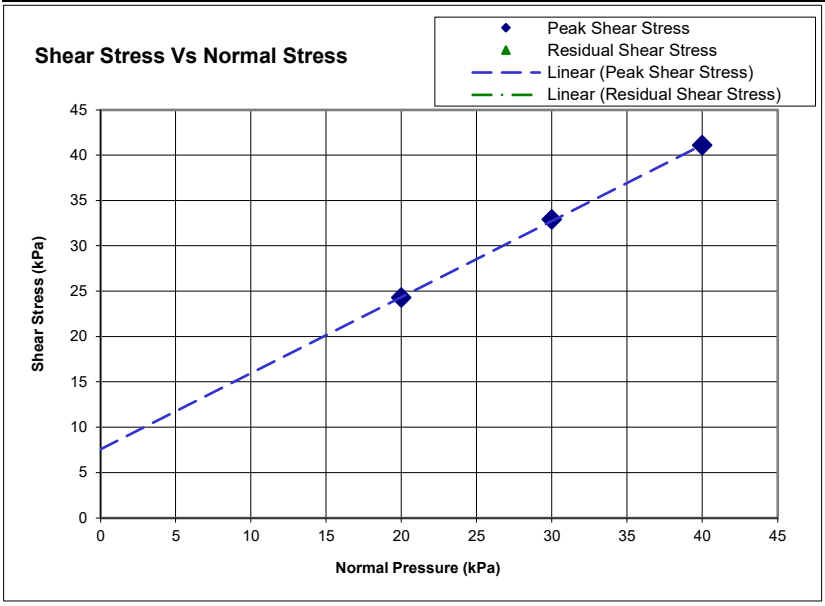
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materials testing & consultancy

**Certificate No :** **22/393 - 02-1**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.0 | 23.1 | 23.0 | | |
| | Moisture Content | % | 13 | 13 | 13 | | |
| | Bulk Density | $Mg/m^3$ | 2.07 | 2.06 | 2.06 | | |
| | Dry Density | $Mg/m^3$ | 1.83 | 1.83 | 1.83 | | |
| | Voids Ratio | | 0.444 | 0.447 | 0.450 | | |
| | Degree of Saturation | % | 75 | 75 | 75 | | |
| Consol | Consolidation / Normal Stress | kPa | 20 | 30 | 40 | | |
| | Change in height | mm | 0.23 | 0.33 | 0.61 | | |
| | Voids ratio | | 0.430 | 0.426 | 0.411 | | |
| Final | Voids ratio | | 0.448 | 0.444 | 0.426 | | |
| | Moisture Content | % | 15 | 15 | 15 | | |
| | Saturation | % | 90 | 89 | 92 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 1.60 | 2.20 | 1.70 | | |
| | Shear stress | kPa | 24.301 | 32.888 | 41.088 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

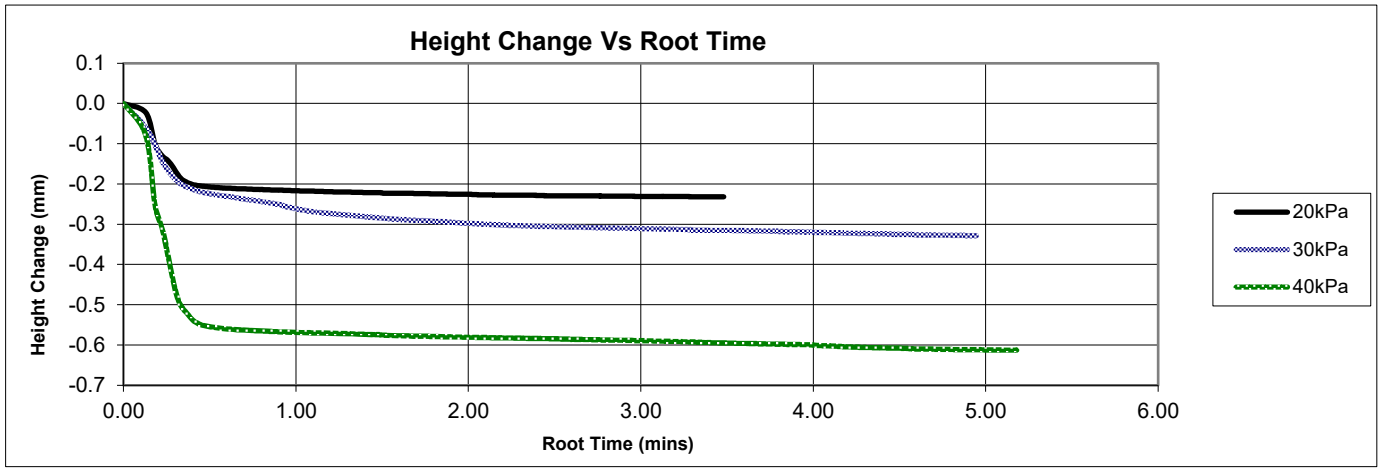


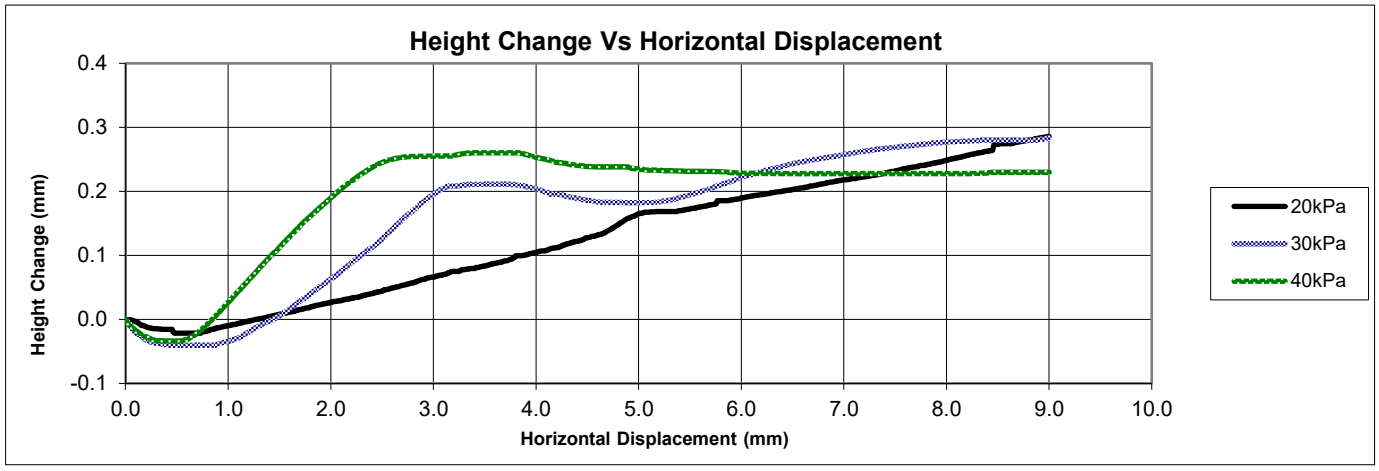

**Shear Strength Parameters**

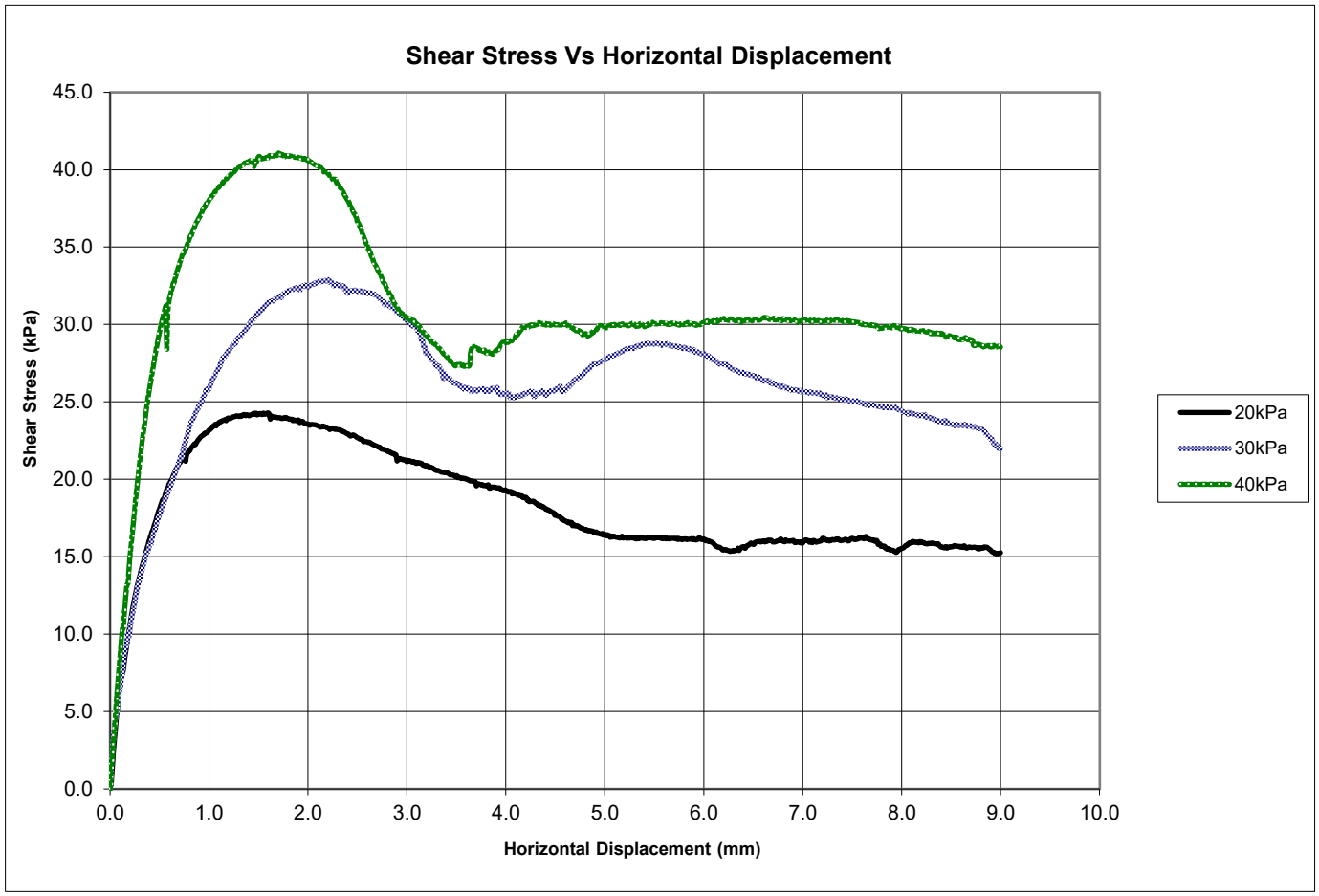
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 7.6 | - |
| $\phi'$ | degrees | 40.0 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 02-1**



# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 02-2**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 04th May 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH324, WA1030384, 5.00-5.45m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH324, WA1030384, 5.00-5.45m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Black fine to coarse ASHFILL with pockets of clay. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 04th May 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
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Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

Date 17/05/2022

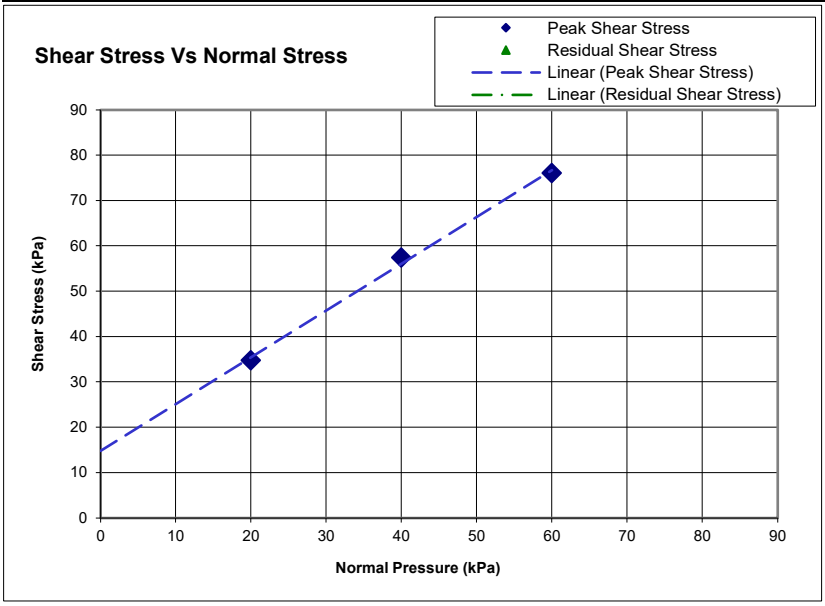
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2643

MATtest Limited
materials testing & consultancy

**Certificate No :** **22/393 - 02-2**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.0 | 23.0 | 23.1 | | |
| | Moisture Content | % | 19 | 19 | 19 | | |
| | Bulk Density | $Mg/m^3$ | 1.53 | 1.52 | 1.52 | | |
| | Dry Density | $Mg/m^3$ | 1.29 | 1.28 | 1.28 | | |
| | Voids Ratio | | 1.060 | 1.071 | 1.070 | | |
| | Degree of Saturation | % | 48 | 47 | 47 | | |
| Consol | Consolidation / Normal Stress | kPa | 20 | 40 | 60 | | |
| | Change in height | mm | 0.25 | 0.31 | 0.45 | | |
| | Voids ratio | | 1.038 | 1.043 | 1.029 | | |
| Final | Voids ratio | | 1.066 | 1.082 | 1.102 | | |
| | Moisture Content | % | 23 | 22 | 22 | | |
| | Saturation | % | 57 | 55 | 54 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 1.42 | 1.40 | 1.68 | | |
| | Shear stress | kPa | 34.767 | 57.382 | 76.062 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

