



Renaker Build Limited (RBL)

PHASE 2 GROUND INVESTIGATION

Trinity Islands, Manchester





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Trinity Islands, Manchester

REPORT (VERSION 4) CONFIDENTIAL

PROJECT NO. 70082598

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WSP

8 First Street

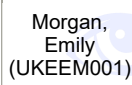
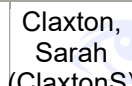
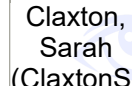
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QUALITY CONTROL

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██████████: SOIL GQRA GAC SCREEN

██████████: GROUNDWATER GQRA GAC SCREEN

██████████: CIRIA C552



1 INTRODUCTION

1.1 AUTHORISATION

On the instruction of Renaker Build Limited (RBL) (the Client) WSP has undertaken geo-environmental consultancy works for the proposed Trinity Islands development located off Water Street, Manchester, M3 4JH, henceforth referred to as the site. A site location plan is included as Figure 1 in Appendix A.

1.2 BACKGROUND & DEVELOPMENT PROPOSALS

The irregularly shaped site comprises two plots of land (Plot C and Plot D) that have a combined area of approximately 1.78 hectares (0.89 hectares each) and are separated by Trinity Way. An aerial overview of the site is included as Insert 1-1.

Insert 1-1 - Aerial Overview of the site



It is proposed to redevelop the site with the construction of four high-rise residential buildings (two on each plot) with associated two-storey underground basement parking (further information on development proposals is included in Section 2.2).



The delivery of the redevelopment is likely to include a phased approach with the construction phases for Plot C and Plot D delivered separately. One detailed planning application will be submitted for the entire redevelopment.

The aim of this Phase 2 report is to identify potential constraints relating to contamination and/or ground conditions which may impact the proposed redevelopment. The overall objective is to aid the client in support of the discharge of future land quality related planning conditions and to provide information to support design works.

1.3 EXISTING REPORTS

The following existing reports have been used during the production of this report and should be read in conjunction:

- WSP (2021). *Phase I Preliminary Risk Assessment (PRA) Trinity Islands, Trinity Way, Manchester*. Report Ref: 70082598-11789(1) (henceforth referred to as Phase I). (It should be noted that Plot C was referred to as Site C and Plot D referred to as Site D in the Phase I).
- WSP (2021) *Ground Investigation Report, Trinity Islands Manchester*, Ref: 70082598-WSP-GEO-GIR-001, dated: July 2021 (henceforth referred to as GIR report).

1.4 LIMITATIONS AND RELIANCE

This report is addressed to and may be relied upon by the following:

Renaker Build Limited
First Floor NQ Building
47 Bengal Street
Manchester
M4 6BB

This assessment has been prepared for the sole use of the above-named party. This report shall not be relied upon or transferred to any other parties without the express written authorisation of WSP. No responsibility will be accepted where this report is used in its entirety, or in part, by any other party. Information provided by others is taken in good faith as being accurate. WSP cannot and will not accept liability for any deficiencies in third part information. General Limitations are presented in Appendix B.



2 BACKGROUND AND SITE SETTING

2.1 PROPOSED DEVELOPMENT PLANS

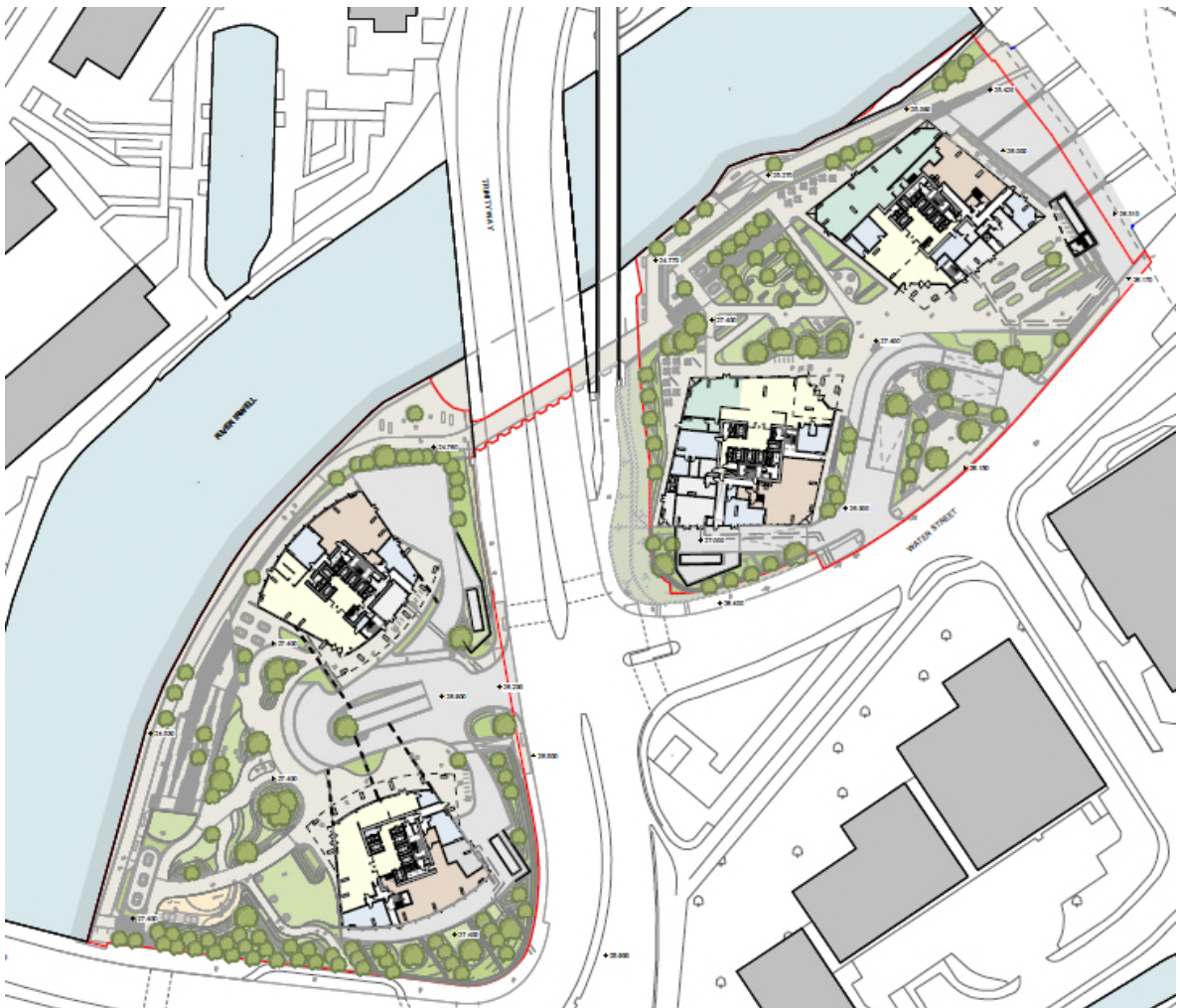
The client is proposing to construct the following:

- Plot C: Two residential towers of 39 and 48 storeys providing 935 residential units; and,
- Plot D: Two residential towers of 55 and 60 storeys providing 1015 residential units.

The earthworks prior to construction will comprise the installation of a contiguous piled wall followed by the excavation of a double storey basement car park (approximately 7.0m deep). Construction will then include each tower standing above a two-deck podium. Vehicular access to the basement car parks will be individual to each plot making use of existing road infrastructure. There are plans to make use of the underpass under Trinity Way to connect the plots coupled with a proposal to have a landscaped outdoor space vegetated by grass and shrubs/ trees.

An overview of the finished surface layout is included as Insert 2-1 and the proposed extent of the basement excavations is included as Insert 2-2 showing an offset from the river boundary.

Insert 2-1 - Initial Design Layout





Insert 2-2 - Extent of Basement Excavation



2.2 CURRENT SITE DETAILS

Pertinent points from the previously completed WSP Phase I PRA report are presented in Table 2-1.

Table 2-1 - Site Details

Site Address	Trinity Islands, Trinity Way, Manchester, M3 4JH	
Site Location	The site is located to the west of Manchester City Centre in a mixed commercial and residential area.	
National Grid Coordinates	382802, 397844 (Plot C)	382693, 397759 (Plot D)
Current Use	The irregular shaped site comprises two surface level car parks (Plot D is disused for parking). No permanent structures are visible on either of the sites except for a substation in the southwest of Plot D.	
Elevation	The site is flat and level at approximately 26 metres above Ordnance Datum (m AOD) with the exception of a small retaining wall between 0.40m to 0.70m high which bisects Plot C from north to south, with the eastern half higher than the west.	
Surrounding Land Use	The following land uses surround the site: ■ North: River Irwell with residential high-rise blocks beyond. ■ South: Trinity Way and Water Street with commercial buildings beyond. ■ East: Railway viaduct ■ West: River Irwell with residential high-rise blocks beyond.	



Geology	British Geological Survey (BGS) 1:50,000 geological map series (Sheet 85 Manchester 2011, Solid and Drift) indicates the solid geology underlying the site comprises the Chester Formation (formerly called the Chester Pebble Beds) consisting of red sandstone /pebbly sandstone. BGS mapping does not record superficial deposits underlying the site however Alluvium (silts, clays and sands with gravel and peat lenses) are recorded immediately north of the site (likely related to the River Irwell). There is likely to be a mantle of Made Ground immediately below surface hardstanding relating to the sites previous uses. Groundwater is likely to be present at approximately 6.0m below ground level.
Hydrogeology	The Environment Agency (EA) classifies the Chester Formation as a Principal Aquifer and the nearby Alluvium superficial deposits as a Secondary A Aquifer. There are no current groundwater abstractions within 500m of the site and one historical abstraction recorded approximately 210m to the northeast. The closest active abstraction is approximately 720m to the northwest for Process Water. The site does not lie within a source protection zone (SPZ) and there are no SPZs recorded within 500m.
Hydrology	The nearest surface water feature is the River Irwell immediately adjacent to the north / northwest. The Bridgewater Canal and the River Medlock are approximately 300m to the south of the site. There are no active surface water abstractions within 500m of the site and one recorded historical surface water abstraction located approximately 330m southwest.
Invasive Species	Giant Hogweed was noted during the Phase I walkover. An ecologist should complete an ecological survey mid-season to ascertain if any other invasive species are present.

2.3 HISTORICAL SUMMARY

A historical map review is included within the WSP Phase I PRA report and summarised as follows.

The historical mapping indicates the site has had multiple industrial (dye works, chemical works, corporation yard/ refuse destructor etc) and commercial uses (pig market, garage and paper salvage shed) with multiple redevelopments prior to the present-day car parks.

The surrounding land use has been a mixture of residential, commercial and industrial most notably including a meat market and abattoirs in the late 1800's to early 1900's. More recently the land use has been a mix of residential and commercial.

2.4 PRELIMINARY CONCEPTUAL MODEL

The risks associated with potential contamination within soil and groundwater are assessed according to the environmental setting / ground model, likely presence of potential sources of contamination and the proposed use of the site.

The source-pathway-receptor model forms the basis of the risk assessment; potential risks are only considered to exist if there is a credible source (e.g. a chemical substance capable of causing harm); a pathway for migration of the source to a receptor; and a sensitive receptor that could be affected (e.g. nearby river or future site users). A source-pathway-receptor contaminant linkage assessment is termed a conceptual model (CM). A preliminary CM is produced prior to intrusive ground investigation and is refined following collection of site-specific data.



Table 2-2 - Preliminary Conceptual Model

Source	Pathway	Receptor	Qualitative Comment	Risk Likelihood
Contamination (including asbestos) associated with Made Ground materials from previous industrial land use (both plots) and infilling of a basin Plot C). Contamination relating to former site uses (i.e. Plot D former chemical works) or adjacent industrial uses (e.g. spills, leaks)	Direct contact, ingestion of inhalation	Construction Workers during redevelopment	There is potential for soil chemical contamination including asbestos relating to the site previous uses. The potential for exposure can potentially be mitigated during redevelopment via good practice and the use of standard Personal Protective Equipment (PPE), Respiratory Protective Equipment (RPE) and good hygiene practices.	MODERATE - LOW
		Maintenance workers post development	Earthworks for the basements are likely to remove the majority of Made Ground. Any landscaped area post development would likely comprise imported clean soils. If residual contamination remains in Made Ground around periphery then good practice i.e. PPE etc would mitigate potential exposure during any short-term groundworks.	LOW
		Future Site Users (Residential Receptors)	Upon redevelopment the site will comprise building footprint, hardstanding or landscaped areas. The landscaped areas will likely be imported clean topsoil. The potential for direct contact, ingestion or inhalation is therefore likely to be low.	LOW
	Mobilisation of contamination into groundwater/ surface waters.	Groundwater within bedrock/ Surface Water in River Irwell	Potential for contamination in Made Ground or shallow soils. The presence of the current site wide hardstanding will potentially have limited surface water infiltration and vertical migration of contamination into the bedrock aquifer. A ground investigation will assess groundwater water quality. If contamination has impacted groundwater quality then source removal would be likely during basement earthworks dig which would provide significant betterment. Possibility of residual	MODERATE



Source	Pathway	Receptor	Qualitative Comment	Risk Likelihood
			secondary sources within bedrock.	
Hazardous Ground Gas related to Made Ground or organic material in infilled dock sediments.	Migration into ground excavations / man-hole chambers	Construction Workers during redevelopment	Potential for soil/ groundwater gas/ vapour. Ground investigation will assess for the potential presence of ground gas concentrations and volatile groundwater contamination/ non-aqueous phase liquid (NAPL).	MODERATE
Volatile contamination in groundwater causing vapour migration (i.e. Plot D from the former chemical works)		Maintenance workers post development		
		Future Site Users		



3 GROUND INVESTIGATION WORKS – 2021

3.1 FIELDWORK

A ground investigation was scoped by WSP to provide geotechnical and geo-environmental information to support the cost-effective design of the substructures and data to assess the soil and groundwater conditions at the site. The geotechnical element of the investigation will be reported separately within the GIR Report.

Fieldworks were undertaken between 26 April 2021 and 28 May 2021 by Geotechnics Limited and observed by WSP. The fieldworks were reported by Geotechnics (*Geotechnics (2021) Trinity Islands Factual Report for Renaker Build Limited*, Project Number: PN214217, Dated: July 2021) which is included as an appendices within the GIR Report. A summary of the works undertaken is presented in Table 3-1. An exploratory hole location plan is presented as Figure 2, Appendix A. A copy of the Geotechnics logs are presented in Appendix C and chemical results presented in Appendix D.

Table 3-1 – Summary of Fieldwork

Site Area	Plot C		Plot D	
Details of Works	No. of Positions	Depth (m bgl*)	No. of Positions	Depth (m bgl*)
Cable percussion borehole with rotary follow on	6 (BH107 – BH112)	25.00 - 50.10	6 (BH101 – BH106)	25.00 – 50.80
Window sample boreholes	4 (WS105 – WS108)	3.39 - 5.45	4 (WS101 – WS104)	1.15 - 4.63
Soil sampling	2no. samples of surface hardstanding (asphalt) and 31no. soil samples were collected and submitted to a Geotechnics selected laboratory (DETS).			
PAK spray testing	6no. cores of asphalt surface standing were sprayed with a PAK spray as an initial assessment to detect if they contained polyaromatic hydrocarbons (PAHs) at concentrations that could indicate coal tar.			
Surveying	All exploratory holes were surveyed by Geotechnics with the easting, northing, and Ordnance Datum elevation presented on the exploratory hole records			
Groundwater and ground gas monitoring and sampling	Undertake 1no. groundwater and 6no. ground gas monitoring visits (4no. undertaken at time of writing).			

* metres below ground level

After undertaking the drilling works and reaching the maximum depth, selected boreholes were installed with combined groundwater and ground gas monitoring installations. These comprised 50mm high density polyethylene (HDPE) pipe. Details of the installations are presented on the exploratory hole records and summarised in Table 3-2.

**Table 3-2 – Summary of Monitoring Installations**

Site Area	Exploratory Hole	Maximum Drilled Depth (m bgl)	Screen Top & Base (m bgl)	Strata Installed
Plot D	BH101	25.20	2.50 – 25.20	Cohesive Alluvium & Chester Formation
	BH102	35.40	1.50 – 20.00	Granular Alluvium & Chester Formation
	BH103	50.00	3.00– 30.00	Granular Alluvium & Chester Formation
	BH104	25.00	1.50 – 25.00	Granular/Cohesive Alluvium & Chester Formation
	BH105	50.80	3.00 – 30.00	Granular Alluvium & Chester Formation
	BH106	35.50	3.00 – 20.00	Granular Alluvium & Chester Formation
	WS101	4.63	0.50 – 1.60	Granular Made Ground
	WS102	3.45	1.50 – 3.00	Cohesive & Granular Alluvium
	WS104A	2.39	0.50– 2.00	Granular Made Ground
Plot C	BH107	50.10	3.00 – 20.00	Granular Alluvium & Chester Formation
	BH108	35.50	3.00 – 20.00	Granular Alluvium & Chester Formation
	BH109	25.50	3.00 – 25.00	Granular/Cohesive Alluvium & Chester Formation
	BH110	35.00	3.00 – 20.00	Granular Alluvium & Chester Formation
	BH111	25.00	3.00 – 25.00	Granular Made Ground, Granular Alluvium & Chester Formation
	BH112	49.90	3.00 – 20.00	Granular Alluvium & Chester Formation
	WS105	3.39	0.90 – 3.00	Granular Made Ground & Granular Alluvium
	WS106	4.45	0.50 – 1.90	Granular Made Ground & Cohesive Alluvium
	WS107	4.45	0.50 – 1.80	Granular Made Ground & Granular Alluvium



3.2 LABORATORY ANALYSIS AND TESTING

3.2.1 SOIL AND GROUNDWATER

Soil and groundwater samples from the investigation were submitted to a laboratory selected by Geotechnics (DETS, an MCERT accredited laboratory). The soil and groundwater sample analysed was selected by WSP. The soil and groundwater analytes selected are listed in Table 3-3.

Table 3-3 - Chemical Testing Analysis

Analyte	No. of soil samples		No. of groundwater samples	
	Plot C	Plot D	Plot C	Plot D
Standard metals (arsenic, boron, cadmium, chromium, hexavalent chromium, lead, mercury, nickel, selenium and zinc)	13	15	6	6
Additional metals (barium, beryllium, chromium III, iron, magnesium, manganese and vanadium)	-	-	6	-
Polyaromatic hydrocarbons 16 speciated	13	17	6	6
Total petroleum hydrocarbons criteria working group (TPH CWG)	13	15	6	6
Volatile Organic Compounds (VOCs)	-	1	-	2
Semi-Volatile Organic Compounds (SVOCs)	-	2	-	2
Asbestos screen	12	15	-	-
Coal tar fingerprint analysis (on asphalt samples only)	-	2	-	-
Waste acceptance criteria (WAC)	1	1	-	-
Inorganics (pH)	13	15	6	6
Sulphate	4	6	6	6
Total organic carbon	13	15	-	-
Misc. Inorganics (cyanide, total hardness, ammoniacal nitrogen, chloride, fluoride and sulphide)	-	-	6	-

3.2.2 GEOTECHNICAL TESTING

Geotechnical testing scheduled by WSP comprised the following:

- Moisture content;
- Atterberg Limits;
- Particle size distribution;
- Point Load Index;
- Unconfined compressive strength;
- Young's Modulus;



- pH; and,
- Water soluble sulphate.

A copy of the geotechnical results has not been included within this report. The results and interpretation are presented within the WSP 2021 GIR.

3.3 GROUNDWATER & GROUND GAS MONITORING VISITS

One groundwater sampling visit and six gas monitoring and groundwater gauging visits were specified over a three-month period in accordance with guidance presented in BS 8484 (BSI, 2019) and CIRIA C665 (Wilson et al, 2007) for a moderate sensitivity end use, moderate ground gas potential site.

To date, four visits have been undertaken, on 02 June, 17 June, 1 July 2021 and 14 July 2021. The two remaining visits are due to take place on 03 August and 13 August 2021.

A copy of the field-testing results is included in Appendix E.

3.4 GEOTECHNICAL WORKS

The following additional works were completed to inform the geotechnical design, these are interpreted within the WSP 2012 GIR report.

- Standard Penetration Tests (SPTs) were performed within the cable percussion sections of the boreholes and in the window samples. Additional SPTs were performed in the rotary core section of BH109 where the core recovery was poor.
- Two packer tests per borehole were performed by Geotechnics within boreholes BH103, BH105, BH107, BH108 and BH112.
- Seventeen high pressure dilatometer (HPD) tests were performed within boreholes BH103, BH103A, BH105, BH107 and BH112 by Geotechnics' subcontractor, In Situ Site Investigation.



4 GROUND INVESTIGATION – FINDINGS

4.1 GROUND CONDITIONS

A summary of ground conditions recorded for Plot C and Plot D are presented in Table 4-1 and Table 4-2 and discussed thereafter.

4.1.1 PLOT C GROUND CONDITIONS

Exploratory holes in Plot C included BH107 – BH112 and WS105 – WS108.

Table 4-1 - Summary of Plot C Ground Conditions

Strata		Depth to Base (m BGL)	Elevation of Base (m AOD)	Thickness (m)	Notes
Made Ground	Asphalt	0.07 – 0.15	25.54 – 26.30	0.07 – 0.15	
	Subbase	0.12 – 0.40	24.44 – 26.06	0.05 – 0.30	
	Concrete	0.46	25.17	0.19	Only recorded in BH107
	Cobble Setts	0.25 – 0.40	25.14 – 25.96	0.10 – 0.20	Only recorded in WS106 and WS107
	Granular	0.27 – 3.70	22.69 – 25.36	0.15 – 3.30	
	Cohesive	1.60	24.43	0.40	Recorded in WS108 underlying the Granular Made Ground
Cohesive Alluvium		1.85 – 5.00	19.69 – 24.18	0.25 – 1.90	Recorded in BH108, BH109, WS106 & WS108
Granular Alluvium		4.60 – 5.80	21.30 – 22.19	1.00 - >3.60	Recorded in every exploratory hole
Weathered Chester Formation Sandstone		6.08 – 9.06	20.23 – 16.87	1.11 – 3.26	
Competent Chester Formation Sandstone		>50.10	>24.47	>43.74	

SURFACE HARDSTANDING

Asphalt surface hardstanding was recorded at all locations at surface level extending to between 0.07m to 0.15m bgl.

MADE GROUND

Made Ground was recorded in all exploratory locations within Plot C. The surface hardstanding was directly underlain by compacted limestone gravel subbase between 0.05m and 0.30m in thickness.

The subbase was directly underlain by granular Made Ground in all but two locations (WS106 and WS107) where cobble sett blocks separated the subbase and the Made Ground. The granular Made Ground predominantly comprised gravelly fine to coarse ashy sand with a low to medium cobble content. Gravels comprised brick fragments and natural lithologies. The granular Made Ground was recorded between 1.00m to 2.30m bgl, with the exception of BH111 in the south-



eastern corner which recorded 3.70m. A review of the historical maps indicates this area of Plot C housed a former pig sale depot. The Made Ground in BH111 comprises clayey sand with bands of ash which is not consistent with infilled basement material but could potentially represent worked ground left in-situ after the demolition of the depot.

Cohesive Made Ground was recorded in one location in WS108 underlying the granular Made Ground between 1.20m and 1.60m bgl and consisting of gravelly sandy clay with coal and brick fragments.

SUPERFICIAL DEPOSITS

Superficial deposits comprising Alluvium were recorded underlying Made Ground in all locations from between 1.80m to 3.00m bgl and extending to 2.50m to 5.80m bgl. Alluvium deposits were predominantly granular in nature and consisted of loose to medium dense clayey gravelly fine to medium sand becoming dense clayey sandy gravel. Cohesive Alluvium deposits were recorded interspersed within the granular material in four locations (BH108, BH109, WS106 and WS108) and comprised very soft to firm slightly gravelly sandy clay.

BEDROCK

Bedrock comprising the Chester Formation sandstone was recorded in all the deeper locations underlying superficial deposits. Weathered bedrock was recorded in BH108 – BH112 up to 3.26m in thickness and comprised dense brown sand and gravel. Competent bedrock was recorded between 6.08m to 9.06m bgl and comprised weathered brown fine to medium sandstone becoming denser and less weathered with depth.

4.1.2 PLOT D – GROUND CONDITIONS

Exploratory holes in Plot D included BH101 – BH106 and WS101 – WS104/WS104A.

Table 4-2 - Summary of Plot D Ground Conditions

Strata		Depth to Base (m BGL)	Elevation of Base (m AOD)	Thickness (m)	Notes
Made Ground	Asphalt	0.07 – 0.20	24.63 – 25.92	0.07 – 0.20	
	Subbase	0.37 – 0.50	24.41 – 25.59	0.30 – 0.40	Recorded in WS101 – WS103
	Concrete	0.45 – 2.40	22.8 – 25.54	0.15 - >0.70	Concrete was recorded underlying Granular Made Ground in BH101, BH102, BH104 and WS104. In WS104 the concrete was >0.7m thick and the hole was abandoned
	Cobble Setts	0.35 – 0.50	24.38 – 24.82	0.13 – 0.15	Recorded in BH105, BH106 & WS103
	Granular	0.20 – 1.60 *>2.39	22.7 – 23.31 *>24.79	0.13 – 2.90 *>2.31 in WS104A	Deepest in WS104A where the hole was terminated on an obstruction.



Strata		Depth to Base (m BGL)	Elevation of Base (m AOD)	Thickness (m)	Notes
	Cohesive	0.2 – 3.00	21.73 – 25.09	0.10 – 1.80	Only recorded in BH103, BH106 & WS102 underlying the Granular Made Ground
Cohesive Alluvium		1.80 – 4.20	21.00 – 24.19	0.50 – 1.90	Only recorded in BH101, BH104, WS101 & WS102
Granular Alluvium		3.40 – 5.00	19.99 – 20.78	0.40 – 5.05	Recorded in all boreholes except BH101
Weathered Chester Formation Sandstone		6.19 – 11.6	18.54 - <20.28	>0.03 – 6.60	
Competent Chester Formation Sandstone		>50.80	<-25.53	>43.80	

SURFACE HARDSTANDING

Asphalt surface hardstanding was recorded at all locations at surface level extending to between 0.07m to 0.20m bgl.

MADE GROUND

Made Ground was recorded in all exploratory locations within Plot D. The surface hardstanding was directly underlain by compacted limestone gravel subbase between 0.30m and 0.40m in thickness.

The subbase was directly underlain by granular Made Ground in all but three locations (BH105, BH106 & WS103) where cobble sett blocks separated the subbase and the Made Ground. The granular Made Ground predominantly comprised fine to medium ashy sand and gravel with a low to medium cobble content. Gravels comprised brick fragments and natural lithologies. The granular Made Ground was recorded between 0.20 to 1.60m in thickness (in WS104A it was recorded >2.30m bgl but the location terminated at that point).

Cohesive Made Ground was recorded in BH103, BH106 & WS102 underlying the granular Made Ground at depths between 1.80m and 4.20m bgl and consisting of very soft slightly gravelly very sandy clay. Gravel was comprised of sandstone, coal, slate and concrete.

SUPERFICIAL DEPOSITS

Superficial deposits comprising Alluvium were recorded underlying Made Ground in all locations extending to a maximum depth of 3.40m to 5.00m bgl. Alluvium deposits were predominantly granular in nature and consisted of loose to medium dense clayey gravelly fine to medium sand becoming dense clayey sandy gravel. Cohesive Alluvium deposits were recorded in four locations overlying granular deposits (BH101, BH104, WS101 & WS102) and comprised very soft to firm slightly gravelly sandy clay.

BEDROCK

Bedrock comprising the Chester Formation sandstone was recorded in all locations underlying superficial deposits. Weathered bedrock was recorded in BH101 to BH106 and WS101 and comprised dense brown sand and gravel. Competent bedrock was recorded between 6.00m -



11.60m bgl and comprised weathered brown fine to medium sandstone becoming denser and less weathered with depth.

4.2 VISUAL AND OLFACTORY EVIDENCE OF CONTAMINATION

Visual or olfactory evidence of contamination was noted on the Geotechnics' exploratory logs as follows:

- WS103 at 0.50m to 0.80m bgl a slight hydrocarbon odour was noted.
- WS106 at 0.30m bgl a slight hydrocarbon odour was noted.

No other visual or olfactory evidence of contamination was noted on the borehole logs.

4.3 GROUNDWATER

The groundwater strikes recorded during the ground investigation suggest that the main groundwater table lies within the sandstone bedrock.

Groundwater strikes were recorded as follows:

- Recorded between 3.00m to 4.00m bgl within granular Alluvium or weathered sandstone; or,
- Recorded between 19.00m to 30.00m bgl within bedrock.

The recorded groundwater conditions could be consistent with groundwater that is sub-artesian; whereby the groundwater is trapped at a positive pressure below an impermeable confining layer. In some boreholes mudstone bands and laminae were recorded at similar depths to the initial groundwater strikes and these may be acting as the confining layer. However, anecdotal information from previous WSP investigations within the Chester Formation has previously concluded that groundwater predominantly migrates via fracture flow with limited pore migration. It is considered likely that a combination of mechanisms is influencing the groundwater at the site.

Based on the groundwater information recorded de-watering of deeper excavations should be considered during the design of the earthworks.

During the groundwater monitoring (three out of six visits completed to date) groundwater was recorded within the deeper borehole installations whilst the window sample installations were all dry. Groundwater was resting within the Alluvium deposits (except BH106 where it was within Made Ground). A review of the groundwater monitoring elevations on 01 July 2021 (shown on Figure 3, Appendix A) indicates that groundwater on Plot D is flowing broadly to the north/ northeast towards the River Irwell. The groundwater on Plot C appears to have a highpoint in the centre however is broadly flowing towards to the north/northwest also towards the River Irwell.

Groundwater strikes recorded and the minimum/maximum groundwater gauging results for the first three visits are summarised in Table 4-3.



Table 4-3 - Summary of Groundwater Strikes and Monitoring Levels

Site Area	Borehole	Ground Level (m AOD)	Groundwater Strike m AOD (m BGL)		Stratum Groundwater strike within	Monitoring Depth m AOD (m BGL)		Stratum Water Resting in during Monitoring
			Initial	After 20 minutes		Min.	Max.	
Plot D	BH101	25.20	-	-	-	22.51 (2.69)	22.40 (2.80)	Alluvium
	BH102	25.99	1.79 (24.20)	22.59 (3.40)	Competent Sandstone	22.53 (3.46)	22.43 (3.56)	Alluvium
			4.11 (30.1)	22.09 (3.90)	Competent Sandstone			
	BH103	25.78	22.28 (3.50)	22.28 (3.50)	Granular Alluvium	22.48 (3.30)	22.39 (3.90)	Alluvium
			21.78 (4.00)	22.48 (3.30)	Granular Alluvium			
	BH104	24.99	20.99 (4.00)	22.19 (2.80)	Weathered Sandstone	22.41 (2.58)	22.30 (2.69)	Alluvium
			7.6 (17.30)	21.99 (3.00)	Competent Sandstone			
Plot C	BH105	25.27	21.27 (4.00)	21.47 (3.80)	Granular Alluvium	22.38 (2.89)	22.30 (2.97)	Alluvium
	BH106	24.73	-1.77 (26.50)	21.73 (3.00)	Competent Sandstone	22.04 (2.69)	21.97 (2.76)	Made Ground
	BH107	25.63	21.63 (4.00)	22.03 (3.60)	Weathered Sandstone	22.30 (3.33)	22.24 (3.39)	Alluvium
	BH108	24.69	-1.31 (26.00)	20.79 (3.60)	Competent Sandstone	21.99 (2.70)	21.94 (2.75)	Alluvium
			-3.81 (28.50)	20.69 (4.00)	Competent Sandstone			
	BH109	25.93	-	-	-	22.23 (3.70)	22.18 (3.75)	Alluvium
	BH110	25.79	21.09 (4.70)	21.89 (3.90)	Weathered Sandstone	22.40 (3.39)	22.37 (3.42)	Alluvium
	BH111	26.40	6.80 (19.60)	22.40 (4.00)	Competent Sandstone	22.19 (4.21)	22.12 (4.28)	Alluvium
	BH112	25.67	-	-	-	22.09	22.05	Alluvium



						(3.58)	(3.62)	
Plot D	WS101	24.91	-	-	-	DRY	DRY	
	WS102	25.59	-	-	-	DRY	DRY	
	WS104A	25.09	-	-	-	DRY	DRY	
Plot C	WS105	25.19	-	-	-	DRY	DRY	
	WS106	26.21	22.01 (4.20)	22.01 (4.20)	Granular Alluvium	DRY	DRY	
	WS107	25.54	21.84 (3.70)	21.84 (3.70)	Granular Alluvium	DRY	DRY	
	WS108	26.03	23.03 (3.00)	23.03 (3.00)	Granular Alluvium	DRY	DRY	

4.4 QUALITATIVE REVIEW OF SOIL AND GROUNDWATER DATA

4.4.1 SOIL

Soil analytical data from the site investigation has been reviewed. The qualitative review of the soil data indicates that soil conditions across Plot C and Plot D are broadly similar with chemical concentrations and similar contaminants noted across the two plots. The following is noted regarding the soil:

- TPH concentrations were recorded in 7 of 13 samples in Plot C and 8 of the 15 samples from Plot D (all Made Ground). TPH compounds were predominantly aromatic hydrocarbons.
- PAH compounds were recorded within 12. of 13. samples in Plot C and 13. of the 15 samples in Plot D. The sample descriptions all included ash and/or clinker. The most notable PAH concentrations corresponded with the most notable aromatic TPH concentrations which could potentially indicate a combustion hydrocarbon source. This would be consistent with the ash recorded within deposits.
- Metal concentrations varied across the site and were notably higher in several samples of Made Ground and 1no. sample of natural material (collected directly beneath the Made Ground).
- VOC and SVOC results were less than the limit of detection in all samples analysed.
- Asbestos was identified in the laboratory in 1no. sample from Plot C from BH112 at 1.00m bgl. Quantification of this sample indicated there was 0.046% asbestos within the sample. Asbestos was not recorded in any of the Made Ground samples analysed from Plot D.

4.4.2 GROUND WATER

The groundwater analytical data for the boreholes installed across the site has been assessed. Groundwater samples were collected for Plot C and Plot D on differing visits and it is noted that metals suites selected for analysis differ over the two visits.

As with the soil conditions groundwater concentrations were similar across the site and notable contaminants were generally of a similar concentration. The following is noted overall regarding the groundwater results:



- TPH concentrations are largely below the limit of detection across both plots with some trace detections of heavy end aromatics in BH112.
- PAH concentrations are largely below the limit of detection across both plots with several trace concentrations observed.
- Metals concentrations were slightly higher within samples from Plot C than Plot D however the overall metals concentrations are not considered to be notable.
- VOC results are less than the limit of detection in both samples analysed.

4.4.3 COAL TAR

Two samples (BH103 and BH106) of asphalt material were sent to a Geotechnics selected laboratory and analysed to ascertain if they contain an indicator compound (benzo(a)pyrene) at a concentration that would indicate they contained coal tar. Neither sample was concluded to contain coal tar.

In addition, 6. surface cores across the two plots were sprayed with PAK spray which changes colour if coal tar is present. None of the spray samples changed colour to indicate that coal tar was present within the core.



5 GENERIC QUANTITATIVE RISK ASSESSMENT

5.1 INTRODUCTION

In the United Kingdom, the presence of contamination on a site is generally of concern if an actual or potentially unacceptable risk exists. Legislation and guidance on the assessment of contaminated sites, consistent with best practice, acknowledges the need for a tiered based risk approach. This report presents a Generic Quantitative Risk Assessment (GQRA), in accordance with LCRM, being a comparison of site contaminant levels against generic, highly conservative standards and compliance criteria including an assessment of risk using the source-pathway- receptor model.