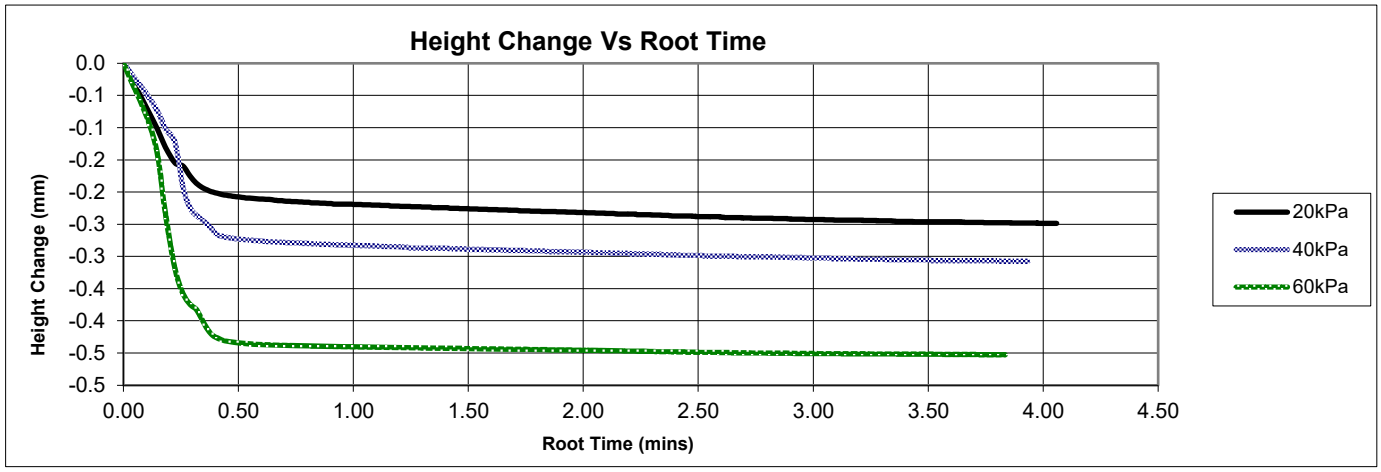


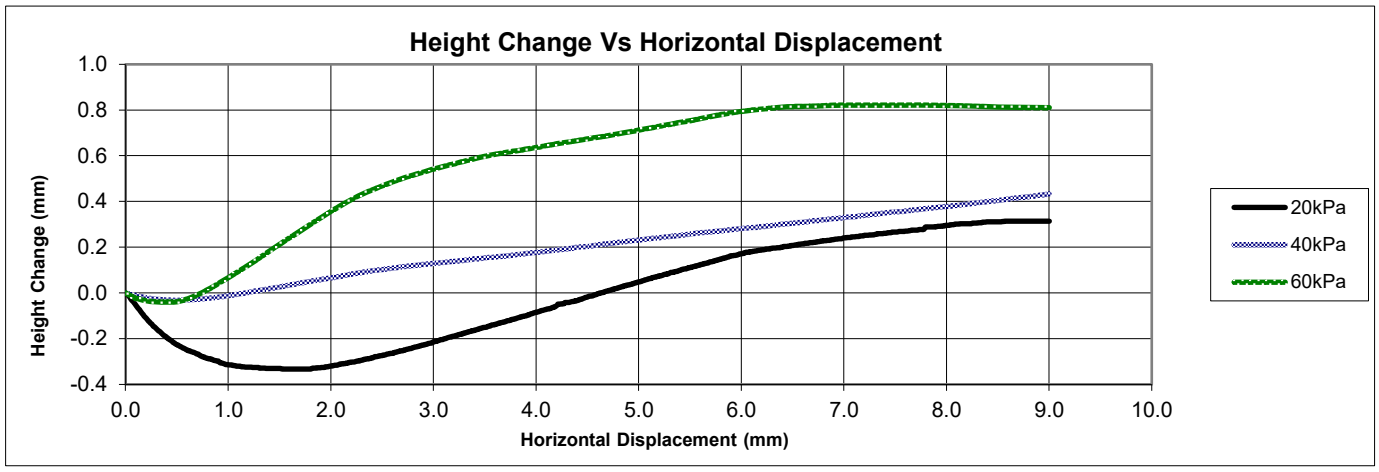

**Shear Strength Parameters**

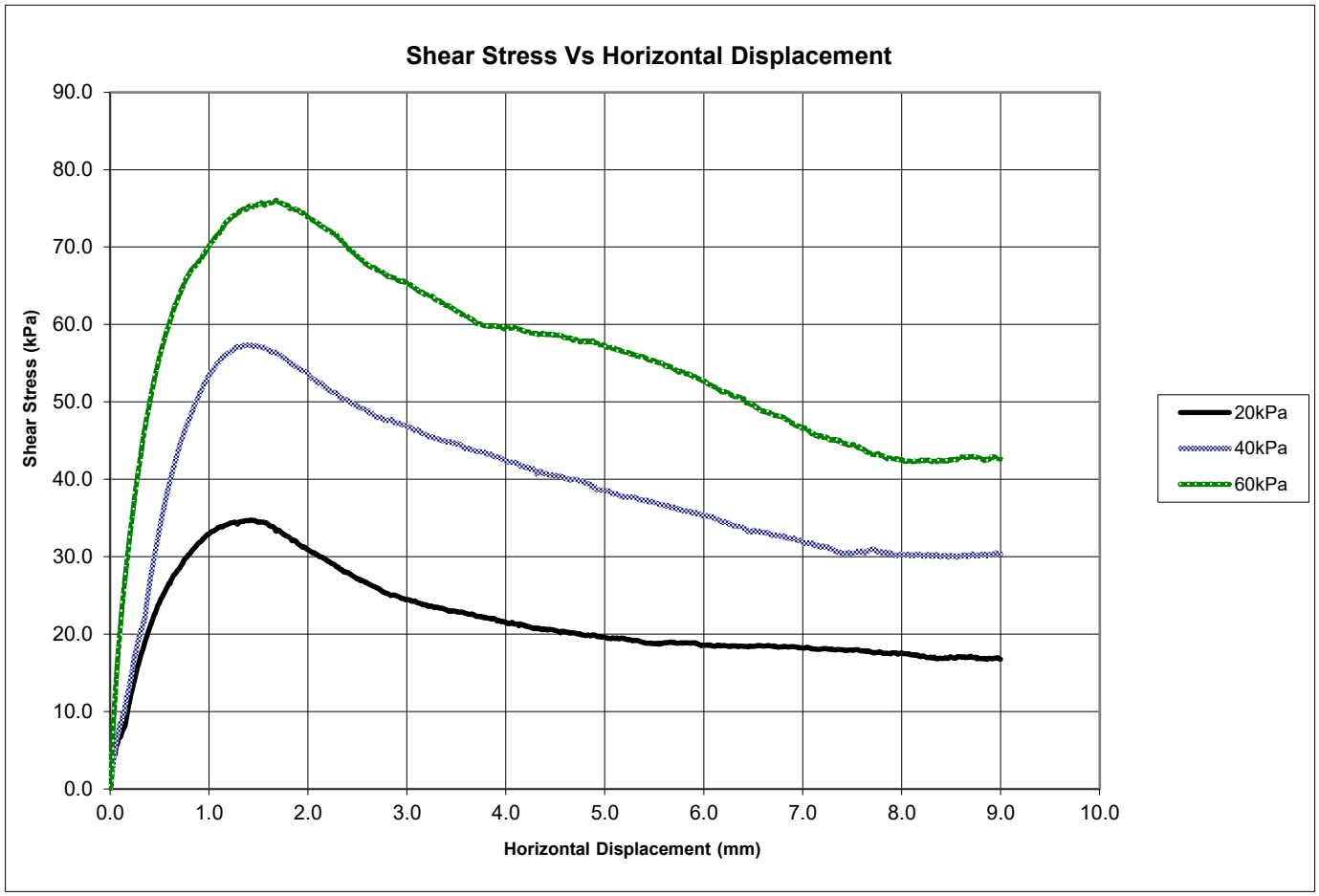
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 14.8 | - |
| $\phi'$ | degrees | 46.0 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 02-2**



# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 02-3**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 04th May 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH324, WA1030387, 6.00-6.45m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH324, WA1030387, 6.00-6.45m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Black fine to coarse ASHFILL with cobbles and pockets of clay. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 04th May 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

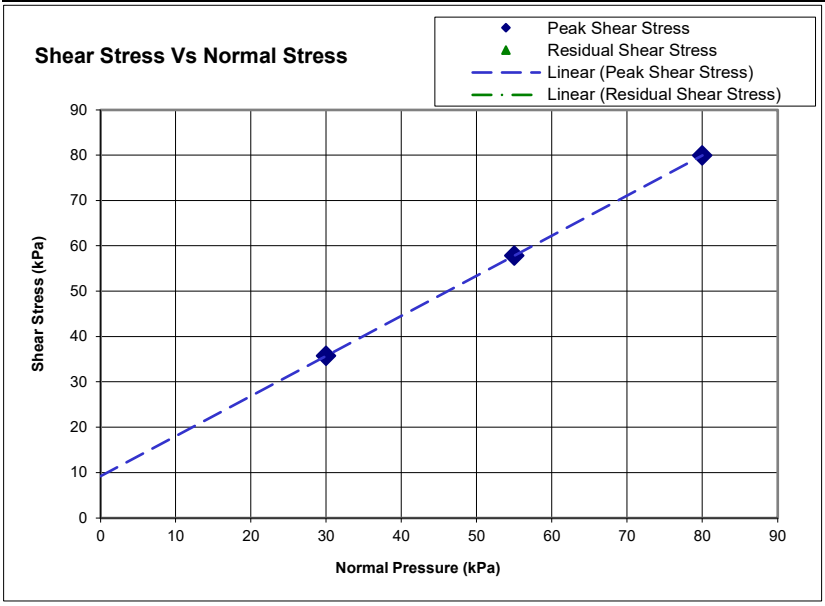
Date 17/05/2022

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2643

**Certificate No :** **22/393 - 02-3**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.0 | 23.0 | 23.1 | | |
| | Moisture Content | % | 22 | 22 | 22 | | |
| | Bulk Density | $Mg/m^3$ | 1.71 | 1.72 | 1.71 | | |
| | Dry Density | $Mg/m^3$ | 1.41 | 1.42 | 1.41 | | |
| | Voids Ratio | | 0.885 | 0.872 | 0.882 | | |
| | Degree of Saturation | % | 65 | 66 | 65 | | |
| Consol | Consolidation / Normal Stress | kPa | 30 | 55 | 80 | | |
| | Change in height | mm | 0.34 | 0.54 | 1.19 | | |
| | Voids ratio | | 0.856 | 0.828 | 0.785 | | |
| Final | Voids ratio | | 0.901 | 0.876 | 0.816 | | |
| | Moisture Content | % | 25 | 24 | 24 | | |
| | Saturation | % | 74 | 74 | 79 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 1.63 | 1.91 | 1.86 | | |
| | Shear stress | kPa | 35.711 | 57.861 | 79.920 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

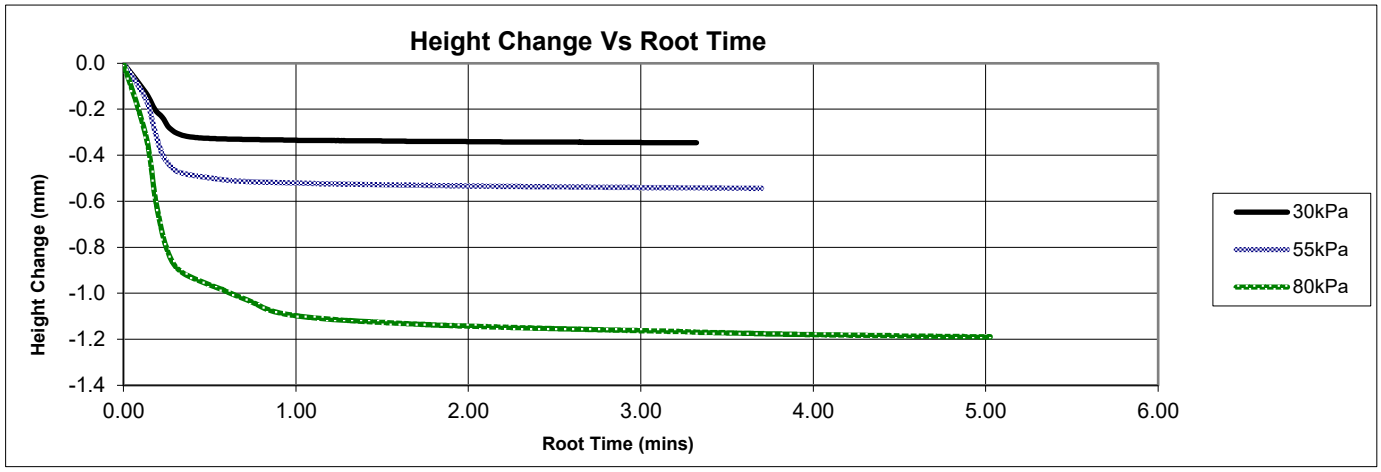


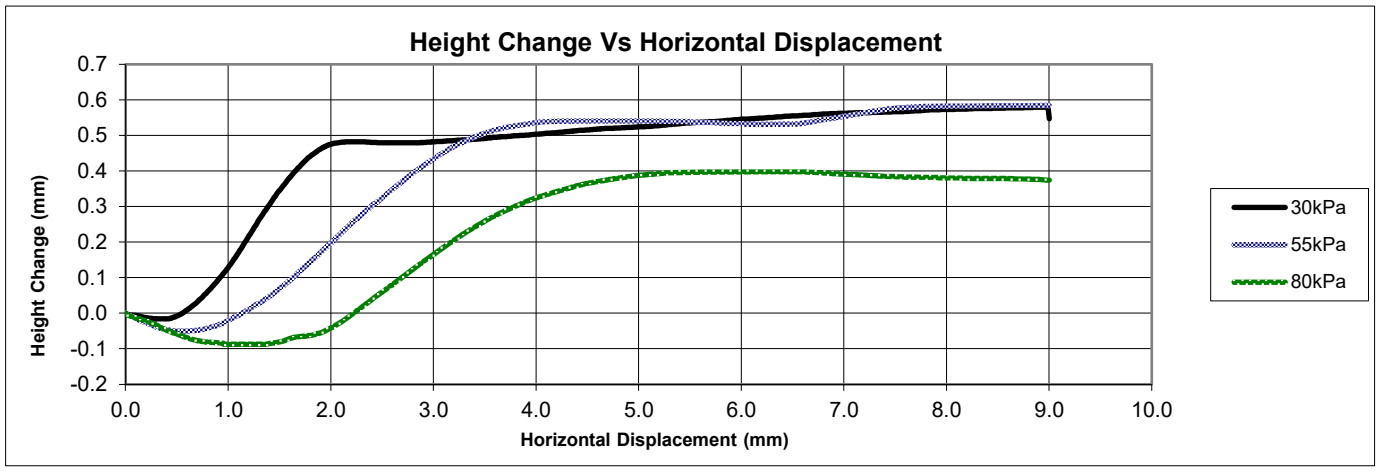

**Shear Strength Parameters**

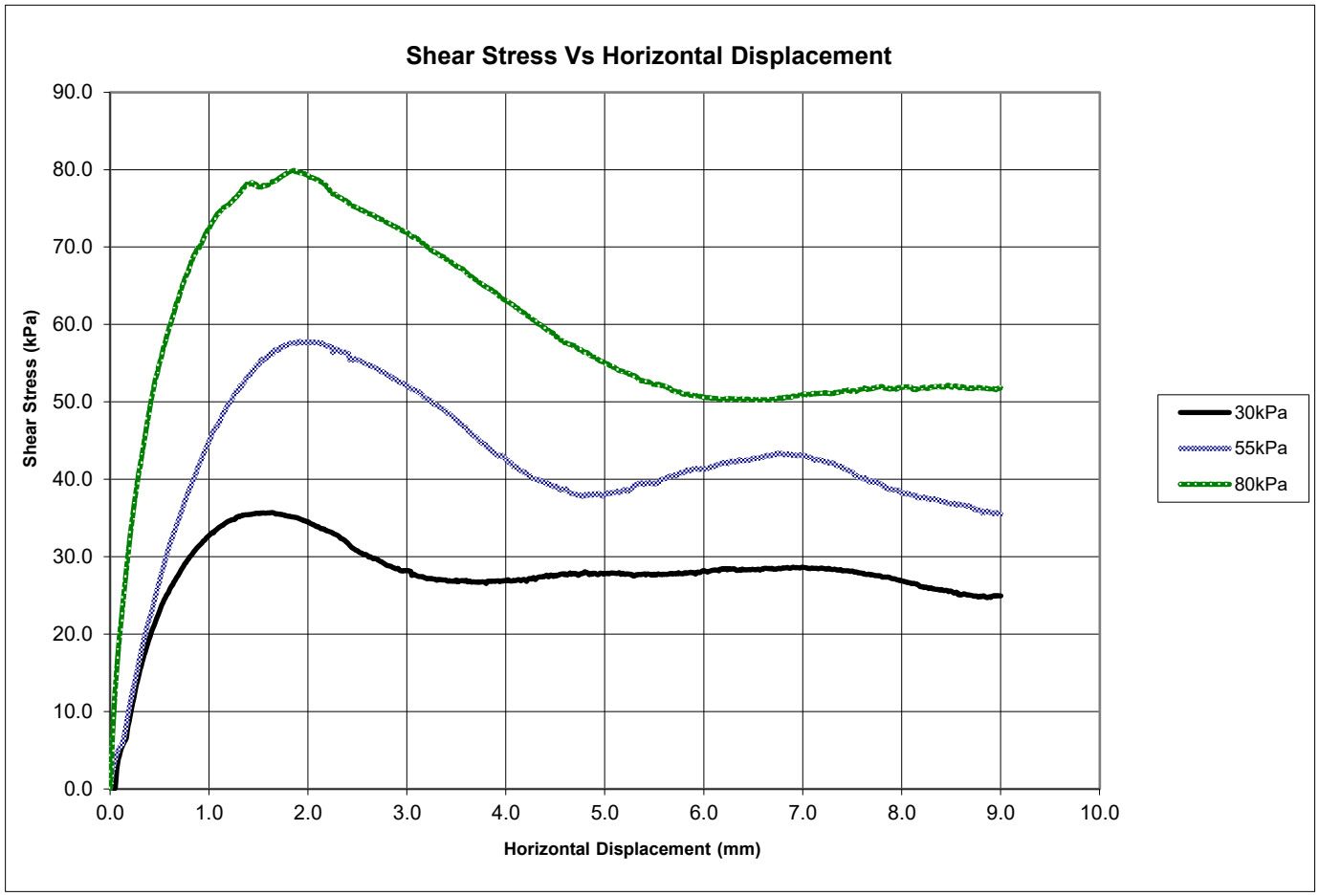
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 9.2 | - |
| $\phi'$ | degrees | 41.5 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 02-3**



# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 02-4**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 04th May 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH324, WA1030390, 7.50-7.95m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH324, WA1030390, 7.50-7.95m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Black slightly clayey fine to coarse ASHFILL with cobbles. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 04th May 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

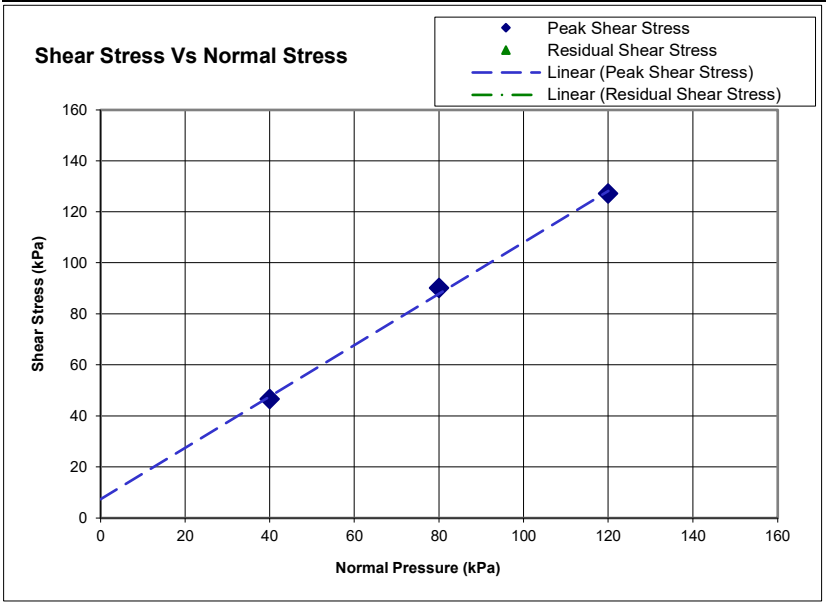
Date 17/05/2022

UKAS TESTING
2643

**Certificate No :** **22/393 - 02-4**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.0 | 23.1 | 23.1 | | |
| | Moisture Content | % | 23 | 23 | 23 | | |
| | Bulk Density | $Mg/m^3$ | 1.62 | 1.63 | 1.62 | | |
| | Dry Density | $Mg/m^3$ | 1.32 | 1.32 | 1.32 | | |
| | Voids Ratio | | 1.005 | 1.000 | 1.002 | | |
| | Degree of Saturation | % | 60 | 60 | 60 | | |
| Consol | Consolidation / Normal Stress | kPa | 40 | 80 | 120 | | |
| | Change in height | mm | 0.36 | 0.45 | 0.82 | | |
| | Voids ratio | | 0.973 | 0.962 | 0.931 | | |
| Final | Voids ratio | | 0.989 | 0.997 | 0.946 | | |
| | Moisture Content | % | 29 | 28 | 27 | | |
| | Saturation | % | 78 | 75 | 77 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 1.95 | 2.33 | 2.78 | | |
| | Shear stress | kPa | 46.564 | 90.090 | 127.205 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

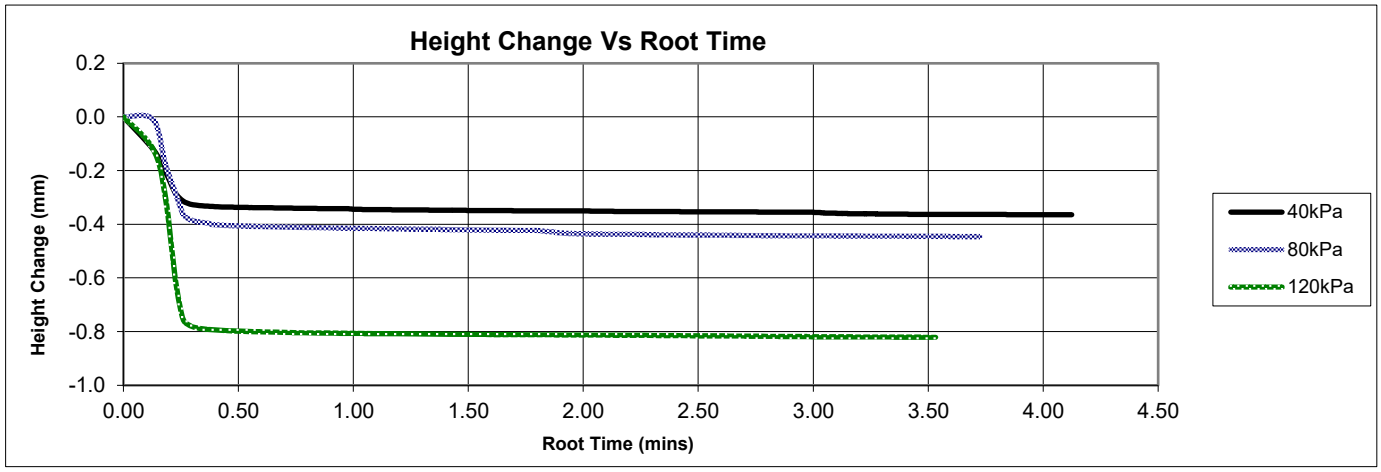


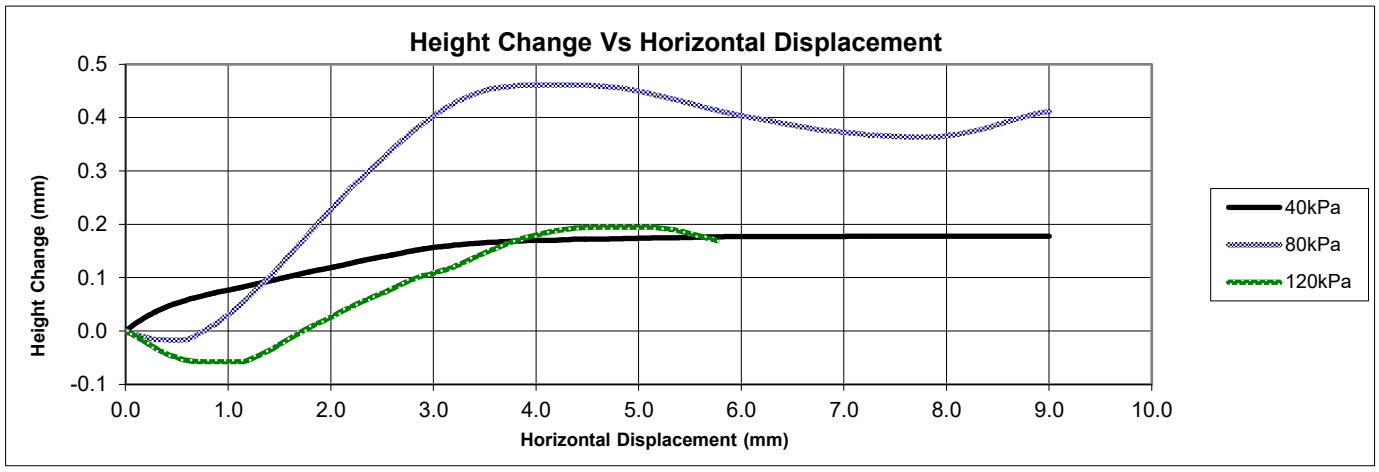

**Shear Strength Parameters**

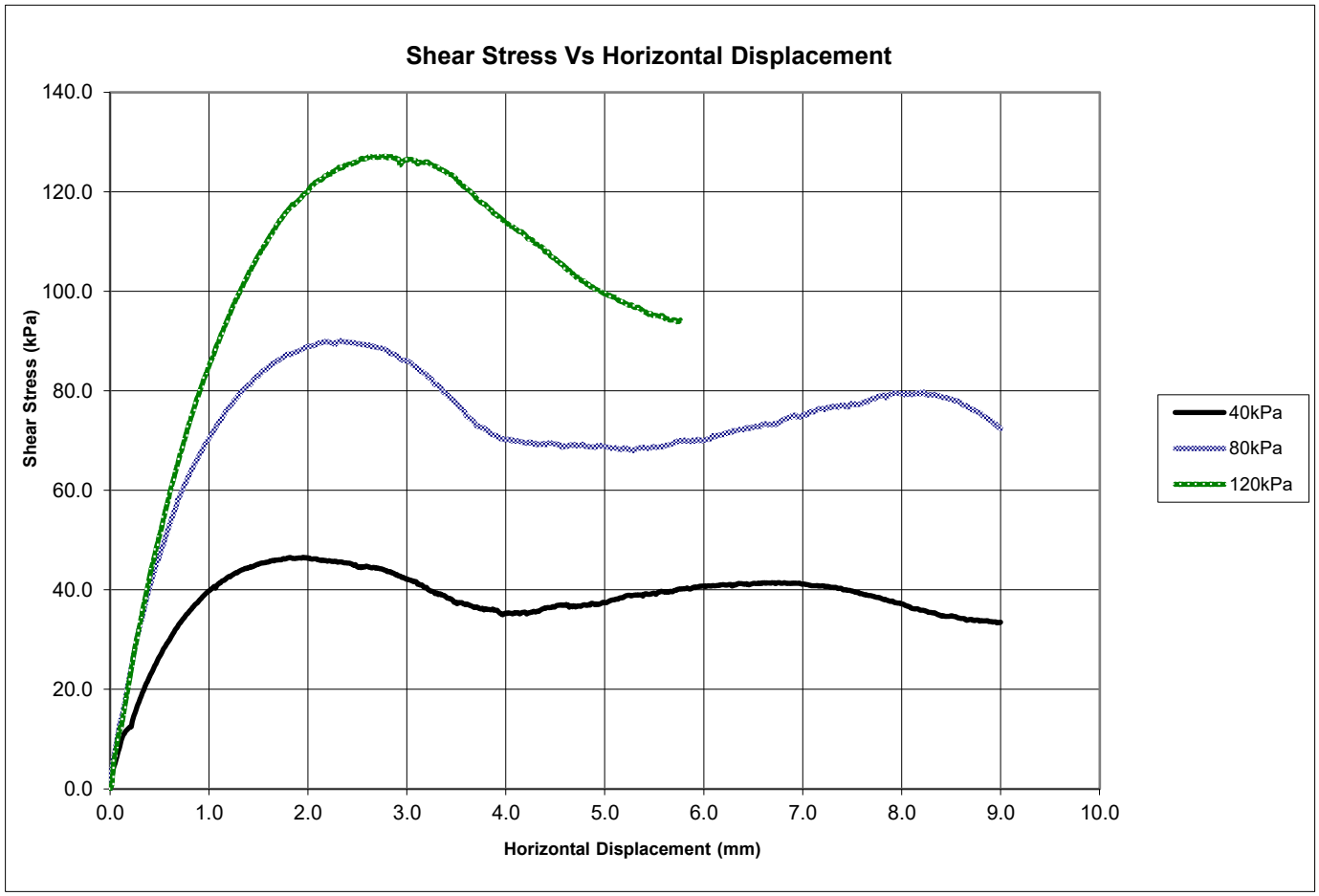
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 7.3 | - |
| $\phi'$ | degrees | 45.0 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 02-4**



# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 03**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

## LABORATORY TESTING OF SOIL

### Introduction

We refer to samples taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 12th May 2022.

### Material & Source

| | | |
|---|---|---|
| Sample Reference | : | See Report Plates |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | See Report Plates |
| Description | : | See Page 2 |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 12th May 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |

### Test Results

As Detailed On Page 2 to Page 4 inclusive

### Comments

The results contained in this report relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

### Remarks

**Approved for Issue**

T McLelland (Director)

Date 16/06/2022

UKAS TESTING
2643

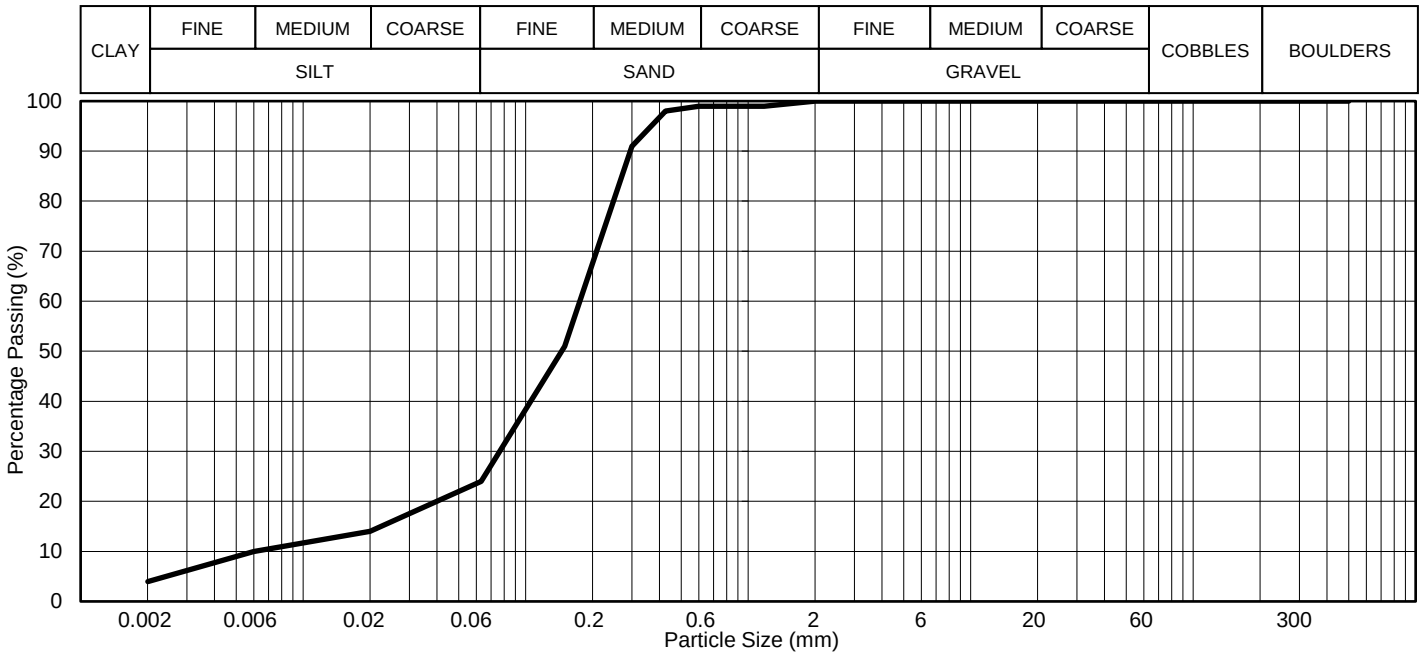
| BOREHOLE | SAMPLE | DEPTH (m) | SAMPLE DESCRIPTION |
|---|---|---|---|
| BH314 | WA1029609 | 3.00-3.45 | Brown gravelly sandy CLAY. Gravel is fine to coarse. |
| BH320 | WA1033307 | 4.60-5.00 | Brown very silty fine to coarse SAND. |
| BH320 | WA1033311 | 6.60-6.70 | Brown fine to coarse SAND and GRAVEL with pockets of sandy clay. |

## SUMMARY OF SAMPLE DESCRIPTIONS

**BAM RITCHIES**
**VICTORIA NORTH HIF**
**INFRASTRUCTURE & ENABLING WORKS**

MATtest Limited
materials testing & consultancy

| | |
|---|---|
| Borehole | BH320 |
| Sample | WA1033307 |
| Depth (m) | 4.60-5.00 |




| SIEVING | | | | SEDIMENTATION | |
|---|---|---|---|---|---|
| Sieve Size (mm) | Percentage Passing (%) | Specification Not Applicable Lower % | Specification Not Applicable Upper % | Particle Size (mm) | Percentage Passing (%) |
| 500.0 | 100 | - | - | 0.020 | 14 |
| 300.0 | 100 | - | - | 0.006 | 10 |
| 125.0 | 100 | - | - | 0.002 | 4 |
| 90.0 | 100 | - | - | | |
| 75.0 | 100 | - | - | **GRADING CLASSIFICATION (SHW TABLE 6/2)** | |
| 63.0 | 100 | - | - | - | |
| 50.0 | 100 | - | - | | |
| 37.5 | 100 | - | - | Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW. | |
| 28.0 | 100 | - | - | | |
| 20.0 | 100 | - | - | | |
| 14.0 | 100 | - | - | | |
| 10.0 | 100 | - | - | **PERCENTAGE SOIL TYPES** | |
| 6.30 | 100 | - | - | | |
| 5.00 | 100 | - | - | | |
| 3.35 | 100 | - | - | | |
| 2.00 | 100 | - | - | | |
| 1.18 | 99 | - | - | **UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)** | |
| 0.600 | 99 | - | - | | |
| 0.425 | 98 | - | - | | |
| 0.300 | 91 | - | - | | |
| 0.212 | 71 | - | - | | |
| 0.150 | 51 | - | - | | |
| 0.063 | 24 | - | - | | |

| CLAY | SILT ₸ | SAND | GRAVEL | COBBLES |
|---|---|---|---|---|
| 4 | 20 | 76 | 0 | 0 |

| D10 | D60 | Specification |
|---|---|---|
| - | - | |
| **UNIFORMITY COEFFICIENT** | - | - |

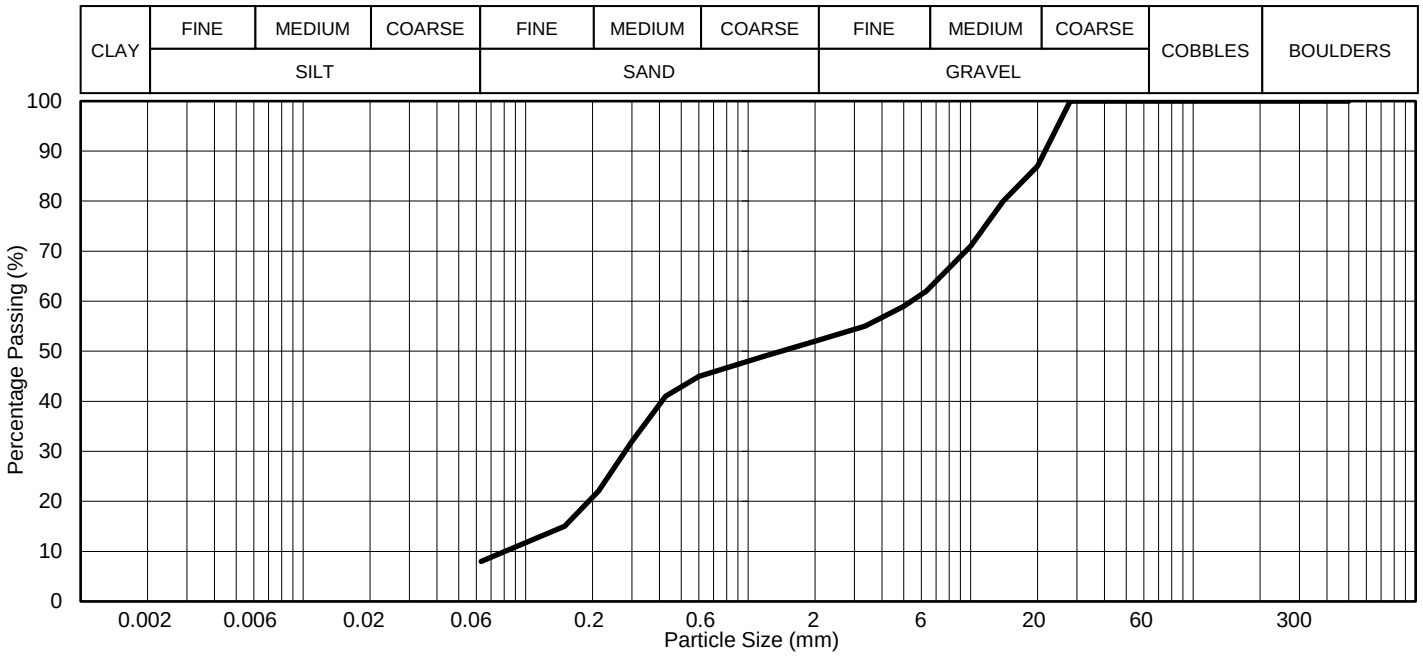
**Remarks**

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

**BAM RITCHIES**
**VICTORIA NORTH HIF**
**INFRASTRUCTURE & ENABLING WORKS**

MATtest Limited
materials testing & consultancy

| | |
|---|---|
| Borehole | BH320 |
| Sample | WA1033311 |
| Depth (m) | 6.60-6.70 |




| SIEVING | | | | SEDIMENTATION | |
|---|---|---|---|---|---|
| Sieve Size (mm) | Percentage Passing (%) | Specification Not Applicable | | Particle Size (mm) | Percentage Passing (%) |
| | | Lower % | Upper % | | |
| 500.0 | 100 | - | - | 0.020 | |
| 300.0 | 100 | - | - | 0.006 | |
| 125.0 | 100 | - | - | 0.002 | |
| 90.0 | 100 | - | - | | |
| 75.0 | 100 | - | - | **GRADING CLASSIFICATION (SHW TABLE 6/2)** | |
| 63.0 | 100 | - | - | - | |
| 50.0 | 100 | - | - | | |
| 37.5 | 100 | - | - | Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW. | |
| 28.0 | 100 | - | - | | |
| 20.0 | 87 | - | - | | |
| 14.0 | 80 | - | - | | |
| 10.0 | 71 | - | - | **PERCENTAGE SOIL TYPES** | |
| 6.30 | 62 | - | - | | |
| 5.00 | 59 | - | - | | |
| 3.35 | 55 | - | - | | |
| 2.00 | 52 | - | - | | |
| 1.18 | 49 | - | - | **UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)** | |
| 0.600 | 45 | - | - | | |
| 0.425 | 41 | - | - | | |
| 0.300 | 32 | - | - | | |
| 0.212 | 22 | - | - | | |
| 0.150 | 15 | - | - | | |
| 0.063 | 8 | - | - | | |

| CLAY | SILT ₸ | SAND | GRAVEL | COBBLES |
|---|---|---|---|---|
| / | 8 | 44 | 48 | 0 |

| D10 | D60 | Specification |
|---|---|---|
| - | - | |
| **UNIFORMITY COEFFICIENT** | **-** | **-** |

**Remarks**

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

Sample does not meet minimum mass requirement for material type

**SIEVE ANALYSIS - BS 1377 : Part 2 : 1990 : CLAUSE 9.2**

# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 03-1**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 12th May 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH314, WA1029609, 3.00-3.45m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH314, WA1029609, 3.00-3.45m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Brown gravelly sandy CLAY. Gravel is fine to coarse. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 12th May 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.3
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