5.2 HUMAN HEALTH RISK ASSESSMENT

5.2.1 SOILS RISK ASSESSMENT

A series of Generic Assessment Criteria (GAC) have been calculated by WSP using CLEA 1.07, a computer modelling tool designed to assess human health related risks presented by contaminated soil based on standard conservative input.

The same methodology has also been used to produce the WSP screening values for the risk to human health posed by volatile compounds from groundwater. In April 2014, screening levels representative of 'low risk' whilst still being 'strongly precautionary' were published by CL:AIRE for six substances (arsenic, benzene, cadmium, hexavalent chromium, lead and benzo(a)pyrene).

These are known as Category 4 Screening Levels (C4SLs) and have been endorsed for use by Defra. The current approach to the assessment of risks to human health is to continue to evaluate minimal risk through the use of in-house derived GACs (as above) and, if necessary, to use the published C4SLs as a secondary tier of assessment, until such time as additional suitable C4SLs are published and/or in-house values are derived. The WSP approach to human health risk assessment is presented in Appendix F.

The final proposed use of the site is four residential apartment buildings. However, during the site enabling works (basement dig) all Made Ground will be removed and upon completion of the development the building structure or hardstanding will cover the majority of the site and will prevent future site residents from exposure via dermal contact, ingestion or inhalation. Some areas of landscaping are likely to be incorporated into the design and site won soils may be suitable for re-use and therefore soil results have been compared against residential public open space GAC with a conservative 1% SOM to be protective of residents in landscaped areas.

Groundworkers during redevelopment and maintenance workers post development are also considered to be potential receptors. However, GACs are designed for chronic long terms exposure scenarios and therefore are not suitable for short term construction or maintenance exposure. These risks should be managed using appropriate risk assessment and method statements (RAMS) utilising the appropriate personal protective equipment (PPE) and best practice methods.

5.2.2 SOIL DISCUSSION

The following exceedances have been recorded above the residential with public open space GAC. A copy of the soil screening is included as Appendix G.



- Five Made Ground samples in Plot D exceeded the arsenic GAC (79mg/kg) with concentrations ranging between 81mg/kg (WS102 at 0.5m bgl) to 120mg/kg (WS104A at 0.30m bgl).
- Six Made Ground samples and one natural sample (Plot D) and one Made Ground sample (Plot C) exceed the lead GAC (375mg/kg) with concentrations between 450mg/kg (WS102 at 0.50m bgl) and 8400mg/kg (WS108 at 0.30m bgl).
- Two Made Ground samples (Plot D) and two Made Ground samples (Plot C) exceeded the benzo(a)pyrene GAC (5.2mg/kg) with concentrations between 8.8mg/kg (BH107 at 0.5m bgl/ WS106 at 0.30m bgl) and 14mg/kg (WS101 at 0.20m bgl).

The Made Ground and superficial soils at the site will be removed during the enabling works where approximately 7.0m thickness of material will be removed from across the footprint of each plot. The soils are not suitable for re-use in any landscaped areas. Landscaped areas should be developed using clean imported soil.

Any material imported to the site should be done so under a remediation strategy with a materials management plan (MMP) unless the imported material could not be considered to be waste

5.3 SOIL VAPOUR AND GROUNDWATER VAPOUR RISK

No visual or olfactory evidence of contamination was recorded during the site investigation or during the follow up groundwater monitoring. No measurable free phase was recorded within the groundwater monitoring data provided by Geotechnics. There was an absence of TPH, BTEX, VOCs and SVOCs within the soil and groundwater samples analysed.

Based on the above data observations the potential risk of soil or groundwater vapour is considered to be very low.

5.4 ASBESTOS IN SOILS

Twenty-seven soil samples were screened for the presence of asbestos fibres. Asbestos in the form of fibres in a Chrysotile bundle were recorded in one sample from BH112 at 1.0m bgl. Further quantification of this sample recorded a total mass of 0.046% of asbestos.

Although only identified in one sample, given the heterogeneous nature of Made Ground it is considered that there is the potential for further asbestos to be present within Made Ground at the site.

Therefore, during the basement soil removal an asbestos management plan (in accordance with the Control of Asbestos Regulations 2012) produced by a qualified professional should be utilised including precautions to limit the generation of airborne fibres. Given the removal of all the Made Ground post redevelopment widespread mitigation measures for a residential end use are not considered necessary.

5.5 CONTROLLED WATERS RISK ASSESSMENT

Groundwater samples have been analysed and the dissolved phase concentrations of contaminants have been used in a groundwater assessment using the appropriate water quality standards to provide protection to the underlying bedrock (principal aquifer) and the River Irwell (immediately adjacent to the north/ northwest).

Based on the 'prevent and limit' approach of the Water Framework Directive (2000/60/EC) and the identified receptors, the Water Quality Standards have been adopted:



- Water Supply (Water Quality) Regulations 2000 – UK DWS;
- The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 – EQS;
- Surface Waters (Dangerous Substances) (Classification) Regulations 1998 – UK EQS;
- Surrogate indicator compounds (used as proxy standard for compounds of similar chemical attributes and toxicity); and,
- International Standards (European Council Directive, WHO, USEPA, Surface Water Abstraction Directive) – appropriate for the receptor and in accordance with the UK approach.

The screening of water samples collected on 03 August 2020 after the most recent phase of drilling are presented in Appendix H and a summary of exceedances is presented in Table 5-1.

Table 5-1 - Summary of Groundwater Exceedances

Analyte	Screening Value (GAC) (µg/l) that has been exceeded		Monitoring Well	Concentration (µg/l)
	EQS	DWS		
Metals				
Cadmium	0.08	5	BH105 BH106	0.12 0.34
Copper	1	2000	BH106 BH107 BH108 BH109 BH110 BH112	1.8 2.7 4.2 1.8 1.6 1.2
Lead	1.2	10	BH107 BH108 BH109 BH110	2.2 4.7 1.3 1.4
Manganese	123	50	BH107 BH108 BH109 BH110 BH111 BH112	63 1700 1200 600 4700 84
Nickel	4	20	BH108 BH110 BH111 BH112	5.7 4.0 5.4 5.3
Zinc	6.8	-	BH108 BH111 BH112	19 8.2 7.3
Inorganics				
Chloride	2	250000	BH107 BH108 BH109 BH110	28 150 58 47



Analyte	Screening Value (GAC) (µg/l) that has been exceeded		Monitoring Well	Concentration (µg/l)
	EQS	DWS		
			BH111	480
			BH112	740
TPH CWG				
Aromatic C10-C12	2	90	BH112	5.7
Aromatic C12-C16	2	90	BH112	8.6
Aromatic C16-C21	0.1	90	BH112	22
Aromatic C21-C35	0.00017	90	BH112	39
PAH				
Fluoranthene	0.0063	-	BH101	0.06
			BH106	0.10
			BH107	0.30
			BH108	0.11
Benzo(a)pyrene	0.00017	0.01	BH106	0.02

5.5.1 CONTROLLED WATERS DISCUSSION

There have been exceedances of the groundwater EQS and DWS for several metals, chloride, heavy end aromatic TPH and two PAH compounds. The groundwater conditions below this site are likely to reflect local groundwater conditions which in turn reflect the industrial heritage of the area. The made ground is to be removed as part of the redevelopment of this site and will result in a reduced contaminant load to the groundwater and adjacent surface water

5.6 GROUND GAS RISK ASSESSMENT

The results of four of the proposed six ground gas monitoring visits were reviewed by WSP (the monitoring data is included in Appendix E).

Monitoring well response zones are located within the Made Ground/ Alluvium deposits in the window samples and in the Alluvium deposits and bedrock in the boreholes.

Redevelopment will remove the Made Ground at the site (a source of ground gas). As this source of ground gas would be removed during redevelopment, the source-pathway-receptor where the Made Ground is the source is incomplete. The shallow ground results have therefore been excluded from the assessment (shown greyed out in tables).

A summary of the preliminary ground gas monitoring results for Plot D are presented in Table 5-2 and Plot C is summarised in Table 5-3 (maximum concentrations shown in amber).

Table 5-2 - Plot D Gas Monitoring Summary

Location ID	Max. Methane	Max. Carbon Dioxide	Min. Oxygen	Max. Flow Rate
	(%v/v)	(%v/v)	(%v/v)	(l/hr)
BH101	0.0	5.4	15.4	0.00
BH102	0.0	3.8	15.2	-0.10
BH103	0.1	7.3	8.5	0.03



Location ID	Max. Methane	Max. Carbon Dioxide	Min. Oxygen	Max. Flow Rate
	(%v/v)	(%v/v)	(%v/v)	(l/hr)
BH104	0.0	8.3	2.2	-0.20
BH105	0.1	0.6	20.2	0.87
BH106	0.1	2.6	16.9	0.35
WS101	0.0	15.8	18.9	0.02
WS102	0.0	3.5	16.0	-0.14
WS104A	0.0	1.7	16.8	0.43

Table 5-3 - Plot C Monitoring Summary

Location ID	Max. Methane	Max. Carbon Dioxide	Max. Oxygen	Max. Flow Rate
	(%v/v)	(%v/v)	(%v/v)	(l/hr)
BH107	0.0	1.7	18.1	0.00
BH108*	0.1	4.2	17.6	1.85
BH109	0.1	4.9	5.5	0.00
BH110	0.0	6.9	10.0	0.00
BH111	0.0	6.9	18.6	0.00
BH112	0.0	6.1	20.5	0.00
WS105	0.0	2.5	19.2	-0.03
WS106	0.0	5.3	18.3	-0.02
WS107	0.1	1.8	19.8	0.00

* Excluded due to flooding of well

The ground gas monitoring results have been used to generate a worst-case gas screening value (GSV) for the site in accordance with CIRIA C665. The GSV is the maximum volume of methane or carbon dioxide gas that could be produced each hour and is calculated as follows:

- $GSV = \text{Peak carbon dioxide concentration or peak methane concentration (\%)} / 100 \times \text{max. steady state flow rate (l/hr) of each event.}$

N.B. No maximum flow rate was recorded at Plot C. Therefore, the maximum flow for Plot D has been used in the Plot C calculation. Given the similarity in ground conditions between the two plots this value is considered to be representative and conservative.

A summary of the GSV for methane and carbon dioxide for each Plot and the corresponding characteristic situation in accordance with CIRIA C665 is presented in Table 5-4.

Table 5-4 - GSV and Characteristic Situation

Site Area	Plot C GSV		Plot D GSV	
Gas	Methane	Carbon Dioxide	Methane	Carbon Dioxide
	0.00087	0.07221	0.00087	0.0565



Characteristic Situation	CS1	CS1	CS1	CS1
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The characteristic situation for both plots is Characteristic Situation 1. CIRIA C665 recommends considering an increase to Characteristic Situation 2 when maximum carbon dioxide concentrations are greater than 5% v.v. However, the following is noted:

1. Limited potential ground gas sources were identified at the site during the investigation (i.e. no putrescible material and no organic matter);
2. The proposed removal of all the Made Ground would remove any unidentified ground gas source;
3. It is understood that the concrete proposed for use in the basement construction is equivalent to grade 2 waterproofing which would act as a structural barrier to prevent ground gas ingress into the building; and,
4. The basement car park would be fully ventilated to remove exhaust fumes, this ventilation will comply with Building Regulations 2000, Approved Document F. This would provide gas ventilation protection to the new development.

(Points 3 and 4 have been confirmed by the design structural engineers, however engineer specification drawings showing these design features have not yet been finalised. These drawings will be included within the final copy of this report when the ground gas assessment is updated).

This preliminary ground gas assessment concludes that the CS1 classification is appropriate for both Plots C and D and that ground gas protection measures over and above those provided by the design are not required.

Upon completion of the final two ground gas monitoring visits this ground gas assessment will be updated.

5.7 PRELIMINARY WASTE CLASSIFICATION

A preliminary hazardous waste assessment has been undertaken for the site using the available soils data screened using the hazwasteonline tool. A total of 26no. samples were screened using the tool and the hazardous and non-hazardous sample classification results recorded are presented in Table 5-5. With the exception of a single Alluvium sample, the ten hazardous samples are all Made Ground and were all noted to contain ash or clinker on the logs.

Table 5-5 - Hazardous Waste Classification Results

Plot C		Plot D	
Hazardous Samples	Non-Hazardous Samples	Hazardous Samples	Non-Hazardous Samples
WS106 at 0.30m bgl (MG)	BH107 at 0.50m bgl (MG)	BH101 at 0.20m bgl (MG)	BH103 at 0.50m bgl (MG)
WS108 at 0.30m bgl (MG)	BH108 at 1.0m bgl (MG)	BH102 at 0.15m bgl (MG)	WS101 at 0.50m bgl (MG)
	BH109 at 0.5m bgl (MG)	BH102 at 1.00m bgl (ALL)	WS101 at 1.00m bgl (MG)
	BH112 at 0.20m bgl (MG)	BH104 at 0.20m bgl (MG)	WS102 at 0.50m bgl (MG)



	BH112 at 1.00m bgl (MG)	BH104 at 0.50m bgl (MG)	WS102 at 1.0m bgl (MG)
	WS105 at 0.50m bgl (MG)	BH105 at 0.20m bgl (MG)	WS104A at 0.30m bgl (MG)
	WS105 at 2.80m bgl (ALL)	WS101 at 0.20m bgl (MG)	BH103 at 0.20m bgl (MG)
	WS107 at 0.5m bgl (MG)	WS104A at 1.10m bgl (MG)	
	WS107 at 1.70m bgl (ALL)		

5.7.1 WAC ANALYSIS

In addition to the preliminary hazardous waste screen 2no. soil samples from BH107 at 0.50m bgl (Plot C) and BH104 at 1.00m bgl (Plot D) were analysed for waste assessment criteria (WAC). These results are presented in Appendix D.

5.7.2 WASTE REMOVAL RECOMMENDATIONS

The hazardous waste assessment has established that ten of the samples are classified as hazardous for disposal. The trigger for hazardous assessment is shown below:

- Three samples: hazardous lead concentrations (BH102 at 1.0m bgl, WS104 at 1.10m bgl and WS108 at 0.30m bgl)
- Six samples: hazardous TPH concentrations (BH101 at 0.2m bgl, BH102 at 0.15m bgl, BH104 at 0.20m bgl, BH105 at 0.20m bgl, WS101 at 0.20m bgl and WS106 at 0.30m bgl).
- One sample hazardous pH (BH104 at 0.50m bgl).

A review of the borehole logs for those samples notes the following:

- Of the three hazardous lead samples, two were recorded within ashy Made Ground and one in the natural alluvium (the natural alluvium is considered unlikely to contain hazardous concentrations of lead). Lead speciation testing has not been undertaken and the type of lead is not known therefore the assessment tool has made a conservative assumption that the most toxic lead compound is present.
- The six TPH concentrations are all within layers described as 'black' – although it should be noted that some samples that are assessed as non-hazardous are also described as black on the logs.
- The hazardous pH sample was collected from strata directly below a concrete layer. Concrete is known to have an alkaline pH and potentially the hazardous alkaline pH may relate concrete from the layer above.

The following preliminary recommendations are suggested regarding material removal and disposal from the site:

- Lead speciation analysis on the hazardous lead samples to ascertain if the type of lead is a less hazardous species.
- Any 'black' layers of Made Ground should be stockpiled separately for additional testing to ascertain if the material layer is hazardous.
- Additional sampling of strata in BH104 should be undertaken to ascertain if the alkaline conditions were an isolated concentration.



All waste material and types should be segregated to ensure correct disposal these should include:

- Asphalt,
- Concrete obstructions (if found),
- Scrap metal (if found),
- Made Ground;
- Alluvium;
- Bedrock.

Indicative results from the hazwasteonline assessment suggest that the a portion of the Made Ground would likely be classified as hazardous waste, however if the recommended additional analysis is undertaken further zoned areas of hazardous or non-hazardous could be identified. The Alluvium and bedrock material to be removed is likely to be classified as non-hazardous subject to confirmatory testing.

- It is recommended that the additional analysis is undertaken and following on from the new data, current hazwasteonline assessment, WAC analysis results and exploratory hole logs are provided to potential waste carriers/ disposal facilities to ascertain their preliminary costs for waste removal.
- Giant Hogweed was noted during the walkover, if the invasive species is within soil materials that are being disposed of at landfill this could have significant cost implications. It is recommended that a specialist contractor is sought to assess and remove the Hogweed.



6 REFINED CONCEPTUAL MODEL

6.1 INTRODUCTION

A refinement of the conceptual model (presented in Section 2.4) is provided in Table 6-1 and assessment comments in accordance with CIRIA C552 (included in Appendix I).

Table 6-1 - Refined Conceptual Model

Source	Pathway	Receptor	Qualitative Comment	Risk Likelihood
Contamination (including asbestos) associated with Made Ground materials from previous industrial land use (both plots) and infilling of a basin Plot C). Contamination relating to former site uses (i.e. Plot D former chemical works) or adjacent industrial uses (e.g. spills, leaks)	Direct contact, ingestion of inhalation	Construction Workers during redevelopment	Limited soil contamination and a single asbestos identification has been recorded. Short term exposure potential can potentially be mitigated during redevelopment via good practice and the use of standard Personal Protective Equipment (PPE), Respiratory Protective Equipment (RPE) and good hygiene practices.	VERY LOW
		Maintenance workers post development	Earthworks for the basements are likely to remove the majority of Made Ground. Any landscaped area post development would likely comprise imported clean soils. If residual contamination remains in Made Ground around periphery then good practice i.e. PPE etc would mitigate potential exposure during any short-term groundworks.	VERY LOW
		Future Site Users (Residential Receptors)	Upon redevelopment the site will comprise building footprint, hardstanding or landscaped areas. The landscaped areas will need to be imported clean topsoil. The potential for direct contact, ingestion or inhalation is therefore likely to be very low.	VERY LOW
	Mobilisation of contamination into groundwater/surface waters.	Groundwater within bedrock/ Surface Water in River Irwell	Limited groundwater contamination above the relevant quality standards. The limited marginal exceedances are of predominantly low mobility and low toxicity compounds. The removal of Made Ground during the redevelopment of the site would also remove the likely source of	LOW



Source	Pathway	Receptor	Qualitative Comment	Risk Likelihood
			contamination within the groundwater.	
Hazardous Ground Gas related to Made Ground or organic material in infilled dock sediments. Volatile contamination in groundwater causing vapour migration (i.e. Plot D from the former chemical works)	Migration into ground excavations / man-hole chambers	Construction Workers during redevelopment	Recorded ground gas concentrations indicate the site is suitable for CS1 whereby no ground gas protection measures are required. This will need to be confirmed upon completion of all six of the proposed monitoring visits. During develop and during any maintenance all workers should, as is best practice, test any manhole chambers or excavations before entering.	LOW
		Maintenance workers post development		
		Future Site Users		



7 CONCLUSIONS

7.1 CONCLUSIONS

WSP commissioned a targeted ground investigation and laboratory testing and has used the data to undertake a Generic Quantitative Risk Assessment.