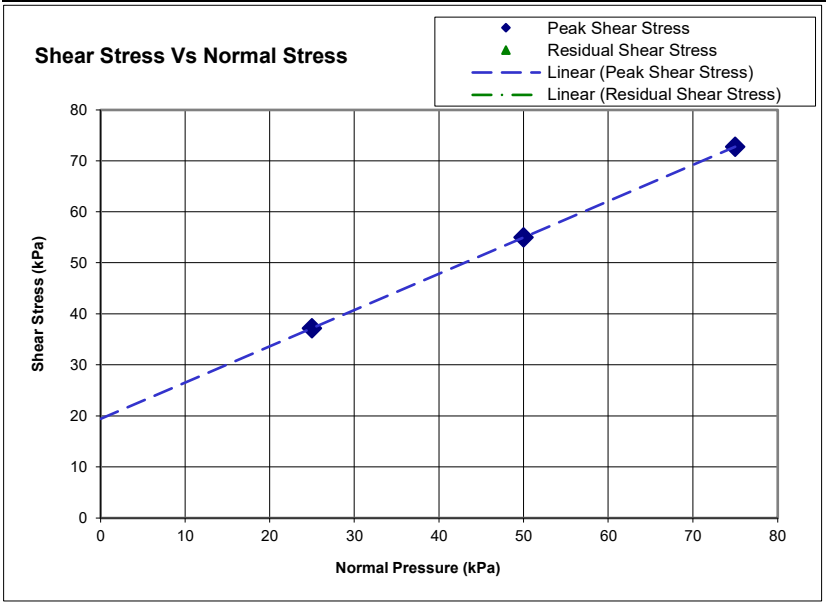
Date 16/06/2022

UKAS TESTING
2643

**Certificate No :** **22/393 - 03-1**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.0 | 23.1 | 23.0 | | |
| | Moisture Content | % | 16 | 16 | 16 | | |
| | Bulk Density | $Mg/m^3$ | 2.01 | 2.01 | 2.01 | | |
| | Dry Density | $Mg/m^3$ | 1.73 | 1.73 | 1.74 | | |
| | Voids Ratio | | 0.528 | 0.528 | 0.522 | | |
| | Degree of Saturation | % | 79 | 79 | 80 | | |
| Consol | Consolidation / Normal Stress | kPa | 25 | 50 | 75 | | |
| | Change in height | mm | 0.33 | 0.80 | 1.68 | | |
| | Voids ratio | | 0.505 | 0.476 | 0.411 | | |
| Final | Voids ratio | | 0.529 | 0.474 | 0.387 | | |
| | Moisture Content | % | 19 | 18 | 18 | | |
| | Saturation | % | 96 | 100 | 100 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 1.85 | 4.54 | 4.64 | | |
| | Shear stress | kPa | 37.184 | 54.971 | 72.740 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

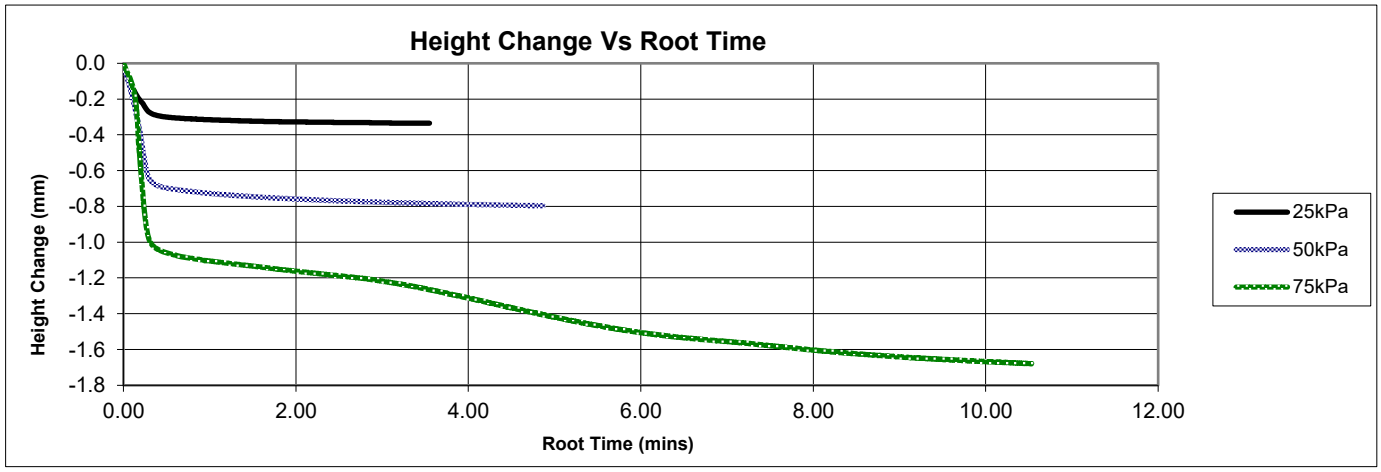


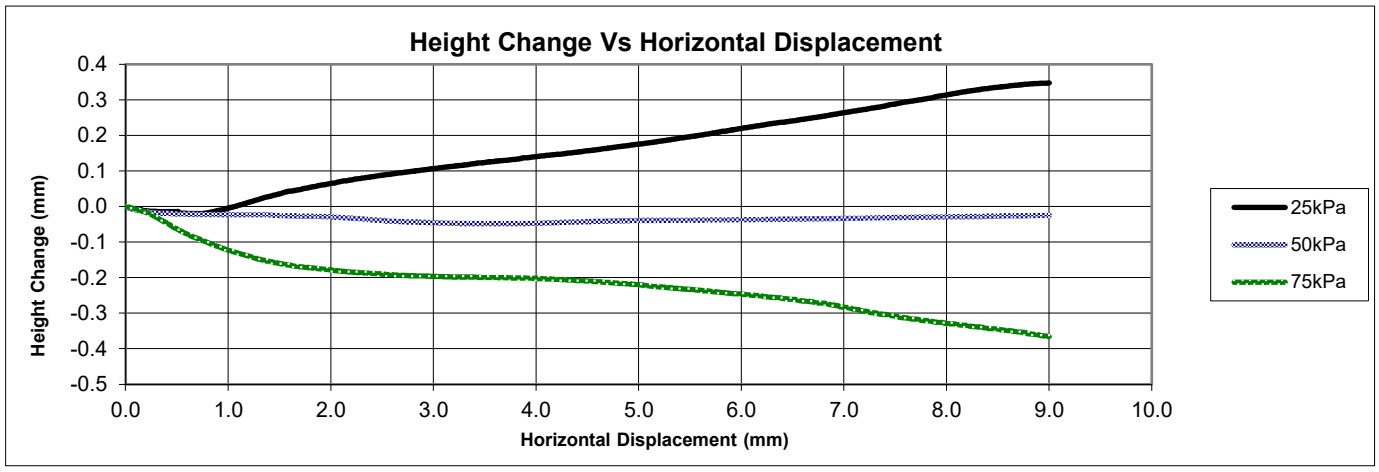

**Shear Strength Parameters**

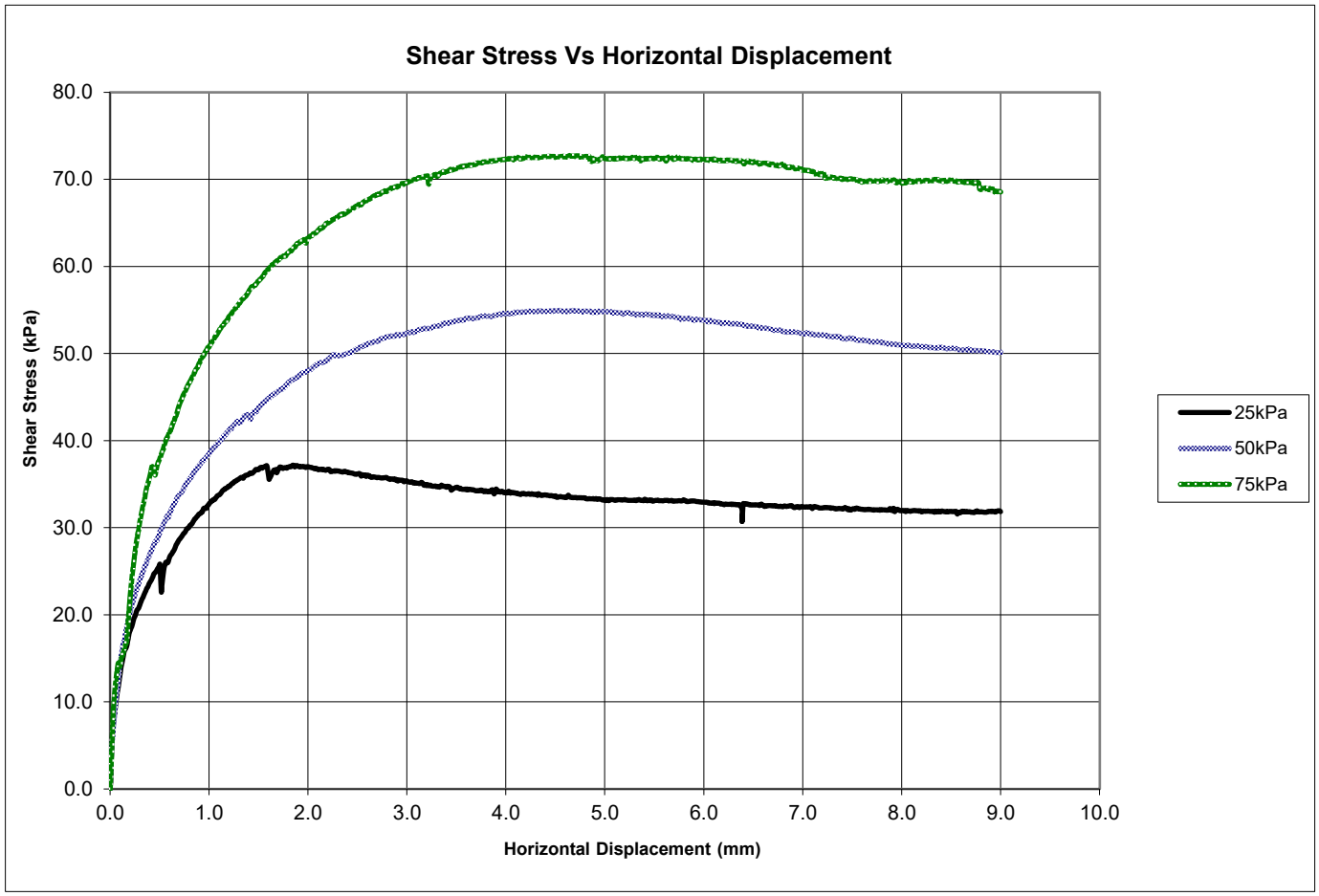
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 19.4 | - |
| $\phi'$ | degrees | 35.5 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 03-1**



# LABORATORY TEST CERTIFICATE

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10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 03-2**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 12th May 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH320, WA1033307, 4.60-5.00m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH320, WA1033307, 4.60-5.00m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Brown very silty fine to coarse SAND. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 12th May 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

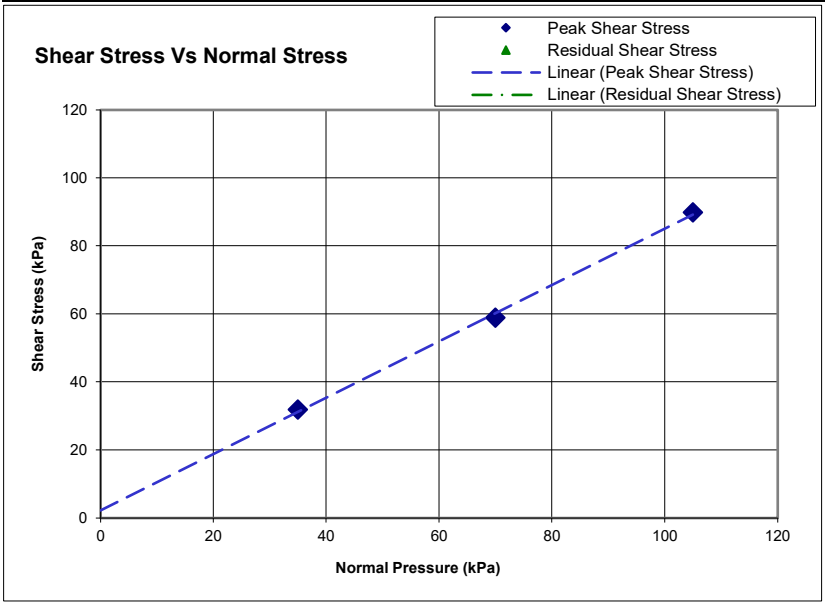
Date 16/06/2022

UKAS TESTING
2643

**Certificate No :** **22/393 - 03-2**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.1 | 23.0 | 23.1 | | |
| | Moisture Content | % | 20 | 20 | 20 | | |
| | Bulk Density | $Mg/m^3$ | 1.94 | 1.94 | 1.95 | | |
| | Dry Density | $Mg/m^3$ | 1.61 | 1.62 | 1.62 | | |
| | Voids Ratio | | 0.646 | 0.639 | 0.635 | | |
| | Degree of Saturation | % | 83 | 84 | 84 | | |
| Consol | Consolidation / Normal Stress | kPa | 35 | 70 | 105 | | |
| | Change in height | mm | 1.40 | 1.58 | 1.73 | | |
| | Voids ratio | | 0.546 | 0.527 | 0.513 | | |
| Final | Voids ratio | | 0.536 | 0.518 | 0.506 | | |
| | Moisture Content | % | 18 | 18 | 17 | | |
| | Saturation | % | 87 | 90 | 91 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 8.93 | 3.50 | 2.88 | | |
| | Shear stress | kPa | 31.829 | 58.895 | 89.811 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