Plot C and Plot D have recorded similar soil and groundwater conditions. The following conclusions have been reached with the regards to the site:

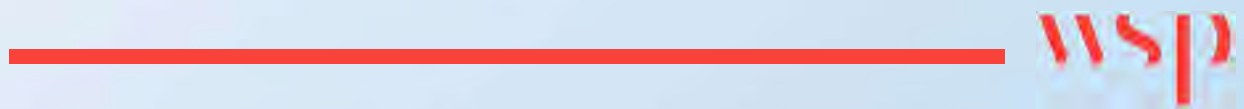
- The presence of asbestos, arsenic, lead and a PAH compound (benzo(a)pyrene) was identified within the shallow soils at the site. However, all soils to a minimum depth of 7.0m bgl are to be removed during construction.
- Preliminary ground gas results (4 out of 6 proposed visits) indicate the site is Characteristic Situation 1, whereby no gas protection measures are required. Whilst several concentrations of carbon dioxide were above 5% the engineered design of the new development will include several barriers to ground gas ingress. These include grade 2 waterproofing and basement ventilation which after consideration preclude the requirement to upgrade the characteristic situation to include any additional ground gas measures.
- Asbestos fibres have been identified in soils and therefore all groundworks should be completed under an asbestos management plan produced by an appropriately qualified professional and in accordance with CAR 2015.
- Risks to construction workers should be managed through the adoption of appropriate control measures identified with a Construction Environmental Management Plan and Construction Phase Plan including appropriate mitigation for release of asbestos fibres during excavation (asbestos management plan), appropriate PPE for construction workers and standard control measures.
- The presence of metals, chloride, several long chain TPH compounds and two PAH compounds above the relevant water quality standards for the site are not considered significant. The marginal nature of the exceedances and the removal of the likely contaminant source (i.e. the Made Ground that will be removed during construction) means the proposed development would potentially cause betterment of groundwater. Therefore, based on the current data no recommendations for groundwater remedial works are considered necessary.
- A preliminary hazardous waste classification assessment has been completed and the following is noted:
 - 10 samples were identified as hazardous based on lead (3 samples), TPH (6 samples) or pH (1 sample) within the sample.
 - It is recommended the additional soil testing to establish lead speciation is undertaken on the three samples to establish if the type of lead is a less hazardous species.
 - It is recommended that the waste material is removed in layers and any black layers of Made Ground are stockpiled for further testing.
 - It is recommended that additional testing is undertaken at BH104 to establish if the high alkaline pH is an isolated concentration.
 - During the earthworks it is recommended that different types of materials are separated and stored separately. This will facilitate further testing to allow for delineation of material type potentially lowering the volume of hazardous waste and decreasing waste costs.



- Finally, prior to disposal it is recommended that all waste analysis data and borehole logs are passed onto a reputable waste carrier to determine likely waste disposal options / costs.
- Advice should be taken with regards to the disposal of soils contaminated with Giant Hogwood. It should be noted that construction workers should ensure their skin is covered as contact can lead to severe blistering of the skin. (It is understood that since the first issue of this report an Ecological Assessment has been undertaken and will be submitted as part of the planning application.)

Appendix A

FIGURES



DO NOT SCALE

Information Classification:

CONFIDENTIAL

Information that is only intended for internal distribution among WSP employees, independent consultants, contractors, sub-contractors, clients and authorised third parties.

Legend :



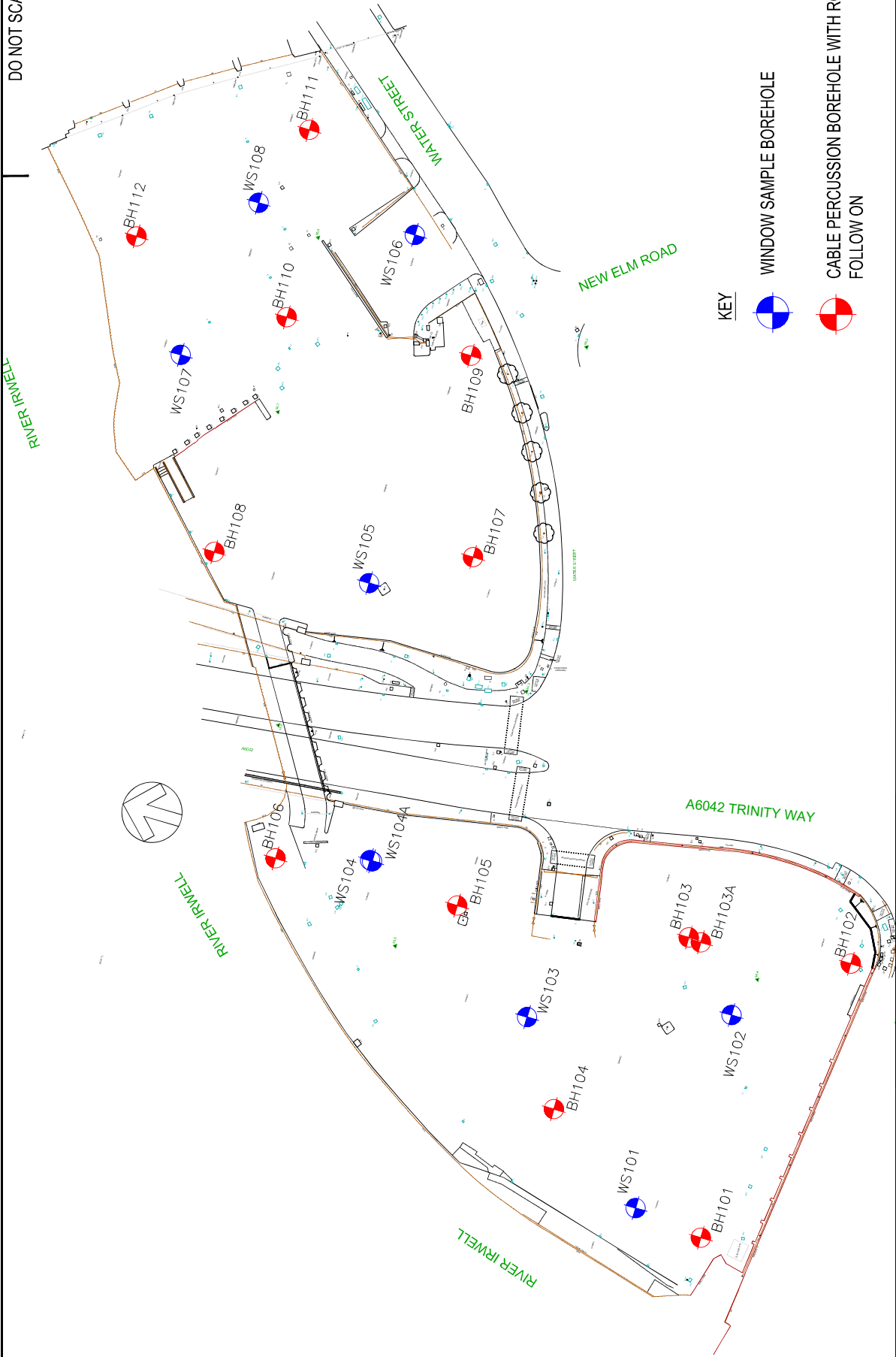
Site Location

Title : Figure 1: Site Location Plan
Author : WSP_Ground and Water
Scale : 1:40,000
Layout : WSP A4 Landscape
Current Time : 06/04/2021 10:03

© WSP UK Ltd



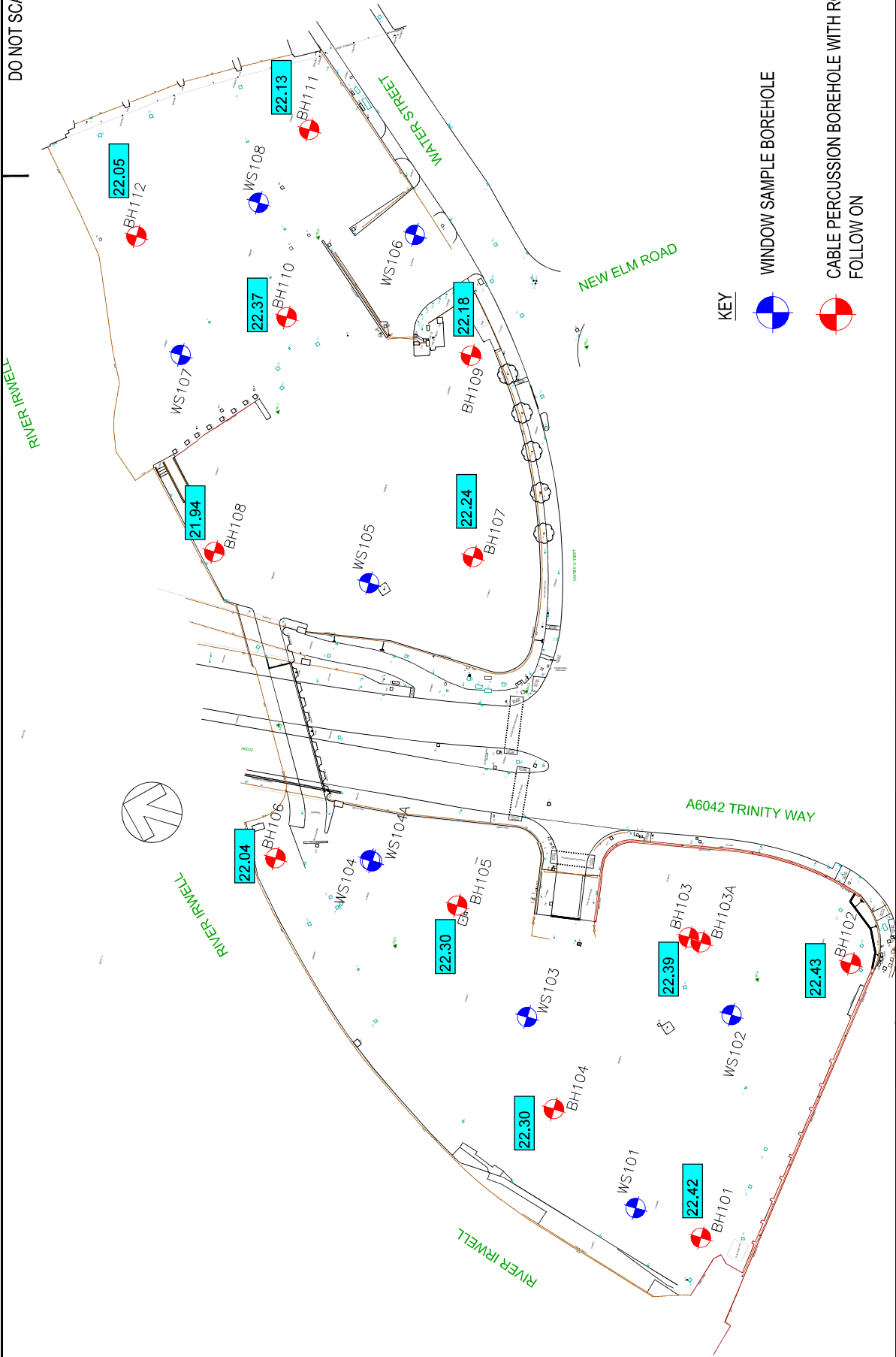
DO NOT SCALE



- KEY**
- WINDOW SAMPLE BOREHOLE
 - CABLE PERCUSSION BOREHOLE WITH ROTARY FOLLOW ON

8 First Street Manchester M15 4RP T + 44 (0) 161 200 5000 wsp.com 										CLIENT PROJECT 70082598 TRINITY ISLANDS										SCALE @ A2 CUSTOM PROJECT No 70082598										CHECKED DW DATE JULY 2021										SC									
ARCHITECT RENAKER BUILD LIMITED SIMPSON HAUGH										TITLE EXPLORATORY HOLE PLAN										DESIGNED EM DRAWN EM										REV 01																			
REV DATE BY DESCRIPTION CHK APP										FIGURE 2										© WSP UK Ltd																													

DO NOT SCALE



KEY

WINDOW SAMPLE BOREHOLE



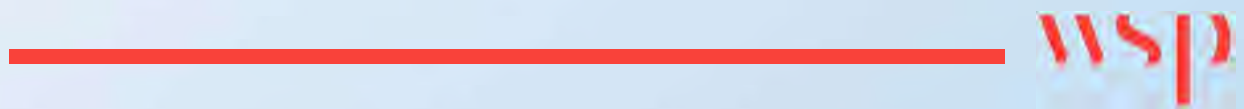
CABLE PERCUSSION BOREHOLE WITH ROTARY FOLLOW ON



 8 First Street Manchester M15 4PP T: +44 (0) 161 200 5000 wsp.com										CLIENT: RENAKER BUILD LIMITED SIMPSON HAUGH										PROJECT: 70082598 TRINITY ISLANDS GROUNDWATER ELEVATIONS (m AOD)										SCALE: A2 Custom PROJECT No: 70082598 DESIGNED: DRAWING: DATE: APPROVED:																																																	
REV DATE BY DESCRIPTION FIRST ISSUE										TITLE										EXAMINING No:										REV: 01																																																	
S2 - FOR INFORMATION																																								© WSP UK Ltd																																							

Appendix B

GENERAL LIMITATIONS



REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

GENERAL

1. WSP UK Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.
2. Unless explicitly agreed otherwise, in writing, this report has been prepared under WSP UK Limited standard Terms and Conditions as included within our proposal to the Client.
3. Project specific appointment documents may be agreed at our discretion and a charge may be levied for both the time to review and finalise appointments documents and also for associated changes to the appointment terms. WSP UK Limited reserves the right to amend the fee should any changes to the appointment terms create an increase risk to WSP UK Limited.
4. The report needs to be considered in the light of the WSP UK Limited proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

PHASE 1 GEO ENVIRONMENTAL AND PRELIMINARY RISK ASSESSMENTS

Coverage: *This section covers reports with the following titles or combination of titles: phase 1; desk top study; geo environmental assessment; development appraisal; preliminary environmental risk assessment; constraints report; due diligence report; geotechnical development review; environmental statement; environmental chapter; project scope summary report (PSSR), program environmental impact report (PEIR), geotechnical development risk register; and, baseline environmental assessment.*

5. The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects responses may not have been received from all parties. WSP UK Limited cannot be held responsible for any disclosures that are provided post production of our report and will not automatically update our report.
6. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, WSP UK Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.
7. It should be noted that any risks identified in this report are perceived risks based on the information reviewed. Actual risks can only be assessed following intrusive investigations of the site.
8. WSP UK Limited does not warrant work / data undertaken / provided by others.



REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

INTRUSIVE INVESTIGATION REPORTS

Coverage: *The following report titles (or combination) may cover this category of work: geo environmental site investigation; geotechnical assessment; GIR (Ground Investigation reports); preliminary environmental and geotechnical risk assessment; and, geotechnical risk register.*

9. The investigation has been undertaken to provide information concerning either:
 - i. The type and degree of contamination present at the site in order to allow a generic quantitative risk assessment to be undertaken; or
 - ii. Information on the soil properties present at the site to allow for geotechnical development constraints to be considered.
10. The scope of the investigation was selected on the basis of the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.
11. For contamination purposes, the objectives of the investigation are limited to establishing the risks associated with potential contamination sources with the potential to cause harm to human health, building materials, the environment (including adjacent land), or controlled waters.
12. For geotechnical investigations the purpose is to broadly consider potential development constraints associated with the physical property of the soils underlying the site within the context of the proposed future or continued use of the site, as stated within the report.
13. The amount of exploratory work, soil property testing and chemical testing undertaken has necessarily been restricted by various factors which may include accessibility, the presence of services; existing buildings; current site usage or short timescales. The exploratory holes completed assess only a small percentage of the area in relation to the overall size of the Site, and as such can only provide a general indication of conditions.
14. The number of sampling points and the methods of sampling and testing do not preclude the possible existence of contamination where concentrations may be significantly higher than those actually encountered or ground conditions that vary from those identified. In addition, there may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.
15. The inspection, testing and monitoring records relate specifically to the investigation points and the timeframe that the works were undertaken. They will also be limited by the techniques employed. As part of this assessment, WSP UK Limited has used reasonable skill and care to extrapolate conditions between these points based upon assumptions to develop our interpretation and conclusions. The assumption made in forming our conclusions is that the ground and groundwater conditions (both chemically and physically) are the same as have been encountered during the works undertaken at the specific points of investigation. Conditions can change between investigation points and these interpretations should be considered indicative.
16. The risk assessment and opinions provided are based on currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values. Specific assumptions associated



REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

with the WSP UK Limited risk assessment process have been outlined within the body or associated appendix of the report.

17. Additional investigations may be required in order to satisfy relevant planning conditions or to resolve any engineering and environmental issues.
18. Where soil contamination concentrations recorded as part of this investigation are used for commentary on potential waste classification of soils for disposal purposes, these should be classed as indicative only. Due consideration should be given to the variability of contaminant concentrations taken from targeted samples versus bulk excavated soils and the potential variability of contaminant concentrations between sampling locations. Where major waste disposal operations are considered, targeted waste classification investigations should be designed.
19. The results of the asbestos testing are factually reported and interpretation given as to how this relates to the previous use of the site, the types of ground encountered and site conceptualisation. This does not however constitute a formal asbestos assessment. These results should be treated cautiously and should not be relied upon to provide detailed and representative information on the delineation, type and extent of bulk ACMs and / or trace loose asbestos fibres within the soil matrix at the site.
20. If costs have been included in relation to additional site works, and / or site remediation works these must be considered as indicative only and must be confirmed by a qualified quantity surveyor.

EUROCODE 7: GEOTECHNICAL DESIGN

21. On 1st April 2010, BS EN 1997-1:2004 (Eurocode 7: Geotechnical Design – Part 1) became the mandatory baseline standard for geotechnical ground investigations.
22. In terms of geotechnical design for foundations, slopes, retaining walls and earthworks, EC7 sets guidance on design procedures including specific guidance on the numbers and spacings of boreholes for geotechnical design, there are limits to methods of ground investigation and the quality of data obtained and there are also prescriptive methods of assessing soil strengths and methods of design. Unless otherwise explicitly stated, the work has not been undertaken in accordance with EC7. A standard geotechnical interpretative report will not meet the requirements of the Geotechnical Design Report (GDR) under Eurocode 7. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. The report is likely to represent a Ground Investigation Report (GIR) under the Eurocode 7 guidance.

DETAILED QUANTITATIVE RISK ASSESSMENTS AND REMEDIAL STRATEGY REPORTS

23. These reports build upon previous report versions and associated notes. The scope of the investigation, further testing and monitoring and associated risk assessments were selected on the basis of the specific development and land use scenario proposed by the Client and may not be appropriate to another form of development or scheme layout. The risk assessment and opinions provided are based on currently available approaches in the generation of Site Specific Assessment Criteria relating to contamination concentrations and are not considered to represent a risk in a specific land use scenario to a specific receptor. No liability can be accepted for the retrospective effects of any future changes or amendments to these values, associated models or associated guidance.



REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

- 24.** The outputs of the Detailed Quantitative Risk Assessments are based upon WSP UK Limited manipulation of standard risk assessment models. These are our interpretation of the risk assessment criteria.
- 25.** Prior to adoption on site they will need discussing and agreeing with the Regulatory Authorities prior to adoption on site. The regulatory discussion and engagement process may result in an alternative interpretation being determined and agreed. The process and timescales associated with the Regulatory Authority engagement are not within the control of WSP UK Limited. All costs and programmes presented as a result of this process should be validated by a quantity surveyor and should be presumed to be indicative.

GEOTECHNICAL DESIGN REPORT (GDR)

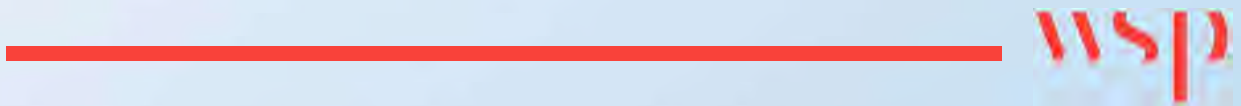
- 26.** The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. All the relevant information needs to be provided to allow for a GDR to be produced.

MONITORING (INCLUDING REMEDIATION MONITORING REPORTS)

- 27.** These reports are factual in nature and comprise monitoring, normally groundwater and ground gas and data provided by contractors as part of an earthworks or remedial works.
- 28.** The data is presented and will be compared with assessment criteria.

Appendix C

EXTRACTED EXPLORATORY HOLE LOGS



BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole
Project No

BH107
PN214217

Client RENAKER BUILD LIMITED

National Grid 397795.9 E
Coordinates 382781.3 N

Ground Level 25.63 m OD

Sampling		Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Case & (to Water)	Strength kPa	w %	SPT N (F)	Description	Depth	Level m OD
0.00- 0.10	D					MADE GROUND: Black tarmacadam.	G.L.	25.63
0.20	ES					Between 0.00m and 0.07m, PAK marker spray test. No PAHs detected.	0.07	25.56
0.20							0.12	25.51
0.50- 1.00	B		PID=0.0				0.27	25.36
0.50	D					MADE GROUND: Grey sandy slightly silty angular to subangular fine to coarse gravel of limestone (Sub base).	0.46	25.17
0.50	ES							
0.50			PID=1.5					
1.00	D					MADE GROUND: Dark grey tar (Recovered as angular medium to coarse gravel).	1.00	24.63
1.00	ES							
1.00			PID=0.0					
1.20- 1.65	B					MADE GROUND: Grey concrete slab.		
1.20- 1.65	D	1.20 (DRY)			S3			
						MADE GROUND: Dark brown, grey, black occasionally reddish brown very gravelly slightly silty fine to coarse sand with a low to medium cobble content. Gravel is angular fine to coarse of ash, clinker, sandstone and brick fragments.		
2.00- 2.45	B							
2.00- 2.45	D	2.00 (DRY)			S8			
						Very loose brown mottled dark grey slightly gravelly slightly clayey fine to medium SAND. Gravel is subangular to subrounded fine to medium of sandstone and coal. Below 2.00m, loose, slightly clayey.	2.50	23.13
3.00- 3.45	B							
3.00- 3.45	D	3.00 (DRY)			S41			
						Dense brown very gravelly silty fine to coarse SAND with a low cobble content. Gravel is subangular to subrounded fine to coarse of sandstone.		
4.00- 4.45	B					Below 4.00m, very dense.		
4.00- 4.37	D	4.00 (3.60)			C50/220			
						Extremely weak reddish brown fine to medium grained SANDSTONE with occasional subrounded clasts (up to 60mm) of quartzite (Recovered as slightly gravelly sand)	4.60	21.03
5.00- 5.45	B							
5.00- 5.15	D	5.00 (3.00)			S50/45			
6.00- 6.45	B				(AZCL)			
6.00- 6.15	D	6.00 (6.45)			S50/45		6.00	19.63
Core Run/Depth (Core Dia/Time)		Depth Cased / Type	TCR/SCR / Type	Length Max/Min	ROD %	SPT (F)	Continued by Rotary techniques	
6.00- 6.60 (109mm)		6.00 (ADDED)	56	0.07	0	(25)	General	
6.60- 8.10 (109mm)		6.00 (ADDED)	95	0.17	32	(NI)	Detail	
			86	0.03		(18)	Extremely weak to very weak reddish brown occasionally mottled grey fine to medium grained SANDSTONE with occasional lenticular clasts of reddish brown mudstone (up to 15mm) and occasional fine to medium inclusions of siltstone and quartzite. Discontinuities are subhorizontal to inclined (20 degrees), very closely to closely spaced, planar and undulating, rough with occasional sand infill (up to 15mm).	
						(AZCL)	Between 6.00m and 6.06m, assumed zone of core loss. Between 6.10m and 6.22m, non-intact. Recovered as sandy gravel. Between 6.60m and 6.67m, assumed zone of core loss. At 7.98m, grey bed (35mm thick), stained orange. Between 8.10m and 9.50m, assumed zone of core loss.	
						(10)		
8.10- 9.60 (109mm)		6.00 (ADDED)	67	0.07	0	(AZCL)		
			6	0.03				
						(20)		
9.60-11.10 (109mm)		6.00 (ADDED)	67	0.13	16	(AZCL)		
			41	0.03				
							Below 9.50m, becoming fine to coarse grained. At 9.50m, medium to coarse inclusion of mudstone.	
Boring				Progress				Groundwater
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time
1.20	0.40	Inspection Pit	LG/LH	G.L.			06/05/21	08:00
6.00	0.20	Cable Percussion	LG/LH	3.50	3.50	DRY	06/05/21	18:00
50.10	0.11	Rotary Core	FB/LP	3.50	3.00	DRY	07/05/21	08:00
				6.00	6.00	3.60	07/05/21	18:00
				6.00	6.00	ADDED	17/05/21	08:00
				9.60	6.00	ADDED	17/05/21	18:00
				Depth Struck	Depth Cased	Rose In	in Mins	Depth Sealed
				4.00	4.00	3.60	20	
				Remarks on Groundwater				
				slow inflow.				
Remarks				Inspection pit hand excavated to 1.20m depth and no services were found.				
				ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.				
				PAK marker spray used on tarmacadam - no PAHs detected (See photograph).				
				PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.				
				** Drillers description.				
				In situ Packer Permeability Tests carried out between 9.00m and 12.00m and between 18.00m and 21.00m.				
				Logged in accordance with BS5930:2015 A1:2020				
Symbols and abbreviations are explained on the accompanying key sheet.				Logged by JP				
All dimensions are in metres.				Figure 1 of 6 08/06/2021				
				geotechnics				

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH107
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397795.9 E
382781.3 N

Ground Level 25.63 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length	RQD	SPT N (F)	Description General	Description Detail	Depth	Legend	Level m OD
					(NI)		Between 9.60m and 10.10m, assumed zone of core loss.			
					(20)		Between 10.10m and 10.21m, non-intact. Recovered as sandy gravel.			
					(NI)		Between 10.28m and 10.80m, subvertical discontinuity, undulating, rough, clean.			
					(12)		Below 10.95m, becomes reddish brown mottled grey and yellowish grey.			
11.10-12.60 (109mm)	6.00 (ADDED)	67 37	0.12 0.01	15	(AZCL)		Between 11.10m and 11.60m, assumed zone of core loss.			
					(15)		Between 11.88m and 12.14m, discontinuities are extremely to very closely spaced, many subrounded medium to coarse inclusions of quartzite.			
					(>30)		Between 12.45m and 12.53m, inclined (50 degrees) discontinuity, undulating, rough, clean.			
					(11)		Between 12.60m and 13.80m, assumed zone of core loss.			
12.60-14.10 (109mm)	6.00 (ADDED)	27 11	0.06 0.01	0	(AZCL)		At 14.10m, angular, coarse inclusion of mudstone.			
					(22)		Between 14.10m and 14.19m, assumed zone of core loss.			
14.10-15.60 (109mm)	6.00 (ADDED)	94 52	0.14 0.01	9	(AZCL)		Between 14.50m and 14.75m, discontinuities are extremely closely to very closely spaced.			
					(12)		Between 15.04m and 15.36m, non-intact. Recovered as sand and gravel.			
					(>30)					
					(12)					
					(NI)					
					(8)					
15.60-17.10 (109mm)	6.00 (ADDED)	100 85	0.16 0.03	35						
					(10)					
17.10-18.60 (109mm)	6.00 (ADDED)	82 52	0.23 0.03	25	(AZCL)		Between 17.10m and 17.37m, assumed zone of core loss.			
					(19)					
					(9)		Between 17.95m and 18.00m, inclined (45 degrees) discontinuity, undulating, rough and clean.			
							Below 18.00m, discontinuities are very closely to medium spaced.			
18.60-20.10 (109mm)	6.00 (ADDED)	100 95	0.27 0.03	61			Between 19.35m and 19.55m, many subrounded fine to medium inclusions of mudstone, siltstone and quartzite.			
					(9)					

Drilling				Progress				Groundwater						
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				9.60	6.00	ADDED	18/05/21	08:00						
				14.10	6.00	ADDED	18/05/21	18:00						
				14.10	6.00	4.10	19/05/21	08:00						
				20.10	6.00	ADDED	19/05/21	18:00						
				20.10	6.00	ADDED	20/05/21	08:00						
				36.60	6.00	ADDED	20/05/21	18:00						

Remarks High Pressure Dilatometer (HPD) Tests carried out by In Situ Ground Investigation Limited at 7.40m and 11.90m.
A 50mm standpipe was installed to 20.00m with a geowrapped slotted section from 3.00m to 20.00m with flush lockable protective cover. Backfill details from base of hole: bentonite seal up to 20.00m, gravel filter up to 3.00m, bentonite seal up to 0.20m, concrete up to ground level.
Chiselling: 2.70-3.00m for 40 minutes and 4.30-4.50m for 60 minutes and 4.60-5.00m for 30 minutes and 5.00-6.00m for 75 minutes.
Logged in accordance with BS5930:2015 A1:2020

Logged by JP
Figure 2 of 6
08/06/2021

geotechnics

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH107
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397795.9 E
382781.3 N

Ground Level 25.63 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD
20.10-21.60 (109mm)	6.00 (ADDED)	67 21	0.06 0.01	0	(AZCL)		Between 20.10m and 20.60m, assumed zone of core loss. Between 20.27m and 20.45m, non-intact. Recovered as sandy gravel. Below 20.60m, discontinuities are very closely to closely spaced. Between 21.60m and 21.70m, non-intact. Recovered as gravel.			
					(15)					
					(NI)					
					(15)					
21.60-23.10 (109mm)	6.00 (ADDED)	100 72	0.15 0.04	18	(NI)		Between 22.01m and 22.20m, subvertical discontinuity, undulating, rough, clean. Between 22.55m and 22.65m, non-intact. Recovered as gravel. Between 23.10m and 23.48m, assumed zone of core loss. Between 23.48m and 23.60m, non-intact. Recovered as sandstone. Between 23.60m and 24.60m, discontinuities are extremely closely to closely spaced. Between 23.90m and 24.28m, vertical discontinuity, undulating, rough, clean. Between 24.60m and 25.18m, assumed zone of core loss. Between 25.30 and 25.40m, subvertical discontinuity, undulating, rough, clean. Between 25.70m and 25.90m, subvertical discontinuity, undulating, rough, clean. Between 26.10m and 27.06m, assumed zone of core loss.			
					(15)					
					(NI)					
					(11)					
23.10-24.60 (109mm)	6.00 (ADDED)	75 41	0.08 0.01	0	(AZCL)		Between 27.06m and 27.45m, non-intact. Recovered as sandy gravel of sandstone. Between 27.45m and 27.55m, subvertical discontinuities, undulating, rough, clean. Between 27.60-27.83m, assumed zone of core loss.			
					(NI)					
					(30)					
24.60-26.10 (109mm)	6.00 (ADDED)	61 24	0.08 0.02	0	(AZCL)		At 28.65m, band of very weak reddish brown mudstone (20mm thick). Between 28.70m and 28.85m, discontinuities are extremely closely spaced. Between 29.10m and 29.18m, assumed zone of core loss.			
					(22)					
26.10-27.60 (109mm)	6.00 (ADDED)	36 8	0.06 0.06	0	(AZCL)					
					(NI)					
					(20)					
27.60-29.10 (109mm)	6.00 (ADDED)	85 48	0.13 0.02	23	(AZCL)					
					(>30)					
					(10)					
					(>30)					
					(12)					
29.10-30.60 (109mm)	6.00 (ADDED)	95 72	0.12 0.02	8	(AZCL)					
					(11)					

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				36.60	6.00	ADDED	21/05/21	08:00						
				50.10	6.00	ADDED	21/05/21	18:00						
				50.10	6.00	ADDED	27/05/21	08:00						
				50.10	6.00	ADDED	22/05/21	18:00						

Remarks **AB** Flush: 6.00-8.10m, Air/Mist, 100% returns; 8.10-9.60m, Water, 50% returns; 9.60-11.10m, Air/Mist, 100% returns; 11.20-14.10m, Water, 75% returns; 14.10-50.10m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JP

Figure 3 of 6
03/06/2021

geotechnics

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH107
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397795.9 E
382781.3 N

Ground Level 25.63 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length	ROD	SPT N	Description General	Description Detail	Depth	Legend	Level m OD
30.60-32.10 (109mm)	6.00 (ADDED)	87 57	0.11 0.02	7	(AZCL) (10)		At 30.15m, non-intact zone (up to 50mm thick). Recovered as sandy gravel of sandstone. Between 30.60m and 30.80m, assumed zone of core loss.			
					(28)		Between 31.25m and 31.75m, discontinuities are extremely closely to closely spaced.			
					(12)		At 31.75m, non-intact zone (up to 20mm thick). Recovered as sandy gravel of sandstone. Between 32.10m and 32.80m, assumed zone of core loss.			
32.10-33.60 (109mm)	6.00 (ADDED)	53 33	0.10 0.02	7	(AZCL)					
					(18)					
					(>30)		Between 33.15m and 33.90m, discontinuities are extremely closely to very closely spaced.			
33.60-35.10 (109mm)	6.00 (ADDED)	95 83	0.16 0.03	40	(AZCL) (>30)		At 33.25m, band of very weak reddish brown mudstone (40mm thick). Between 33.60m and 33.68m, assumed zone of core loss.			
					(9)					
35.10-36.60 (109mm)	6.00 (ADDED)	56 33	0.08 0.03	0	(AZCL)		Between 35.10m and 35.76m, assumed zone of core loss.			
					(19)		Below 35.76m, discontinuities are extremely closely to closely spaced.			
36.60-38.10 (109mm)	6.00 (ADDED)	70 38	0.05 0.02	0	(AZCL)		Between 36.60m and 37.05m, assumed zone of core loss.			
					(26)					
38.10-39.60 (109mm)	6.00 (ADDED)	81 47	0.09 0.02	0	(AZCL)		At 38.95m, non-intact zone (up to 50mm thick). Recovered as sandy gravel of sandstone.			
					(21)		Below 39.50m, discontinuities are very closely to closely spaced.			
39.60-41.10 (109mm)	6.00 (ADDED)	67 35	0.11 0.04	7	(AZCL)					