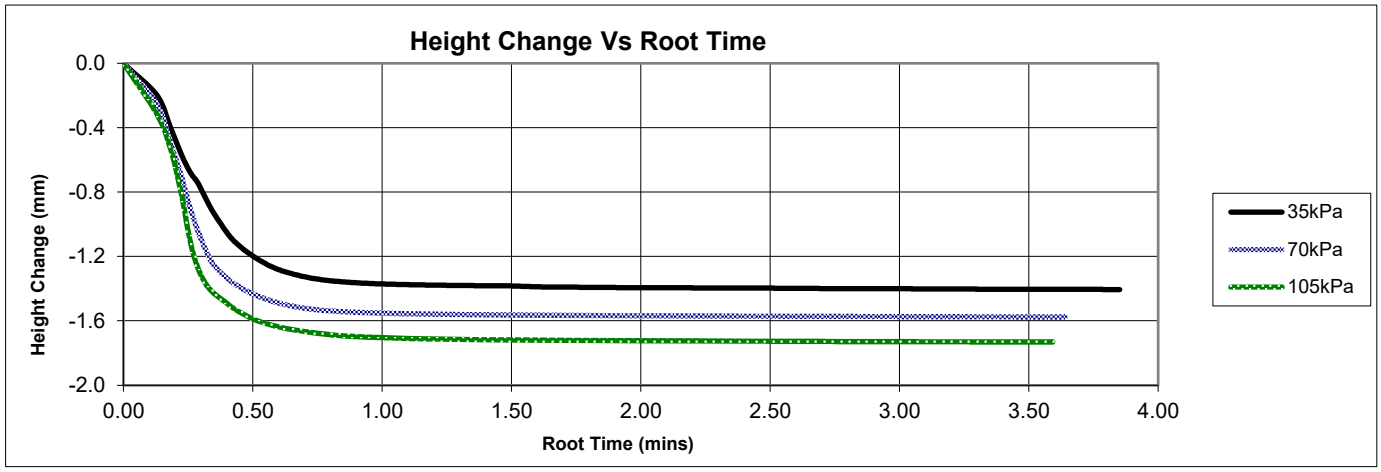


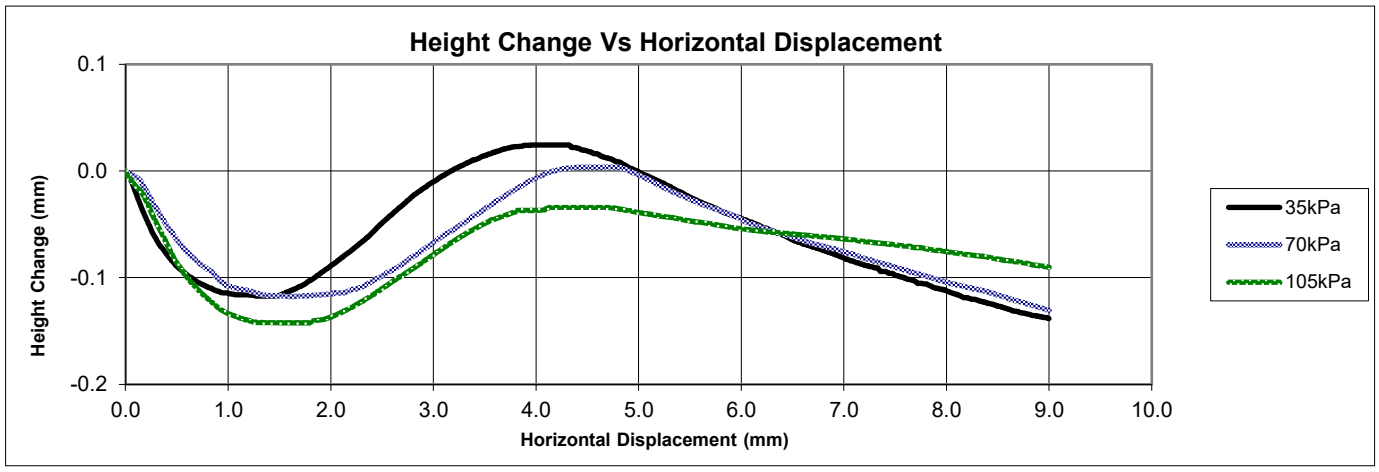

**Shear Strength Parameters**

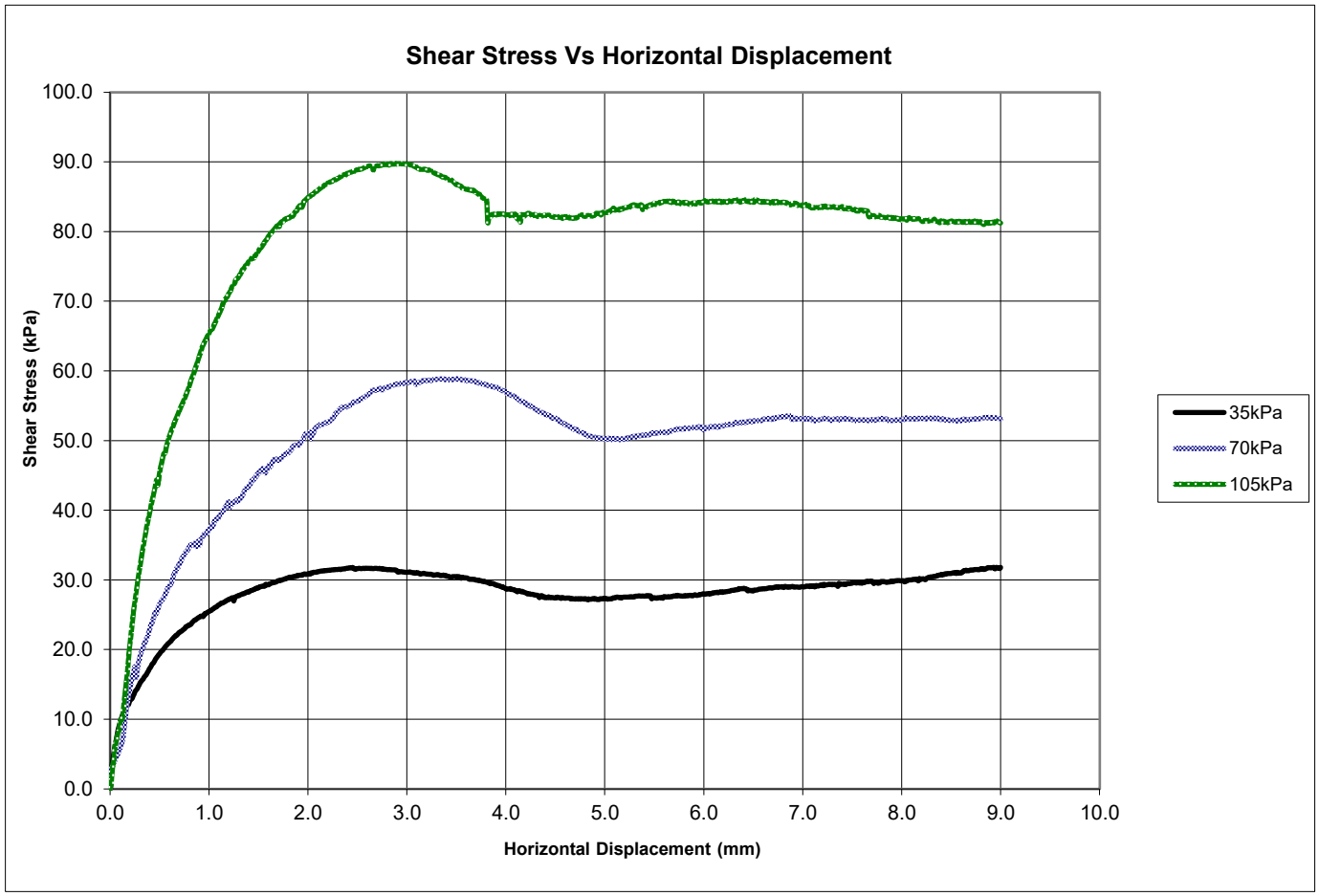
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 2.2 | - |
| $\phi'$ | degrees | 39.5 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 03-2**



# LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

**Certificate No :** **22/393 - 03-3**

**To :** **Jack Ross**

**Client :** **BAM Ritchies**
Glasgow Road
Kilsyth
Glasgow
G65 9BL

Dear Sirs,

**DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR**
**SMALL SHEARBOX APPARATUS**
**BS 1377 : Part 7 : 1990 : Clause 4.5.4**

**Introduction**

We refer to a sample taken from Victoria North HIF Infrastructure & Enabling Works and delivered to our laboratory on 12th May 2022.

**Material & Source**

| | | |
|---|---|---|
| Sample Reference | : | BH320, WA1033311, 6.60-6.70m |
| Sampled By | : | Client |
| Sampling Certificate | : | Not Supplied |
| Location | : | BH320, WA1033311, 6.60-6.70m |
| Designation (d/D) | : | Not Supplied |
| Description | : | Brown fine to coarse SAND and GRAVEL with pockets of sandy clay. |
| Date Sampled | : | Not Supplied |
| Date Tested | : | 12th May 2022 Onwards |
| Source | : | BAX.326R - Victoria North HIF Infrastructure & Enabling Works |
| Test Condition | : | Submerged |

**Test Results;**

As Detailed on Page 2 to 3 inclusive

**Comments;**
The results contained in this test certificate relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

**Test Notes**
Preparation - <2mm material prepared in accordance with BS 1377 : Part 7 : 1990 : Clause 4.4.4.5
Test specimen remoulded at natural moisture content using a 2.5kg rammer

**Approved for Issue**

T McLelland (Director)

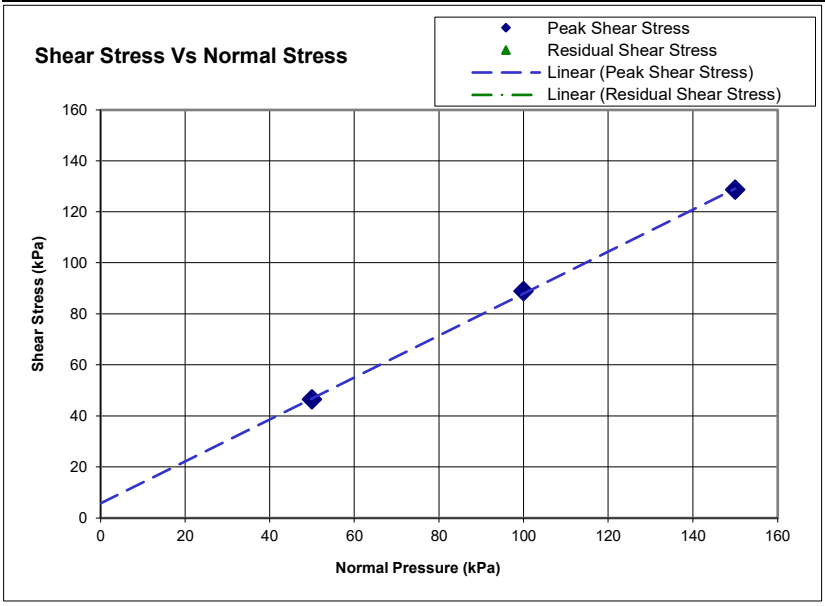
Date 16/06/2022

UKAS TESTING
2643

**Certificate No :** **22/393 - 03-3**

| **Specimen Details** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Initial | Particle Density (assumed) | $Mg/m^3$ | 2.65 | 2.65 | 2.65 | | |
| | Length | mm | 60.0 | 60.0 | 60.0 | | |
| | Width | mm | 60.1 | 60.1 | 60.1 | | |
| | Height | mm | 23.0 | 23.0 | 23.1 | | |
| | Moisture Content | % | 10 | 10 | 10 | | |
| | Bulk Density | $Mg/m^3$ | 1.86 | 1.87 | 1.86 | | |
| | Dry Density | $Mg/m^3$ | 1.69 | 1.69 | 1.68 | | |
| | Voids Ratio | | 0.570 | 0.566 | 0.576 | | |
| | Degree of Saturation | % | 48 | 48 | 48 | | |
| Consol | Consolidation / Normal Stress | kPa | 50 | 100 | 150 | | |
| | Change in height | mm | 0.84 | 1.11 | 1.17 | | |
| | Voids ratio | | 0.512 | 0.490 | 0.496 | | |
| Final | Voids ratio | | 0.518 | 0.480 | 0.499 | | |
| | Moisture Content | % | 19 | 19 | 18 | | |
| | Saturation | % | 98 | 100 | 95 | | |
| SHW | Optimum Moisture Content | % | - | | | | |
| | Maximum Dry Density | $Mg/m^3$ | - | | | | |

| **Shearing stage** | | No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| Rate of displacement | Peak | mm/min | 0.300 | 0.300 | 0.300 | | |
| | Residual | mm/min | | | | | |
| Peak values | Relative displacement | mm | 1.19 | 1.58 | 1.90 | | |
| | Shear stress | kPa | 46.480 | 88.883 | 128.711 | | |
| Residual values | No. of reversals | | | | | | |
| | Final displacement | mm | | | | | |
| | Shear stress | kPa | | | | | |