Drilling				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JP

Figure 4 of 6
08/06/2021



Drilling		Properties/Sampling				Strata		Scale 1:50							
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	ROD %	SPT N (FI)	Description General	Description Detail	Depth	Legend	Level m OD					
					(19)		Between 39.60m and 40.10m, assumed zone of core loss. Between 40.60m and 40.90m, discontinuities have sand and clay infill (up to 15mm thick). Between 41.10m and 41.18m, assumed zone of core loss. Between 41.20m and 42.15m, predominantly grey.								
41.10-42.60 (109mm)	6.00 (ADDED)	95 68	0.27 0.03	21	(AZCL)										
					(17)										
					(9)										
42.60-44.10 (109mm)	6.00 (ADDED)	81 51	0.18 0.02	12	(AZCL)		Between 42.15m and 42.35m, fine grained and slightly silty. Discontinuities are locally medium spaced. Between 42.60m and 42.88m, assumed zone of core loss. Between 42.88m and 44.10m, discontinuities are extremely closely to closely spaced. At 43.73m, non-intact zone (up to 20mm thick). Recovered as gravel of sandstone. Between 44.10-44.20m, assumed zone of core loss. At 44.40m, non-intact zone (up to 40mm thick). Recovered as gravel of sandstone. At 44.55m, band of reddish brown mudstone (50mm thick).								
					(26)										
44.10-45.60 (109mm)	6.00 (ADDED)	93 63	0.12 0.04	23	(AZCL)										
					(12)										
45.60-47.10 (109mm)	6.00 (ADDED)	73 51	0.47 0.02	38	(AZCL)		Between 45.75m and 46.15m, assumed zone of core loss. At 46.15m, non-intact zone (up to 60mm thick). Recovered as gravel of sandstone and mudstone. Between 46.21m and 46.68m, discontinuities are medium spaced. Between 46.80m and 46.90m, many bands of reddish brown mudstone.								
					(7)										
47.10-48.60 (109mm)	6.00 (ADDED)	65 31	0.17 0.05	18	(AZCL)	Extremely to very weak thinly laminated reddish brown MUDSTONE with occasional bands of grey fine to medium grained sandstone (up to 30mm thick). Non-intact, weathered to a clayey gravel.		47.40		-21.77					
					(NI)										
					(9)			48.15		-22.52					
48.60-50.10 (109mm)	6.00 (ADDED)	90 49	0.27 0.02	25	(AZCL)	Extremely to very weak reddish brown mottled grey fine to medium grained SANDSTONE with occasional lenticular clasts of reddish brown mudstone (up to 15mm) and occasional fine to medium inclusions of siltstone and quartzite. Discontinuities are very	Between 48.15m and 48.25m, fine grained and slightly silty. At 48.30m, band of reddish brown mudstone (up to 30mm thick). Between 48.60m and 48.75m, assumed zone of core loss. At 49.65m, band of reddish brown mudstone (up to 30mm).								
					(12)										
Drilling					Progress					Groundwater					
Depth	Hole Dia	Technique		Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
Remarks 															
Symbols and abbreviations are explained on the accompanying key sheet.															
All dimensions are in metres.															
Logged in accordance with BS5930:2015 A1:2020															
Logged by JP															
Figure 5 of 6															
08/05/2021															
															

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH107
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397795.9 E
382781.3 N

Ground Level 25.63 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD				
						closely to medium spaced, subhorizontal to inclined (20 degrees), planar and undulating, rough, clean. End of Borehole	At 48.85m, non-intact zone (up to 50mm thick). Recovered as sandy gravel of sandstone. Between 49-45m and 50.10m, discontinuities are also very closely to closely spaced, inclined (70-80 degrees), planar and undulating, rough, clean. At 49.65m, non-intact zone (up to 50mm). Recovered as very sandy gravel of sandstone and mudstone.	50.10		-24.47				
Drilling						Progress			Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
Remarks  Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres. Logged in accordance with BS5930:2015 A1:2020														
												Logged by JP Figure 6 of 6 08/06/2021 		

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH108
Project No PN214217

Client RENAKER BUILD LIMITED

Grid Coordinates 397847.8 E
382767.4 N

Ground Level 24.69 m OD

Sampling		Properties				Strata		Scale 1:50						
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (F)	Description	Depth	Legend	Level m OD					
0.15- 0.25	B					MADE GROUND: Black tarmacadam.	G.L.		24.69					
0.20	D						0.15		24.54					
0.20	ES					MADE GROUND: Brownish grey very sandy angular to subangular fine to coarse gravel of limestone and sandstone (Sub base).	0.25		24.44					
0.25- 1.20	B													
0.20	D		PID=0.0											
0.50	D													
0.50	ES		PID=0.0			MADE GROUND: Reddish brown gravelly fine to coarse sand with a low cobble content. Gravel is subangular to rounded fine to coarse of sandstone and tarmacadam.								
1.00	D					Below 1.20m, medium dense.								
1.00	ES		PID=0.0											
1.20- 1.65	B													
1.20- 1.65	D (DRY)				S11									
2.00- 2.45	B													
2.00- 2.45	D	2.00			S24	Medium dense light brown gravelly silty fine to coarse SAND with a low cobble content. Gravel is angular to subrounded fine to coarse of sandstone (Possible Made Ground).	2.00		22.69					
2.00	ES (DRY)		PID=0.0											
2.00														
3.00- 3.45	B													
3.00- 3.45	D	3.00			S17									
3.00	ES (DRY)		PID=0.0											
3.00														
4.00- 4.45	#	4.00			S3									
4.00- 4.45	B (DRY)					Very loose greyish brown sandy gravelly SILT. Gravel is angular to subrounded fine to coarse of sandstone.	4.00		20.69					
5.00- 5.45	B													
5.00- 5.17	D	5.00			S50/50	Extremely weak reddish brown fine to medium grained SANDSTONE (Recovered as fine to coarse sand).	5.00		19.69					
5.00	(DRY)													
6.00- 6.11	#	6.00			S50/50	Between 6.00m and 6.45m, assumed zone of core loss.	6.11		18.58					
6.00	(DRY)													
Core Run/Depth-Depth (Core Dia/Time)		TCR/SCR / Type	Length Max/Min	ROD %	SPT (F)	Continued by Rotary techniques								
						General	Detail							
6.11- 7.00 (92mm)	6.00 (ADDED)	55 30	0.07 0.02	0	(AZCL)	Extremely weak to very weak thinly to widely bedded reddish brown medium to coarse grained SANDSTONE with occasional rounded clasts (up to 60mm) of mudstone and quartzite.	Between 7.00m and 7.60m, assumed zone of core loss.							
7.00- 8.50 (92mm)	6.00 (ADDED)	60 47	0.09 0.01	0	(AZCL)	Discontinuities are subhorizontal to inclined (20 degrees), very closely to closely spaced, planar and undulating, rough, clean.								
8.50-10.00 (92mm)	6.00 (ADDED)	66 49	0.13 0.02	17	(AZCL)		Between 8.50m and 9.00m, assumed zone of core loss.							
					(15)									
Boring		Progress				Groundwater								
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose In	In Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	LM/MP	G.L.			06/05/21	08:00	26.00	6.00	3.90	20		Fast inflow.
6.11	0.20	Cable Percussion	LM/MP	6.11	6.00	DRY	06/05/21	18:00	28.50	6.00	4.00	20		Fast inflow.
35.50	0.09	Rotary Core	JB/CB	6.11	6.00	2.90	11/05/21	08:00						
				8.50	6.00	3.00	11/05/21	18:00						
				8.50	6.00	3.10	12/05/21	08:00						
				26.50	6.00	4.60	12/05/21	18:00						
Remarks														
Inspection pit hand excavated to 1.20m depth and no services were found.														
ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.														
PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.														
In situ Packer Permeability Tests carried out between 8.00m and 11.00m and between 12.00m and 15.00m.														
A 50mm standpipe was installed to 20.00m with a geowrapped slotted section from 3.00m to 20.00m with flush lockable protective cover. Backfill details from base of hole: bentonite														
Logged in accordance with BS5930:2015 A1:2020														
Logged by JP														
Figure 1 of 4														
09/06/2021														
geotechnics														

geotechnics

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	ROD %	SPT N (F)	Description General	Description Detail	Depth	Legend	Level m OD				
10.00-11.50 (92mm)	6.00 (ADDED)	26 20	0.11 0.03	7	(AZCL)		Between 10.00m and 11.12m, assumed zone of core loss.							
					(15)									
11.50-13.00 (92mm)	6.00 (ADDED)	96 76	0.22 0.04	47	(AZCL)		Between 11.50m and 11.56m, assumed zone of core loss. Below 11.56m, very closely spaced, very thin to thin yellowish grey beds.	12.00		12.69				
					(10)									
					(NI)	Extremely weak to very weak dark reddish brown occasionally mottled grey medium to coarse grained SANDSTONE with occasional subrounded to rounded clasts (up to 60mm) of mudstone and quartzites. Discontinuities are subhorizontal, very closely to medium spaced, undulating and planar, rough, clean	Between 12.16m and 12.92m, fine to medium grained. Between 12.73m and 12.92m, non-intact. Recovered as gravelly sand. Between 13.30m and 13.36m, assumed zone of core loss.							
13.00-14.50 (92mm)	6.00 (ADDED)	76 69	0.20 0.02	33	(12)									
					(AZCL)									
					(17)									
					(7)									
14.50-16.00 (92mm)	6.00 (ADDED)	86 67	0.14 0.02	41	(AZCL)									
					(13)									
					(NI)									
					(9)									
16.00-17.50 (92mm)	6.00 (ADDED)	73 47	0.20 0.01	38	(AZCL)		Between 16.00m and 16.40m, assumed zone of core loss. Between 16.40m and 16.70m, non-intact. Recovered as sandy gravel. Below 16.87m, discontinuities are very closely to medium spaced. Between 17.16m and 17.18m, grey mottled reddish brown bed. Between 17.50m and 17.65m, assumed zone of core loss. Below 18.00m, discontinuities with some sand infill (up to 25mm). Between 18.33m and 18.60m, vertical discontinuity, undulating, rough. Between 18.54m and 18.66m, inclined (65 degrees) discontinuity, planar, rough with some sand infill (up to 5mm). Between 19.00m and 19.10m, assumed zone of core loss.							
					(NI)									
					(24)									
					(5)									
17.50-19.00 (92mm)	6.00 (ADDED)	90 72	0.21 0.02	43	(AZCL)									
					(9)									
19.00-20.50 (92mm)	6.00 (ADDED)	93 49	0.15 0.02	39	(AZCL)									
					(17)									
Drilling						Progress				Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				26.50	6.00	4.00	13/05/21	08:00						
				35.50	6.00	4.10	13/05/21	18:00						
Remarks														
Seal up to 20.00m, gravel filter up to 3.00m, bentonite seal up to 0.20m, concrete up to ground level. Flush: 6.00-35.50m, Air/Mist, 100% return.														
Symbols and abbreviations are explained on the accompanying key sheet.														
All dimensions are in metres.														
Logged in accordance with BS5930:2015 A1:2020														
Logged by JP														
Figure 2 of 4														
08/05/2021														
geotechnics														

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH108
FN214217

Client RENAKER BUILD LIMITED

Grid Coordinates 397847.8 E
382767.4 N

Ground Level 24.69 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length	RQD	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD				
20.50-22.00 (92mm)	6.00 (ADDED)	87 29	0.13 0.01	13	(AZCL)		Between 19.10m and 19.17m, grey mottled reddish brown. Below 20.18m, additional subvertical discontinuities are, very closely to closely spaced, undulating, rough, clean with occasional clay infill (up to 4mm). Between 20.50m and 20.70m, assumed zone of core loss. Below 20.90m, reddish brown mottled grey closely to widely spaced, thin to medium yellowish grey beds. Between 20.96m and 21.15m, non-intact. Recovered as gravelly slightly clayey sand. Between 21.90m and 22.00m, non-intact. Recovered as sand. Between 22.00m and 22.33m, assumed zone of core loss. Between 22.58m and 22.70m, non-intact. Recovered as gravelly sand. Below 22.70m, subvertical discontinuities are medium to widely spaced. Between 24.26m and 24.40m, band of very weak reddish brown mudstone.							
22.00-23.50 (92mm)	6.00 (ADDED)	78 57	0.70 0.03	47	(AZCL)									
23.50-25.00 (92mm)	6.00 (ADDED)	100 84	0.20 0.04	66	(8)									
25.00-26.50 (92mm)	6.00 (ADDED)	90 74	0.22 0.05	37	(AZCL)									
26.50-28.00 (92mm)	6.00 (ADDED)	61 51	0.37 0.01	38	(AZCL)		Between 26.50m and 27.09m, assumed zone of core loss. Below 27.09m, thick laminae of weak reddish brown mudstone.							
28.00-29.50 (92mm)	6.00 (ADDED)	61 45	0.17 0.01	29	(AZCL)	Very weak thinly to medium bedded reddish brown fine to medium grained SANDSTONE with occasional very thin dark grey beds. Discontinuities are subhorizontal to inclined (20 degrees), closely to medium spaced, planar, rough, clean.	Between 28.00m and 28.73m, assumed zone of core loss. Below 28.90m, discontinuities are extremely closely spaced. At 29.22m, thick bluish grey laminae. Between 29.50m and 30.50m, assumed zone of core loss.							
29.50-31.00 (92mm)	6.00 (ADDED)	33 19	0.09 0.03	0	(AZCL)									
Drilling						Progress			Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
Remarks														
Symbols and abbreviations are explained on the accompanying key sheet.														
All dimensions are in metres.														
Logged in accordance with BS5930:2015 A1:2020														
Logged by JP														
Figure 3 of 4 08/06/2021														

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH108
Project No PN214217

Client RENAKER BUILD LIMITED

Grid Coordinates 397847.8 E
382767.4 N

Ground Level 24.69 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length	ROD	SPT N	Description General	Description Detail	Depth	Legend	Level m OD
					(16)	Extremely weak reddish brown mottled grey medium to coarse grained SANDSTONE with occasional subrounded to rounded clasts (up to 60mm) of mudstone and quartzite. Discontinuities are subhorizontal, very closely to closely spaced, planar and undulating, rough, clean.	Between 30.77m and 30.87m, non-intact. Recovered as gravel. Between 31.00m and 31.34m, two vertical discontinuities, undulating, rough, clean. Below 31.47m, discontinuities are very closely to medium spaced.	30.45		-5.76
					(NI)					
31.00-32.50 (92mm)	6.00 (ADDED)	100 86	0.31 0.02	73	(15)					
					(18)					
					(6)					
					(AZCL)		Between 32.50m and 32.69m, assumed zone of core loss.			
					(8)		Between 33.10m and 33.18m, non-intact. Recovered as sandy gravel.			
					(NI)		At 33.34m, thick orange laminae.			
					(4)		Between 33.35m and 33.45m, fine to medium grained.			
					(AZCL)		Between 34.00m and 34.50m, assumed zone of core loss.			
32.50-34.00 (92mm)	6.00 (ADDED)	88 75	0.43 0.04	58			Between 34.05m and 34.15m, non-intact. Recovered as gravel.	35.50		-10.81
					(NI)		Between 34.60m and 35.05m, three subvertical discontinuities, undulating, rough, clean.			
					(4)					
					(15)					
					(2)					
						End of Borehole				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JP

Figure 4 of 4
08/06/2021

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole
Project No

BH109
PN214217

Client RENAKER BUILD LIMITED

National Grid 397807.9 E
Coordinates 382821.3 N

Ground Level 25.93 m OD

Sampling		Properties			Strata		Scale 1:50							
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (F)	Description	Depth	Legend	Level m OD					
0.08- 0.25	B					MADE GROUND: Black tarmacadam.	G.L.		25.93					
0.20	D						0.08		25.85					
0.20	ES					MADE GROUND: Grey sandy slightly silty angular to subangular fine to coarse gravel of limestone (Sub base).	0.25		25.68					
0.25- 1.20	B													
0.20			PID=0.0											
0.50	D													
0.50	ES					MADE GROUND: Dark brown, black occasionally reddish brown very gravelly slightly silty fine to coarse sand with a medium cobble content. Gravel is angular fine to coarse of ash, clinker, sandstone, concrete and brick fragments.								
0.50			PID=0.0											
1.00	D													
1.00	ES													
1.00			PID=0.0											
1.20- 1.65	B					Below 1.20m, very loose to loose, silty. Occasional pockets of soft sandy slightly gravelly clay.								
1.20- 1.65	D	(DRY)			S4									
2.00- 2.45	B													
2.00- 2.45	D	2.00 (DRY)			S4	Soft to firm reddish brown slightly gravelly very sandy CLAY. Gravel is angular fine to medium of coal.	2.10		23.83					
2.00			PID=0.4											
2.70	D													
3.00- 3.45	B													
3.00- 3.45	D	3.00 (DRY)			S14	Below 3.00m, medium dense.								
4.00- 4.45	B													
4.00- 4.45	D	4.00 (DRY)			S44	Dense brown very sandy slightly clayey subrounded to rounded fine to coarse GRAVEL of siltstone and sandstone. Low to medium cobble content.	4.00		21.93					
5.00- 5.45	B													
5.00- 5.31	D	5.00 (4.50)			C50/155	Below 5.00m, very dense.								
5.80	D													
6.00- 6.45	B													
6.00- 6.10	D	6.00 (4.00)			S50/50	Extremely weak to weak reddish brown fine to medium grained SANDSTONE (Recovered as slightly gravelly silty sand). Between 6.00m and 10.70m, no recovery.	5.80		20.13					
7.00	D													
7.50- 7.95	B													
7.50- 7.57	D	7.50 (5.00)			C50/30									
8.50	D													
9.00- 9.06	D	9.00 (6.00)			S50/30	Below 8.50m, recovered as slightly gravelly sand.								
9.06							9.06		16.87					
Core Run/Depth- Depth (Core Dia/Time) - Cased		TCR/SCR / Type	Length Max/Min	RQD %	SPT (F)	Continued by Rotary techniques General		Detail						
9.06- 9.50 (92mm)		6.00 (ADDED)	0	0.00	0	**Reddish brown fine to medium grained SANDSTONE.								
			0.00	0.00	(AZCL)									
Boring					Progress			Groundwater						
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	LM/MP	G.L.			30/04/21	08:00						None encountered.
7.00	0.20	Cable Percussion	LM/MP	7.60	6.00	4.00	30/04/21	18:00						
9.00	0.15	Cable Percussion	LM/MP	7.60	6.00	5.00	04/05/21	08:00						
25.50	0.09	Rotary Core	JB/CB	9.06	9.00	6.00	04/05/21	18:00						
				9.06	9.00	3.10	18/05/21	08:00						
				15.00	12.00	4.10	20/05/21	18:00						
Remarks														
Inspection pit hand excavated to 1.20m depth and no services were found.														
ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.														
PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.														
Water was added to assist boring between 4.60m and 7.00m.														
** Drillers description.														
A 50mm standpipe was installed to 25.00m with a geowrapped slotted section from 3.00m to 25.00m with flush lockable protective cover. Backfill details from base of hole: bentonite														
Logged in accordance with BS5930:2015 A1:2020														
Symbols and abbreviations are explained on the accompanying key sheet.										Logged by JG				
All dimensions are in metres.										Figure 1 of 3				
										08/06/2021				
										geotechnics				

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH109
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397807.9 E
382821.3 N

Ground Level 25.93 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD
9.50-10.50 (92mm)	6.00 (ADDED)	0	0.00	0						
9.50-9.55 (92mm)	9.50 (3.10)	0	0.00		C50/24					
10.50-10.54 (92mm)	10.50 (3.10)				C50/14					
10.70-11.50 (92mm)	6.00 (ADDED)	100 23	0.10 0.01	12.5	(NI) (14) (NI)	Extremely weak to very weak reddish brown medium grained SANDSTONE with occasional subrounded to rounded medium to coarse inclusions of mudstone, siltstone, sandstone and quartzite. Discontinuities are subhorizontal to inclined (20 degrees), very closely to closely spaced, undulating and planar, rough, clean with occasional sand infill.	Between 10.70m and 10.83m, non-intact. Recovered as sand. Between 10.90m and 11.40m, non-intact. Recovered as sand and gravel. Between 11.50m and 12.12m, assumed zone of core loss. Between 12.12m and 12.23m, non-intact. Recovered as gravel. Between 12.50m and 13.00m, no recovery.	10.70		15.23
11.50-12.50 (92mm)	10.50 (ADDED)	38 24	0.09 0.06	0	(10) (AZCL) (NI) (12) (NR)		Between 13.00m and 14.00m, assumed zone of core loss.			
12.50-12.55 (92mm)	12.50 (3.10)				C50/23		Between 14.00m and 14.50m, no recovery.			
13.00-14.00 (92mm)	10.50 (ADDED)	0	0.00	0	(AZCL)		Between 14.50m and 15.00m, assumed zone of core loss.			
14.00-14.06 (92mm)	10.50 (2.90)				(NR) C50/31		Between 15.00m and 15.50m, no recovery.			
14.50-15.00 (92mm)	10.50 (ADDED)	0	0.00	0	(AZCL)		Between 15.50m and 15.60m, assumed zone of core loss.			
15.00-15.04 (92mm)	13.50 (2.90)				(NR) C50/18		Between 15.60m and 16.00m, non-intact. Recovered as gravel. Between 16.00m and 17.05m, assumed zone of core loss.			
15.50-16.50 (92mm)	13.50 (ADDED)	80 0	0.00 0.00	0	(AZCL) (NI)		Between 17.05m and 17.19m, non-intact. Recovered as gravel. Between 17.29m and 17.39m, non-intact. Recovered as gravel. Between 17.50m and 18.00m, no recovery. Between 18.00m and 18.22m, assumed zone of core loss. Between 18.22m and 18.26m, grey.			
16.00-16.05 (92mm)	13.50 (2.90)				C50/21		Between 18.75m and 19.13m, vertical discontinuity, planar, stepped, with some clay smear. Below 18.76m, discontinuities are also subvertical, medium to widely spaced, undulating, rough, clean with occasional reddish brown clay smear.			
16.50-17.50 (92mm)	13.50 (ADDED)	30 10	0.06 0.03	0	(AZCL) (NI) (14) (NI) (18) C50/22					
17.50-17.55 (92mm)	13.50 (2.90)				(NR)					
18.00-19.50 (92mm)	13.50 (ADDED)	85 80	0.20 0.06	46	(AZCL) (12)					
19.50-21.00 (92mm)	13.50 (ADDED)	93 76	0.23 0.03	50	(AZCL) (9)					

Drilling				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed
				15.00	12.00	2.90	19/05/21	08:00					
				25.50	13.50	3.00	05/05/21	18:00					

Remarks Seal up to 25.00m, gravel filter up to 3.00m, bentonite seal up to 0.20m, concrete up to 0.20m. Chiselling: 5.80-7.00m for 120 minutes Slow boring. Flush: 6.00-11.50m, Air/Mist, 50% returns; 11.50-12.50m, Air/Mist, 60% returns; 12.50-25.50m, Air/Mist, 100% returns; 13.00-14.00m, Air/Mist, 60% returns; 14.00-15.00m, Air/Mist, 50% return. Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres.										Logged by JG Figure 2 of 3 03/06/2021 			
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BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH109
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid 397807.9 E
Coordinates 382821.3 N

Ground Level 25.93 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (FI)	Description General	Description Detail	Depth	Legend	Level m OD
					(NI)		Between 19.50m and 19.60m, assumed zone of core loss.			
					(5)		Between 19.75m and 19.93m, fine to medium grained slightly silty bed.			
21.00-22.50 (92mm)	13.50 (ADDED)	93 82	0.18 0.03	47	(AZCL)		At 19.94m, gravel band.			
					(8)		Between 20.30m and 20.42m, non-intact. Recovered as sandy gravel.			
							Between 21.00m and 21.10m, assumed zone of core loss.			
22.50-24.00 (92mm)	13.50 (ADDED)	45 34	0.11 0.04	14	(AZCL)		Between 22.27m and 22.50m, subvertical discontinuity, planar, rough, clean.			
							Between 22.50m and 22.32m, assumed zone of core loss.			
					(20)		Below 23.47m, medium to coarse grained.			
					(NI)		Between 23.72m and 23.86m, subvertical discontinuity, undulating, rough with reddish brown clay smear.			
24.00-24.05 (2.90)	13.50 (2.90)				(50/27)		Between 23.94m and 24.00m, non-intact. Recovered as sandy slightly gravelly clay.			
24.50-25.50 (92mm)	13.50 (ADDED)	12 4	0.06 0.01	0	(AZCL)		Between 24.00m and 25.32m, assumed zone of core loss.			
					(NI)		Between 25.32m and 25.44m, non-intact. Recovered as gravel.			
					(17)	End of Borehole		25.50		0.43

Drilling				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres. Logged in accordance with BS5930:2015 A1:2020

Logged by JG

Figure 3 of 3
08/06/2021



Ground Level 25.79 m OD

Sampling			Properties			Strata		Scale 1:50						
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (F)	Description	Depth	Legend	Level m OD					
0.00- 0.10	D					MADE GROUND: Black tarmacadam.	0.08		25.79					
0.10- 0.30	B					Between 0.00m and 0.08m, PAK marker spray test. No PAHs detected.	0.30		25.71					
0.20	D													
0.20	ES								25.49					
0.20	D													
0.30	D					MADE GROUND: Grey sandy slightly silty angular to subangular fine to coarse gravel of limestone (Sub base).								
0.50- 1.00	B													
0.50	ES													
0.50	D													
1.00	ES					MADE GROUND: Dark brownish grey, black occasionally reddish brown very gravelly slightly silty fine to coarse sand with a low cobble content. Gravel is angular fine to coarse of ash, clinker, sandstone, concrete and brick fragments.								
1.00	D					Below 1.20m, loose, silty.								
1.20- 1.65	B													
1.20- 1.65	D	1.20 (DRY)			S5	Below 2.00m, brown.								
2.00- 2.45	B													
2.00- 2.45	D	2.00 (DRY)			S9									
2.60	D						2.60		23.19					
3.00- 3.45	B					Medium dense orangish brown slightly gravelly slightly silty fine to medium SAND. Gravel is angular fine to medium of sandstone and coal.								
3.00- 3.45	D	3.00 (DRY)			S12									
3.50	D						3.50		22.29					
4.00- 4.45	B					Very dense brown very silty fine to medium SAND and subangular to subrounded fine to coarse GRAVEL of sandstone. Medium cobble content.								
4.00- 4.42	D	4.00 (DRY)			C50/270									
5.00- 5.45	B					Extremely weak to weak reddish brown fine to medium SANDSTONE (Recovered as slightly gravelly fine to medium sand).	4.60		21.19					
5.00- 5.13	D	5.00 (3.90)			S50/60									
6.00- 6.14	D	6.00 (4.20)			S50/50		6.14		19.65					
Core Run/Depth-Depth (Core Dia/Time)	Depth Cased / Type	TCR/SCR / Type	Length Max/Min	ROD %	SPT (F)	Continued by Rotary techniques General	Detail							
6.14- 7.50 (92mm)	6.00 (ADDED)	37 13	0.07 0.02	0	(AZCL)	Extremely weak reddish brown with occasional buff bands fine to medium grained SANDSTONE with some well rounded clasts (up to 50mm) of quartz, siltstone and quartzite.	Between 7.05m and 7.50m, Discontinuities are inclined (20 degrees), extremely closely to closely spaced, undulating and rough.							
					(NI)									
					(>30)									
7.50- 9.00 (92mm)	6.00 (ADDED)	23 7	0.06 0.02	0	(AZCL)		Between 8.85m and 9.00m, Discontinuities are inclined (20 degrees), extremely closely to closely spaced, undulating and rough. Between 9.00m and 17.40m, weak locally extremely weak.							
					(NI)									
					(>30)									
9.00-10.50 (92mm)	6.00 (ADDED)	100 85	0.24 0.03	63										
Boring			Progress			Groundwater								
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose In	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	LG/LH	6.14	1.20	DRY	07/05/21	08:00	4.70	4.50	3.90	20		slow inflow.
6.00	0.20	Cable Percussion	LG/LH	1.80	1.20	DRY	07/05/21	18:00						
35.00	0.09	Rotary Core	SG/TH	1.80	1.20	DRY	10/05/21	08:00						
				6.14	6.00	4.20	08/05/21	18:00						
				6.14	6.00	3.40	26/05/21	08:00						
				18.00	6.00	3.40	11/05/21	18:00						
Remarks														
Inspection pit hand excavated to 1.20m depth and no services were found.														
ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.														
PAK marker spray used on tarmacadam - no PAHs detected (See photograph).														
PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.														
** Drillers description.														
A 50mm standpipe was installed to 20.00m with a geowrapped slotted section from 3.00m to 20.00m with flush lockable protective cover. Backfill details from base of hole: bentonite														
Logged in accordance with BS5930:2015 A1:2020														
Figure 1 of 4 08/06/2021														
geotechnics														

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	ROD %	SPT N (FI)	Description General	Description Detail	Depth	Legend	Level m OD				
							Between 9.20m and 12.00m, subhorizontal to inclined (20 degrees), very closely to medium spaced, undulating and planar, rough discontinuities.							
10.50-12.00 (92mm)	6.00 (ADDED)	97 85	0.27 0.05	60	(8)									
12.00-13.50 (92mm)	6.00 (ADDED)	88 41	0.18 0.02	29	(AZCL)		Between 12.50m and 12.85m, Discontinuities are subhorizontal to subvertical, extremely closely to very closely spaced, undulating, rough with some sand infill.							
					(NI)									
					(>30)									
					(NI)									
					(8)									
13.50-15.00 (92mm)	6.00 (ADDED)	77 31	0.15 0.02	10	(AZCL)		Between 12.85m and 13.80m, Discontinuities are subhorizontal, very closely to closely spaced, undulating with some sand infill.							
					(>30)		Between 12.95m and 12.98m, non-intact.							
					(NI)		Between 13.10m and 13.14m, non-intact.							
					(>30)		Between 13.85m and 13.95m, Discontinuities are subhorizontal, very closely spaced, undulating, rough with some sand infill.							
					(NI)		Between 14.15m and 14.54m, Discontinuities are subhorizontal, very closely spaced, undulating, rough with some sand infill.							
15.00-16.50 (92mm)	6.00 (ADDED)	99 45	0.09 0.01	0	(18)		Between 14.60m and 15.00m, subhorizontal, very closely to closely spaced, undulating and planar, rough discontinuities.							
							Between 15.00m and 16.50m, Discontinuities are subhorizontal locally inclined (60 degrees), extremely closely spaced, undulating and planar with some sand infill.							
16.50-18.00 (92mm)	6.00 (ADDED)	80 37	0.10 0.02	7	(AZCL)		Between 15.25m and 15.30m, non-intact.							
					(12)		Between 15.55m and 15.60m, non-intact.							
					(NI)		Between 16.10m and 15.15m, non-intact.							
					(>30)		Between 16.80m and 17.40m, Discontinuities are subhorizontal, closely spaced and rough.							
					(NI)		Between 16.95m and 16.98m, non-intact.							
18.00-19.50 (92mm)	6.00 (ADDED)	52 5	0.04 0.04	0	(AZCL)		Between 17.40m and 21.60m, extremely weak to very weak.							
					(NI)									
19.50-21.00 (92mm)	6.00 (ADDED)	98 24	0.08 0.02	0	(>30)									
					(NI)									
Drilling						Progress			Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				18.00	6.00	3.40	27/05/21	08:00						
				35.00	6.00	3.40	27/05/21	18:00						
Remarks														
Seal up to 20.00m, gravel filter up to 3.00m, bentonite seal up to 0.20m, concrete up to ground level.														
Chiselling: 3.70-4.00m for 30 minutes and 4.60-5.00m for 25 minutes and 5.00-6.00m for 60 minutes.														
Flush: 6.00-35.00m, Air/Mist, 100% return.														
Symbols and abbreviations are explained on the accompanying key sheet.														
All dimensions are in metres.														
Logged in accordance with BS5930:2015 A1:2020														
Figure 2 of 4 08/05/2021														
geotechnics														

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH110
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397846.9 E
382818.4 N

Ground Level 25.79 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (Fl)	Description General	Description Detail	Depth	Legend	Level m OD				
					(>30)		Between 17.50m and 17.60m, Discontinuities are horizontal, very closely spaced, planar and rough.							
					(NI)		Between 19.60m and 19.75m, Discontinuities are subhorizontal, extremely closely to very closely spaced, planar, rough with some sand infill.							
21.00-22.50 (92mm)	6.00 (ADDED)	100 67	0.16 0.02	16	(25)		Between 20.10m and 20.35m, Discontinuities are subhorizontal, very closely spaced, undulating and planar with some sand infill.							
					(11)		Between 20.90m and 21.60m, Discontinuities are subhorizontal to inclined (20 degrees), very closely occasionally closely spaced, undulating and planar, rough with some sand infill.							
22.50-24.00 (92mm)	6.00 (ADDED)	93 45	0.12 0.02	8	(NI)		Below 21.20m, occasional clasts (up to 20mm) of mudstone.							
					(25)		Between 21.60m and 22.60m, very weak.							
					(NI)		Between 21.60m and 22.60m, subhorizontal to inclined (30 degrees), closely occasionally very closely spaced, undulating and planar, rough discontinuities.							
					(11)		Between 22.60m and 23.50m, extremely weak to very weak.							
24.00-27.00 (92mm)	6.00 (ADDED)	40 30	0.21 0.02	13	(AZCL)		Between 22.85m and 23.10m, Discontinuities are horizontal, very closely spaced, undulating and planar, rough with some sand infill.							
					(23)		Between 22.95m and 22.99m, non-intact.							
					(7)		Between 23.20m and 24.00m, Discontinuities are horizontal, very closely to closely spaced, undulating and subplanar, rough with local sand infill.							
27.00-28.50 (92mm)	6.00 (ADDED)	0 0	0.00 0.00	0	(AZCL)		Between 23.40m and 23.44m, non-intact.							
							Between 23.50m and 24.00m, very weak.							
							Between 25.80m and 26.20m, extremely weak to very weak.							
28.50-30.00 (92mm)	6.00 (ADDED)	60 30	0.11 0.04	14			Between 25.80m and 26.20m, Discontinuities are horizontal, very closely spaced, undulating and rough.							
					(12)		Between 25.85m and 25.88m, non-intact.							
							Between 26.00m and 26.05m, non-intact.							
							Between 26.20m and 27.00m, very weak.							
							Between 26.20m and 27.00m, subhorizontal, closely to medium spaced, undulating and rough.							
Drilling						Progress			Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Figure 3 of 4
08/06/2021



BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH110
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397846.9 E
382818.4 N

Ground Level 25.79 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (FI)	Description General	Description Detail	Depth	Legend	Level m OD
30.00-31.50 (92mm)	6.00 (ADDED)	59 25	0.08 0.01	0	(AZCL)		Between 29.10m and 30.00m, subhorizontal, very closely to closely spaced, undulating and planar, rough discontinuities. Between 29.10m and 30.00m, very weak. Between 30.60m and 34.50m, extremely weak. Between 30.90m and 31.10m, Discontinuities are horizontal, extremely closely spaced, planar, rough with some sand infill. Between 31.10m and 31.50m, Discontinuities are horizontal, very closely to closely spaced, undulating and planar, rough with some sand infill.	35.00		-9.21
					(NI)					
					(>30)					
					(17)					
31.50-33.00 (92mm)	6.00 (ADDED)	90 20	0.07 0.01	0	(AZCL)		Between 31.95m and 32.25m, Discontinuities are horizontal, extremely closely to closely spaced, undulating and planar, rough with much sand infill. Between 32.60m and 33.00m, Discontinuities are subhorizontal, occasionally inclined (60 degrees), very closely to closely spaced, undulating and planar, rough with some sand infill. Between 32.70m and 32.75m, non-intact. Between 32.85m and 32.87m, non-intact. Between 33.85m and 34.50m, Discontinuities are horizontal, very closely to closely spaced, undulating and planar, rough intersecting subvertical extremely closely to very closely spaced discontinuities. Below 34.50m, extremely weak to very weak. Discontinuities are subhorizontal, very closely to closely spaced, undulating and planar, rough with some sand infill (up to 2mm).			
					(10)					
					(NI)					
					(>30)					
33.00-34.50 (92mm)	6.00 (ADDED)	77 0	0.00 0.00	0	(AZCL)		End of Borehole			
					(NI)					
					(>30)					
					(17)					
34.50-35.00 (92mm)	6.00 (ADDED)	80 38	0.08 0.02	0	(17)					

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Figure 4 of 4
08/06/2021



Ground Level 26.40 m OD

[illegible]

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH111
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid 397853.2 E
Coordinates 382857.0 N

Ground Level 26.40 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	ROD %	SPT N (FI)	Description General	Description Detail	Depth	Legend	Level m OD
10.00-11.50 (92mm)	6.00 (ADDED)	89 79	0.24 0.04	61	(10)	At 9.15m, many subrounded fine to coarse inclusions of quartz and siltstone. Below 9.59m, discontinuities are very closely to medium spaced. Between 10.59m and 10.66m, non-intact. Recovered as sandy gravel. Below 10.90m, occasionally mottled grey. Between 11.50m and 11.71m, assumed zone of core loss.	Between 11.94m and 12.42m, very weak reddish brown mudstone lamina (30mm thick). Extremely weak to very weak yellowish and reddish brown medium to coarse grained SANDSTONE with many subrounded to rounded fine to coarse inclusions of siltstone and quartz. Discontinuities are subhorizontal, very closely to closely spaced, undulating and planar, rough, clean.	11.71	14.69	13.86
11.50-13.00 (92mm)	6.00 (ADDED)	86 61	0.15 0.02	17	(AZCL)					
13.00-14.50 (92mm)	6.00 (ADDED)	94 87	0.26 0.02	71	(AZCL)					
14.50-16.00 (92mm)	6.00 (ADDED)	85 85	0.26 0.02	60	(AZCL)	Extremely weak to very weak reddish brown medium grained SANDSTONE with occasional subrounded to rounded fine to coarse inclusions of siltstone and quartz. Discontinuities are subhorizontal to inclined (20 degrees), very closely to closely spaced, undulating and planar, rough, clean.	Between 12.54m and 12.65m, fine to medium grained. Below 12.96m, occasionally mottled grey, medium to coarse grained. Between 14.50m and 14.60m, assumed zone of core loss.	12.54	13.86	13.86
16.00-17.50 (92mm)	6.00 (ADDED)	85 79	0.19 0.03	69	(AZCL)					
17.50-19.00 (92mm)	6.00 (ADDED)	85 77	0.29 0.02	46	(AZCL)					
19.00-20.50 (92mm)	6.00 (ADDED)	100 72	0.13 0.03	32	(10)	Between 12.54m and 12.65m, fine to medium grained. Below 12.96m, occasionally mottled grey, medium to coarse grained. Between 14.50m and 14.60m, assumed zone of core loss.	Between 16.00m and 16.23m, assumed zone of core loss.	12.54	13.86	13.86

Drilling				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed

Remarks 25.00m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 3.00m, bentonite seal up to 0.20m, concrete up to ground level.
Chiselling: 4.70-6.00m for 6 minutes Slow boring.
Flush: 6.00-25.00m, Air/Mist, 100% return.