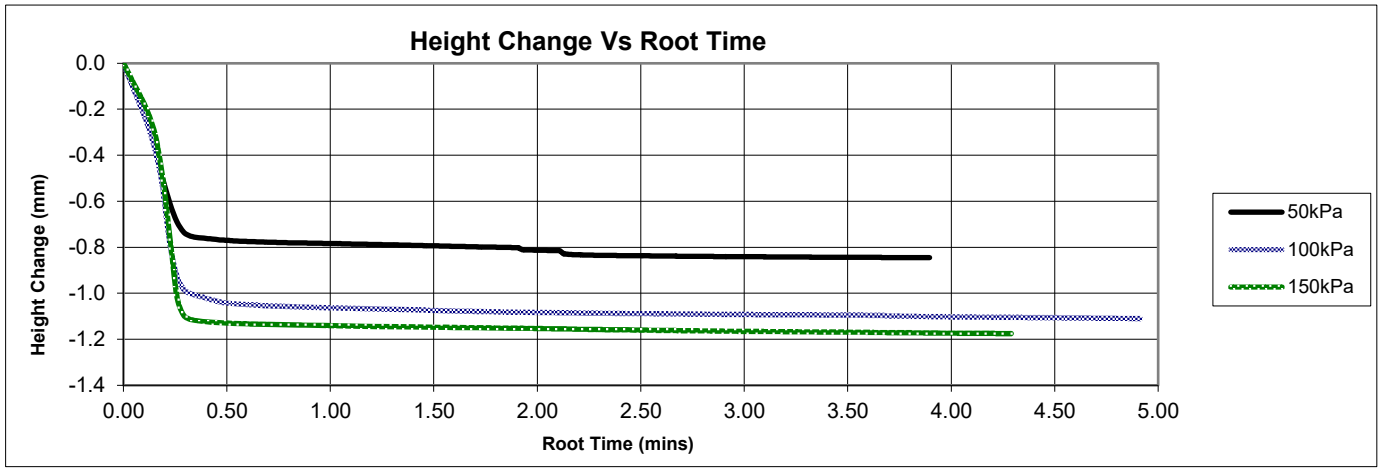


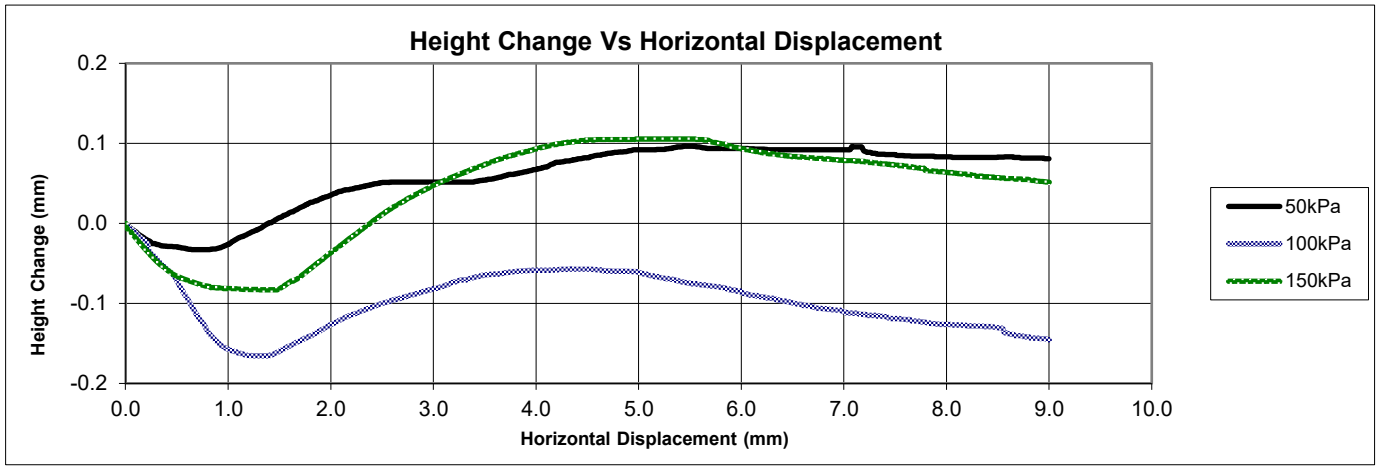

**Shear Strength Parameters**

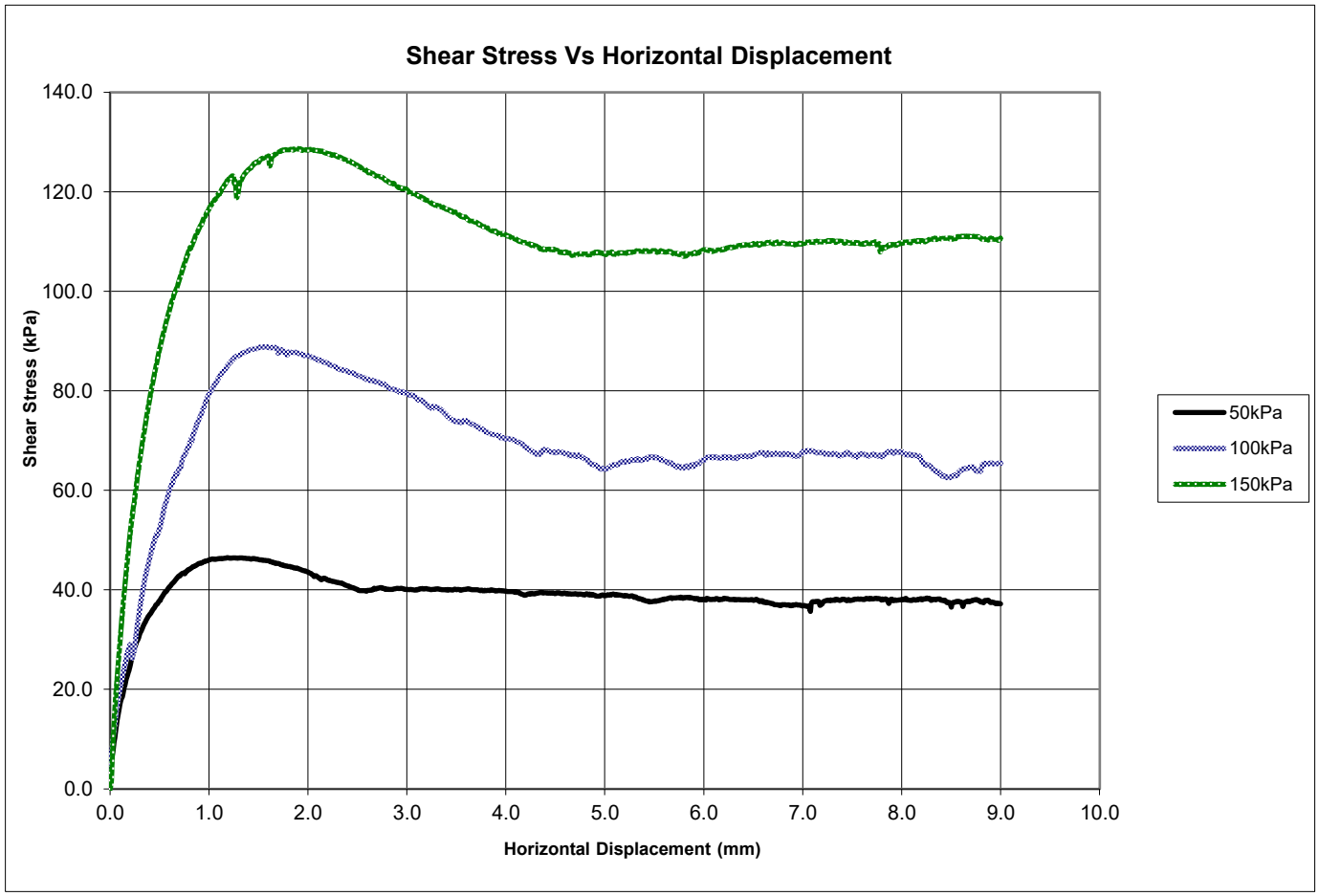
| **Peak Strength** | | Regression | Manual |
|---|---|---|---|
| $c'$ | kPa | 5.8 | - |
| $\phi'$ | degrees | 39.5 | - |

| **Residual Strength** | | Regression | Manual |
|---|---|---|---|
| $c'_R$ | kPa | - | - |
| $\phi'_R$ | degrees | - | - |

**Certificate No :** **22/393 - 03-3**



**Appendix 5**

# 5 Calibration Certificates

# SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Borehole Calibration & Testing Solutions Ltd

**Unit 8**
**Orton Enterprise Centre**
**Orton Southgate**
**Peterborough**
**PE2 6XU**

| | |
|---|---|
| SPT Hammer Ref: | T820 ML2 |
| Test Date: | 27/08/2021 |
| Report Date: | 27/08/2021 |
| File Name: | T820 ML2.spt |
| Test Operator: | NG |

## Instrumented Rod Data

| | |
|---|---|
| Diameter $d_r$ (mm): | 54 |
| Wall Thickness $t_r$ (mm): | 6.3 |
| Assumed Modulus $E_a$ (GPa): | 208 |
| Accelerometer No.1: | 11853 |
| Accelerometer No.2: | 10332 |

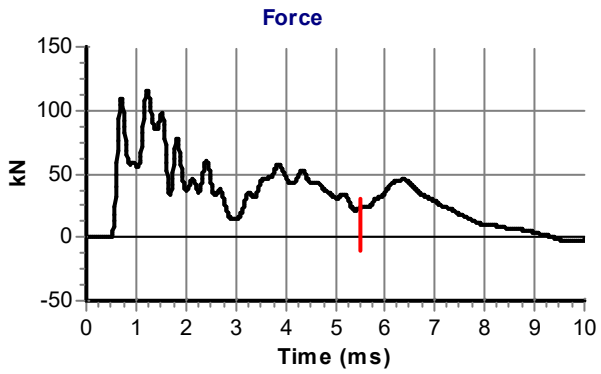
## SPT Hammer Information

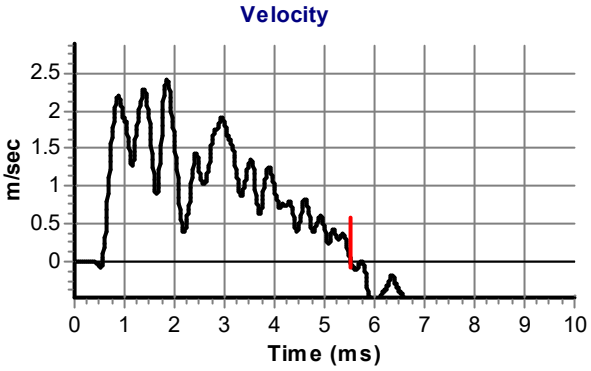
| | |
|---|---|
| Hammer Mass m (kg): | 63.0 |
| Falling Height h (mm): | 760 |
| SPT String Length L (m): | 15.0 |

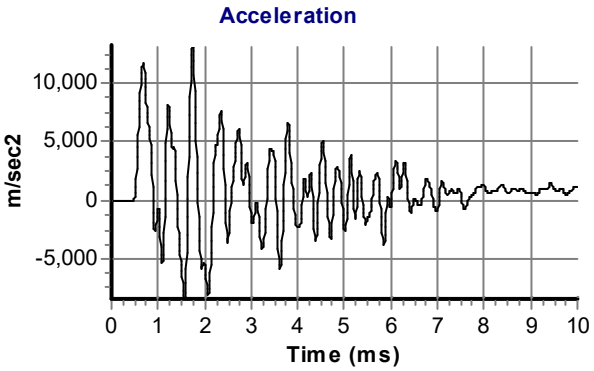
## Comments / Location

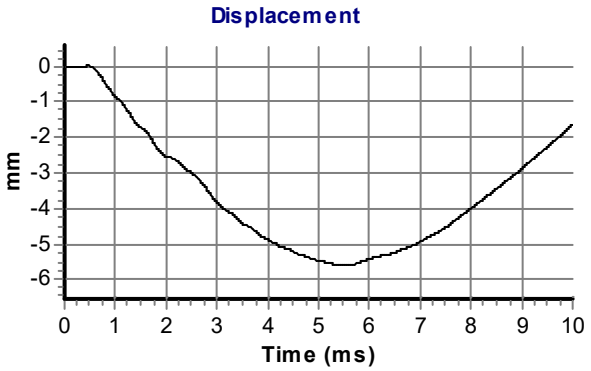
Maximum calibration interval is 12 months.

Fraste ML (M2010299)




## Calculations

| | |
|---|---|
| Area of Rod A (mm2): | 944 |
| Theoretical Energy $E_{theor}$ (J): | 473 |
| Measured Energy $E_{meas}$ (J): | 362 |

**Energy Ratio $E_r$ (%):** **77**

N Gudziunas

Signed: NG

Title: Operator

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# SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

**ARCHWAY ENGINEERING (UK) LTD**
**AINLEYS INDUSTRIAL ESTATE**
**ELLAND**
**WEST YORKSHIRE**
**HX5 9JP**

| | |
|---|---|
| SPT Hammer Ref: | AR1150 |
| Test Date: | 02/07/2021 |
| Report Date: | 02/07/2021 |
| File Name: | AR1150.spt |
| Test Operator: | CM |

**Instrumented Rod Data**

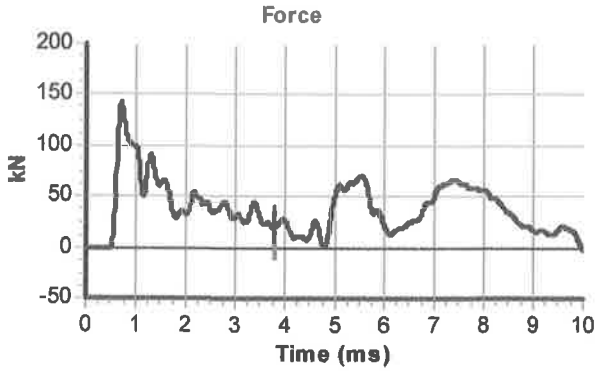
| | |
|---|---|
| Diameter $d_r$ (mm): | 54 |
| Wall Thickness $t_r$ (mm): | 6.0 |
| Assumed Modulus $E_a$ (GPa): | 200 |
| Accelerometer No.1: | 7080 |
| Accelerometer No.2: | 11609 |

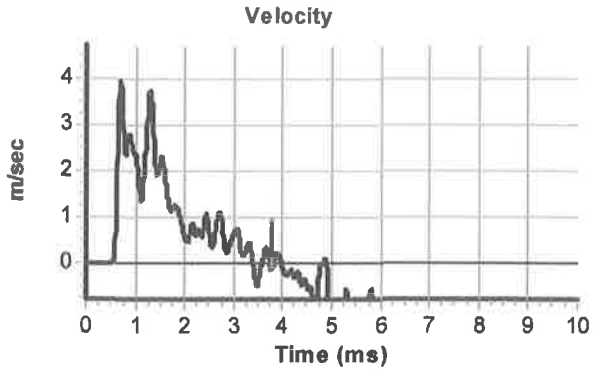
**SPT Hammer Information**

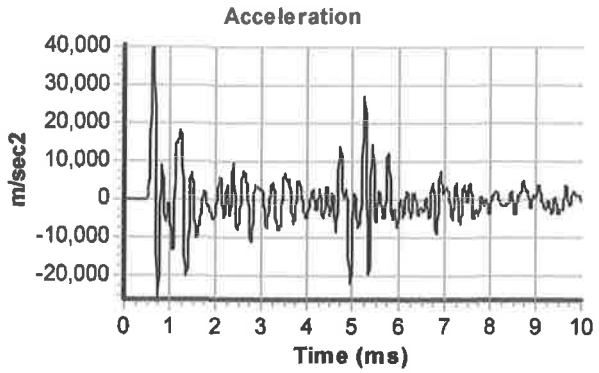
| | |
|---|---|
| Hammer Mass m (kg): | 63.5 |
| Falling Height h (mm): | 760 |
| SPT String Length L (m): | 10.0 |

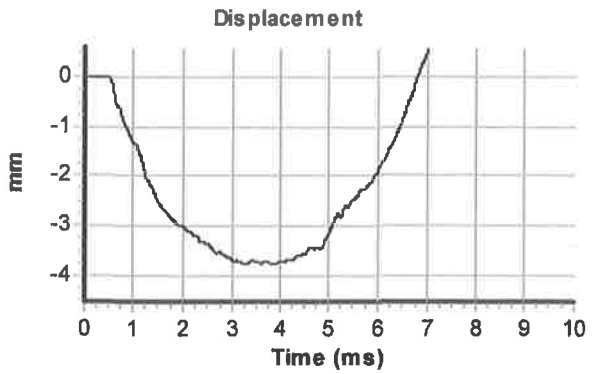
**Comments / Location**

BAM RITCHIES / 76237




**Calculations**

| | |
|---|---|
| Area of Rod A (mm2): | 905 |
| Theoretical Energy $E_{theor}$ (J): | 473 |
| Measured Energy $E_{meas}$ (J): | 311 |

**Energy Ratio $E_r$ (%):** **66**

Signed: C.McCLUSKEY

Title: FITTER

The recommended calibration interval is 12 months

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Ribble Enviro Ltd
www.ribble-enviro.co.uk



...everything gas detection

# Certificate of Calibration

| | |
|---|---|
| Customer: | Bam Ritchie |
| Instrument: | MiniRAE LITE |
| Job: | Service, Test & Calibration |
| Serial number: | 595-003413 |
| Fleet Number: | - |
| Certificate no: | 003413/170322 |
| Next calibration due date: | 17.03.2023 |
| Tested on: | 17.03.2022 |
| Calibrated for: | VOC |

| Applied Gas Concentration: | Cylinder Reference: | Final Sensor Reading | Accuracy Limits | Pass / Fail |
|---|---|---|---|---|
| Isobutylene: 100ppm | 1055/3021 | 101.8ppm | ± 10% | Pass |

**The instrument has been calibrated after re-zeroing and introducing span calibration gas, using gas that is traceable to national standards and has been prepared in accordance with BS EN ISO 6145-6:2017**

**Calibration Engineer:** Chris Shillitoe

**Sign:**

| Quality Assessed by (Print): | Dan | Sign: | |
|---|---|---|---|

**Tel**: 01200 445 804 **Fax**: 01200 445 809 **Email**: info@ribble-enviro.co.uk
**Ribble Enviro Ltd**. Unit 4, Gisburn Business Park, Gisburn, Nr Clitheroe, BB7 4JP, UK

Company Registered in England: 06140589 VAT No: GB 906 6241 34 EORI: GB906624134000

# Universal Instrument Services

14 Rose Way, Blaby,
Leicester LE8 4BY

Tel: 0116 275 0123

www.uiscal.com
e-mail: sales@uiscal.co.uk


# CERTIFICATE OF CALIBRATION

| | | | |
|---|---|---|---|
| Date of Calibration: 10th December 2021 | | Certificate | |
| Date of issue: 10th December 2021 | | Number: 00351783 | Page 1 of 3 |

| | | | |
|---|---|---|---|
| **Acc No** | BAM001 | **Manufacturer** | IMPACT TEST EQUIPMENT |
| **Customer** | BAM Ritchies | **Description** | Hand Vane Tester |
| | Europa Boulevard | **Model** | SL810 |
| | Gemini Business Park | **Serial No** | 2568 |
| **Engineer** | W.Kendall | **Asset No** | BRW011 |
| **Our Ref** | 443512 | **Order No** | |

| CONDITION OF INSTRUMENT | YES/NO |
|---|---|
| The instrument was adjusted | N |
| The instrument was repaired | N |

**ADDITIONAL COMMENTS**

**STABILITY**

The readings only apply to the equipment detailed above and are the results at the time of calibration, they do not carry any implication regarding the long term stability of the unit under test.

**ACCREDITATIONS**

This calibration is based on our accreditations to the BMS of BS EN ISO 9001:2015 and BS EN ISO/IEC 17025:2017.

**PROCEDURE**

UIS procedure CP7.7.10

**ENVIRONMENT**

The ambient conditions throughout the test were 20 °C ± 2 °C, 45 %rh ± 20 %rh.

**TRACEABILITY**

The test equipment used is traceable to National Standards. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k, providing a level of confidence of approximately 95%.

**TEST EQUIPMENT USED**

| Asset No. | Description | Certificate No. | Expiry date |
|---|---|---|---|
| ID347 | ETS 10Nm | 261522 | 17/AUG/2022 |
| ID1123 | Digital Calliper | UKAS 60017 | 10/AUG/2022 |

# CERTIFICATE OF CALIBRATION

Date of Calibration: 10th December 2021
Date of issue: 10th December 2021

Certificate Number: 00351783



Calculated for the 33mm blades as per BS 1377.

| Div | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kPa | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 9 | 9 | 9 | 9 |
| Div | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| kPa | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 13 | 13 | 13 | 14 | 14 | 14 | 14 | 15 | 15 | 15 | 15 | 16 | 16 | 16 | 16 | 17 | 17 | 17 | 18 | 18 | 18 | 18 | 19 |
| Div | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 |
| kPa | 19 | 19 | 19 | 20 | 20 | 20 | 20 | 21 | 21 | 21 | 22 | 22 | 22 | 22 | 23 | 23 | 23 | 23 | 24 | 24 | 24 | 24 | 25 | 25 | 25 | 26 | 26 | 26 | 26 | 27 | 27 | 27 | 27 | 28 | 28 |
| Div | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| kPa | 28 | 28 | 29 | 29 | 29 | 30 | 30 | 30 | 30 | 31 | 31 | 31 | 31 | 32 | 32 | 32 | 32 | 33 | 33 | 33 | 33 | 34 | 34 | 34 | 35 | 35 | 35 | 35 | 36 | 36 | 36 | 36 | 37 | 37 | 37 |

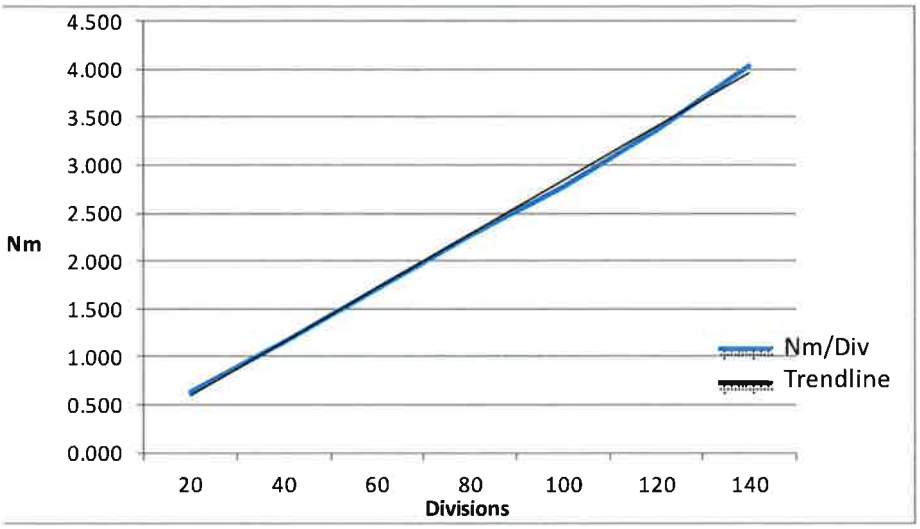
Calculated for the 19mm blades as per BS 1377.

| Div | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kPa | 1 | 3 | 4 | 6 | 7 | 8 | 10 | 11 | 13 | 14 | 15 | 17 | 18 | 20 | 21 | 22 | 24 | 25 | 27 | 28 | 29 | 31 | 32 | 34 | 35 | 36 | 38 | 39 | 41 | 42 | 43 | 45 | 46 | 48 | 49 |
| Div | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| kPa | 50 | 52 | 53 | 54 | 56 | 57 | 59 | 60 | 61 | 63 | 64 | 66 | 67 | 68 | 70 | 71 | 73 | 74 | 75 | 77 | 78 | 80 | 81 | 82 | 84 | 85 | 87 | 88 | 89 | 91 | 92 | 94 | 95 | 96 | 98 |
| Div | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 |
| kPa | 99 | 101 | 102 | 103 | 105 | 106 | 108 | 109 | 110 | 112 | 113 | 115 | 116 | 117 | 119 | 120 | 122 | 123 | 124 | 126 | 127 | 129 | 130 | 131 | 133 | 134 | 136 | 137 | 138 | 140 | 141 | 143 | 144 | 145 | 147 |
| Div | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| kPa | 146 | 150 | 151 | 152 | 154 | 155 | 157 | 158 | 159 | 161 | 162 | 163 | 165 | 166 | 168 | 169 | 170 | 172 | 173 | 175 | 176 | 177 | 179 | 180 | 182 | 183 | 184 | 186 | 187 | 189 | 190 | 191 | 193 | 194 | 196 |

# CERTIFICATE OF CALIBRATION

Date of Calibration: 10th December 2021 | Certificate
Date of issue: 10th December 2021 | Number: 00351783 | Page 3 of 3

| Vane Divisions | Mean Measured Torque(N·m) | Torque Uncertainty | Confidence Level |
|---|---|---|---|
| 20 | 0.632 | ± 0.05 N·m | k=2.00 |
| 40 | 1.158 | ± 0.05 N·m | k=2.00 |
| 60 | 1.697 | ± 0.05 N·m | k=2.00 |
| 80 | 2.260 | ± 0.05 N·m | k=2.00 |
| 100 | 2.771 | ± 0.05 N·m | k=2.00 |
| 120 | 3.361 | ± 0.05 N·m | k=2.00 |
| 140 | 4.031 | ± 0.07 N·m | k=2.10 |




| | | |
|---|---|---|
| Shear strength constant (kPa/Div): | 33mm blade | 0.27 |
| | 19 mm blade | 1.40 |

## Method of test

The vane was rotated in a clockwise direction until the pointer was aligned with the calibration value. The applied force was then recorded. This was repeated 5 times and the mean of the readings calculated at each calibration point. The resolution is the N.m equivalent to the readability of the vane scale.

## Uncertainties

The uncertainties must also be taken into account when determining compliance with specifications.

Dimensional uncertainties +/- 0.1mm

Calibrated by .....
Universal Instrument Services Ltd.

GEOSENSE QUALITY FORM
FORM No G/QF/138
ISS: 3
DATE : Nov 20
SIG: GC

# Digital Inclinometer Probe Calibration Sheet

| | |
|---|---|
| **Customer:** | HIRE PROBE |
| **RA Number:** | |
| **Serial #:** | **DP** 1245 |
| **Date:** | 25/02/2022 |

| Face Frame Angle | A+/- | Cross Axis B Sin θ | Deviation Face Right Sin θ | Deviation Face Left Sin θ | Face Error Sin θ | Mean Deviation Sin θ | TRUE Deviation Sin θ | Error Sin θ |
|---|---|---|---|---|---|---|---|---|
| 30 | L | 0.00003 | 0.49997 | -0.49997 | 0 | 0.49997 | 0.5 | 0.00003 |
| 15 | L | -0.00003 | 0.2588 | -0.25882 | -0.00002 | 0.25881 | 0.25882 | 0.00001 |
| 0 | | -0.00002 | -0.00002 | 0.00001 | -0.00001 | -0.00001 | 0 | 0.00001 |
| 15 | R | -0.00005 | -0.25883 | 0.25882 | -0.00001 | -0.25883 | -0.25882 | 0.00001 |
| 30 | R | -0.00001 | -0.5 | 0.5 | 0 | -0.5 | -0.5 | 0 |

| Face Frame Angle | B+/- | Cross Axis A Sin θ | Deviation Face Right Sin θ | Deviation Face Left Sin θ | Face Error Sin θ | Mean Deviation Sin θ | TRUE Deviation Sin θ | Error Sin θ |
|---|---|---|---|---|---|---|---|---|
| 30 | L | -0.00002 | 0.49995 | -0.49996 | -0.00001 | 0.49996 | 0.5 | 0.00004 |
| 15 | L | -0.00002 | 0.25881 | -0.2588 | 0.00001 | 0.25881 | 0.25882 | 0.00001 |
| 0 | | -0.00001 | -0.00001 | 0.00001 | 0 | -0.00001 | 0 | 0.00001 |
| 15 | R | 0.00005 | -0.25882 | 0.25884 | 0.00002 | -0.25883 | -0.25882 | 0.00001 |
| 30 | R | 0 | -0.49999 | 0.49999 | 0 | -0.49999 | -0.5 | -0.00001 |

THE EQUIPMENT USED IN THE CALIBRATION OF THE PRODUCT DETAILED ABOVE IS TRACEABLE TO NATIONAL/INTERNATIONAL STANDARDS

THIS IS AN ELECTRONIC CERTIFICATE AND IS VALID WITHOUT A SIGNATURE

CALIBRATED TO UKAS TRACEABLE STANDARD
GEOSENSE CERTIFIED ISO 9001:2015

Nova House, Rougham Industrial Estate, Rougham, Bury St Edmunds, Suffolk, IP30 9ND, England
t +44 (0)1359 270457 e sales@geosense.co.uk www.geosense.co.uk

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