Logged by JP

Figure 2 of 3
03/06/2021

geotechnics

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH111
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397853.2 E
382857.0 N

Ground Level 26.40 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length	RQD	SPT N	Description General	Description Detail	Depth	Legend	Level m OD
20.50-22.00 (92mm)	6.00 (ADDED)	73 60	0.31 0.02	34	(NI) (AZCL) (14) (NI) (12) (3)		Between 20.41m and 20.50m, non-intact. Recovered as gravel. Between 20.50m and 20.90m, assumed zone of core loss. Below 20.90m, reddish brown mottled grey. Between 20.90m and 21.12m, non-intact. Recovered as gravel. At 21.65m, many lenticular clasts of reddish brown mudstone (up to 20mm). Between 22.00m and 22.10m, assumed zone of core loss. Between 22.50m and 22.97m, grey bed. Below 22.97m, fine to medium grained. Between 23.12m and 22.30m, subvertical discontinuity, undulating, rough, clean with dark grey and orange staining. Between 23.25m and 23.32m, non-intact. Recovered as gravel.			
22.00-23.50 (92mm)	6.00 (ADDED)	85 82	0.21 0.03	71	(AZCL) (7) (NI)			23.26		3.14
23.50-25.00 (92mm)	6.00 (ADDED)	100 77	0.33 0.02	34	(17) (NI)			23.50		2.90
					(10)	Extremely weak to very weak yellowish grey coarse grained SANDSTONE with many subrounded to rounded fine to medium inclusions of siltstone and quartz. Many lenticular clasts of reddish brown mudstone (up to 25mm). Discontinuities are subvertical, very closely spaced, undulating, rough, clean.		25.00		1.40
						Extremely weak to very weak reddish brown mottled grey medium to coarse grained SANDSTONE with occasional subrounded to rounded fine to coarse inclusions of siltstone and quartz. Occasional lenticular clasts of reddish brown mudstone (up to 20mm). Discontinuities are subhorizontal to inclined (20 degrees), very closely to medium spaced, undulating and stepped, rough, clean.	Between 23.50m and 23.63m, non-intact. Recovered as sandy gravel. Between 23.72m and 23.89m, subvertical discontinuity, undulating, rough, clean.			
						End of Borehole				

Drilling				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JP

Figure 3 of 3
08/06/2021



BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole
Project No

BH112
PN214217

Client RENAKER BUILD LIMITED

National Grid 397881.5 E
Coordinates 382825.8 N

Ground Level 25.67 m OD

Sampling		Properties			Strata		Scale 1:50				
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (F)	Description	Depth	Legend	Level m OD		
0.10- 0.30	B					MADE GROUND: Black tarmacadam.	G.L.		25.67		
0.20	ES						0.10		25.57		
0.20											
0.50- 1.00	B		PID=0.0			MADE GROUND: Grey sandy slightly silty angular to subangular fine to coarse gravel of limestone (Sub base).	0.30		25.37		
0.50	ES										
0.50			PID=0.0								
1.00	ES					MADE GROUND: Very loose dark brown, black occasionally reddish brown very gravelly slightly silty fine to coarse sand with a medium cobble content. Gravel is angular fine to coarse of ash, clinker, slag, sandstone, concrete and brick fragments.					
1.00			PID=0.0								
1.20- 1.65	B										
1.20- 1.65	D	1.20 (DRY)			S3						
						Below 1.90m, dark grey.					
						Below 2.00m, medium dense.					
2.00- 2.45	B										
2.00- 2.45	D	1.50 (DRY)			S19						
2.30	D						2.30		23.37		
						Medium dense brown very gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to coarse of siltstone and sandstone. Low cobble content.					
						Below 3.00m, very dense, slightly silty.					
3.00- 3.45	B										
3.00- 3.43	D	3.00 (DRY)			S50/ 275						
4.00- 4.45	B										
4.00- 4.39	D	4.00 (2.10)			C50/ 240						
4.50	D						4.50		21.17		
						Extremely weak to weak reddish brown fine to coarse grained SANDSTONE with some subrounded clasts (up to 6mm) of quartzite (Recovered as gravelly slightly silty fine to coarse sand).					
5.00- 5.45	B										
5.00- 5.19	D	5.00 (2.90)			S50/60						
6.00- 6.45	B										
6.00- 6.16	D	6.00 (4.10)			S50/45	Between 6.00m and 6.20m, assumed zone of core loss.	6.16		19.51		
Core Run/Depth (Core Dia/Time)		Depth Cased	TCR/SCR / Type	Length Max/Min	ROD %	SPT (F)	Continued by Rotary techniques				
							General				
6.16- 7.20 (109mm)		6.00 (ADDED)	85	0.12	10	(AZCL)	Extremely weak to very weak orangish brown medium to coarse SANDSTONE with rare rounded fine to medium inclusions of quartzite. Discontinuities are subhorizontal, extremely closely to closely spaced, planar and undulating, rough, clean with occasional sand infill (up to 10mm).				
			65	0.01		(18)	Between 6.20m and 6.28m, inclined (45 degrees) discontinuity, planar, rough, clean.				
						(NI)	Between 6.55m and 6.63m, non-intact. Recovered as gravelly sand.				
7.20- 8.70 (109mm)		6.00 (ADDED)	87	0.13	22	(23)	Between 6.64m and 6.68m, inclined (45 degrees) discontinuity, planar, rough, clean.				
			75	0.03		(AZCL)	Between 7.20m and 7.40m, assumed zone of core loss.				
						(13)	Below 7.20m, discontinuities are very closely to closely spaced.				
8.70-10.20 (109mm)		6.00 (ADDED)	85	0.19	40	(AZCL)	Extremely weak dark reddish brown occasionally mottled grey medium to coarse grained SANDSTONE with rare subrounded fine to medium inclusions of siltstone and quartzite.				
			79	0.02		(12)	Between 8.70m and 8.93m, assumed zone of core loss.				
Boring						Progress			Groundwater		
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	
1.20	0.40	Inspection Pit	LG/LH	G.L.			05/05/21	08:00			
6.00	0.20	Cable Percussion	LG/LH	6.16	6.00	4.10	05/05/21	18:00			
49.90	0.11	Rotary Core	FB/LP	6.16	6.00	ADDED	14/05/21	08:00			
				10.20	6.00	ADDED	14/05/21	18:00			
				10.20	6.00	ADDED	17/05/21	08:00			
				15.70	6.00	ADDED	15/05/21	18:00			
Remarks						Inspection pit hand excavated to 1.20m depth and no services were found.				Logged by JP	
Symbols and abbreviations are explained on the accompanying key sheet.						ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.				Figure 1 of 5	
All dimensions are in metres.						PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.				08/06/2021	
						Water was added to assist boring at 3.00m.					
						** Drillers description.					
						In situ Packer Permeability Tests carried out between 8.00m and 11.00m and between 14.00m and 17.00m.					
						Logged in accordance with BS5930:2015 A1:2020					

Logged by JP

Figure 1 of 5
08/06/2021

geotechnics

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH112
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397881.5 E
382825.8 N

Ground Level 25.67 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD				
10.20-11.20 (109mm)	6.00 (ADDED)	100 95	0.28 0.03	44	(11)	Discontinuities are subhorizontal, very closely to medium spaced, undulating and planar, rough, clean with occasional clay and sand infill (up to 20mm).	Below 10.20m, reddish brown occasionally mottled grey.							
11.20-12.70 (109mm)	6.00 (ADDED)	100 83	0.15 0.01	23	(7) (30) (11) (>30)		Between 11.35m and 11.65m, discontinuities are extremely to very closely spaced.							
12.70-14.20 (109mm)	6.00 (ADDED)	100 91	0.26 0.02	70	(9)		Between 12.25m and 12.56m, discontinuities are extremely to very closely spaced.							
14.20-15.70 (109mm)	6.00 (ADDED)	73 40	0.07 0.01	0	(AZCL) (>30)		Between 14.20m and 14.60m, assumed zone of core loss. Between 14.60m and 15.70m, discontinuities are extremely to closely spaced.							
15.70-17.20 (109mm)	6.00 (ADDED)	0 0	0.00 0.00	0	(AZCL)	Extremely weak to very weak grey mottled reddish brown medium to coarse grained SANDSTONE with occasional subrounded fine to medium inclusions of siltstone and quartzite. Discontinuities are subhorizontal, closely spaced, undulating, rough, clean.	Between 15.70m and 17.20m, assumed zone of core loss.							
17.20-18.70 (109mm)	6.00 (ADDED)	33 29	0.16 0.05	18	(AZCL) (NI) (9)		Between 17.20m and 18.20m, assumed zone of core loss.							
18.70-20.20 (109mm)	6.00 (ADDED)	36 22	0.15 0.01	10	(AZCL) (NI) (12)		Between 18.20m and 18.26m, non-intact. Recovered as gravel. Below 18.55m, yellowish grey. Between 18.70m and 19.66m, assumed zone of core loss.	18.20		7.47				
						Extremely weak to very		19.66		6.01				
Drilling				Progress				Groundwater						
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				15.70	6.00	ADDED	18/05/21	08:00						
				21.70	6.00	ADDED	18/05/21	18:00						
				21.70	6.00	ADDED	19/05/21	08:00						
				26.20	6.00	ADDED	19/05/21	18:00						
				26.20	6.00	ADDED	24/05/21	08:00						
				38.20	6.00	ADDED	20/05/21	18:00						
Remarks				High Pressure Dilatometer (HPD) Tests carried out by In Situ Ground Investigation Limited at 3.00m, 9.30m, 19.50m and 24.50m. A 50mm standpipe was installed to 20.00m with a geowrapped slotted section from 3.00m to 20.00m with flush lockable protective cover. Backfill details from base of hole: bentonite seal up to 20.00m, gravel filter up to 3.00m, bentonite seal up to 0.20m, concrete up to ground level. Chiselling: 3.50-3.70m for 60 minutes and 4.10-4.20m for 25 minutes and 4.50-5.00m for 60 minutes and 5.00-6.00m for 60 minutes. Logged in accordance with BS5930:2015 A1:2020										
Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres.				Logged by JP Figure 2 of 5 08/06/2021 geotechnics										

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	ROD %	SPT N (FI)	Description General	Description Detail	Depth	Legend	Level m OD				
20.20-21.70 (10.9mm)	6.00 (ADDED)	45 35	0.17 0.04	11	(16)	weak reddish brown occasionally mottled grey medium grained SANDSTONE with occasional subangular to rounded medium to coarse inclusions of siltstone and quartzite. Occasional thick laminae of very weak reddish brown mudstone (up to 20mm).	Between 19.66m and 19.78m, non-intact. Recovered as gravel.	21.70		3.97				
					(AZCL)		Between 20.47m and 21.28m, assumed zone of core loss.							
					(NI)		Between 21.28m and 21.38m, non-intact. Recovered as gravel.							
					(9)									
21.70-23.20 (10.9mm)	6.00 (ADDED)	66 9	0.07 0.01	0	(NI)	Extremely weak to very weak orangish brown fine to medium grained SANDSTONE with rare subrounded fine to coarse inclusions of quartzite. Discontinuities are subhorizontal, extremely closely spaced, planar, rough, clean with occasional sand infill (up to 5mm).	Between 21.70m and 22.25m, assumed zone of core loss.	24.70		0.97				
21.70-24.70 (10.9mm)	6.00 (ADDED)	53 42	0.16 0.01	24	(25)		Between 21.70m and 22.10m, non-intact. Recovered as sandy gravel.							
					(NI)		Between 22.65m and 23.20m, non-intact. Recovered as sandy gravel.							
					(AZCL)		Between 23.20m and 23.90m, assumed zone of core loss.							
					(19)		Between 23.20m and 24.70m, discontinuities are extremely closely to closely spaced.							
					(8)									
24.70-26.20 (10.9mm)	6.00 (ADDED)	71 57	0.14 0.02	26	(AZCL)	Very weak to weak thinly bedded greyish brown medium to coarse grained SANDSTONE with occasional subangular fine to medium inclusions of mudstone. Discontinuities are horizontal to subhorizontal, closely spaced, smooth, undulating and clean.	Between 24.70m and 25.15m, assumed zone of core loss.	26.20		-0.53				
26.20-27.70 (10.9mm)	6.00 (ADDED)	85 46	0.10 0.02	6	(AZCL)		Between 25.25m and 25.33m, inclined (40 degrees) discontinuity, smooth, planar, with rare sand infill (up to 5mm).							
					(22)	Between 26.20m and 26.45m, assumed zone of core loss.								
					(NI)	Between 26.45m and 26.50m, band of very weak reddish brown mudstone.								
					(30)	Between 27.25m and 27.35m, non-intact. Recovered as sandy gravel.								
27.70-29.20 (10.9mm)	6.00 (ADDED)	82 39	0.19 0.02	12	(AZCL)	Extremely weak to weak thickly laminated to very thinly bedded orangish brown fine to medium grained SANDSTONE with rare inclusions of subrounded fine to medium quartzite. Cross bedded. Discontinuities are horizontal to subhorizontal, very closely spaced, smooth, undulating with some sand infill (up to 5mm).	Between 27.70m and 27.95m, assumed zone of core loss.							
					(10)		Between 28.15m and 28.25m, non-intact. Recovered as sandy gravel.							
					(NI)		Between 28.50m and 28.60m, non-intact. Recovered as sandy gravel.							
					(>30)		Between 28.75m and 28.80m, non-intact. Recovered as sandy gravel.							
					(NI)		Between 29.20m and 29.95m, non-intact. Recovered as sandy gravel.							
29.20-30.70 (10.9mm)	6.00 (ADDED)	47 9	0.06 0.02	0	(NI)									
						(20)								
						(AZCL)								
Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				38.20	6.00	ADDED	25/05/21	08:00						
				49.90	6.00	ADDED	25/05/21	18:00						
				49.90	6.00	ADDED	25/05/21	08:00						
				49.90	6.00	ADDED	26/05/21	18:00						
Remarks  Flush: 6.16-7.20m, Air/Mist, 100% returns; 7.20-10.20m, Air/Mist, 0% returns; 10.20-15.70m, Air/Mist, 100% returns; 15.70-21.70m, Water, 50% returns; 21.70-49.90m, Air/Mist, 100% return.														
Symbols and abbreviations are explained on the accompanying key sheet.														
All dimensions are in metres.														
Logged in accordance with BS5930:2015 A1:2020														
Figure 3 of 5 03/05/2021														
														

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH112
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397881.5 E
382825.8 N

Ground Level 25.67 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD
					(NI)		Between 29.95m and 30.70m, extremely weak to very weak, thickly laminated.			
					(13)		Between 29.95m and 30.40m, non-intact. Recovered as sandy gravel.			
30.70-32.20 (109mm)	6.00 (ADDED)	89 71	0.19 0.02	39	(AZCL)		Between 30.35m and 30.55m, dark red staining.			
					(23)		Between 30.70m and 30.90m, assumed zone of core loss.			
					(7)		Between 30.80m and 30.95m, band of weak dark red mudstone.			
32.20-33.70 (109mm)	6.00 (ADDED)	100 56	0.31 0.02	39	(AZCL)		Between 30.90m and 32.20m, discontinuities are subhorizontal, closely spaced, planar, smooth and clean.			
					(9)		Between 31.32m and 31.37m, inclined (30 degrees) discontinuity, planar, smooth with some sand infill (up to 4mm).			
					(24)		Between 32.30m and 32.30m, assumed zone of core loss.			
33.70-35.20 (109mm)	6.00 (ADDED)	100 56	0.31 0.02	39	(9)		Between 32.30m and 33.70m, very weak to weak.	33.70		-8.03
					(NI)		Between 32.30m and 33.00m, discontinuities are medium spaced.			
					(7)		Between 32.50m and 32.55m, band of weak dark red mudstone.	34.75		-9.08
35.20-36.70 (109mm)	6.00 (ADDED)	89 50	0.18 0.02	12	(AZCL)	Weak reddish brown fine to medium grained SANDSTONE. Discontinuities are horizontal to sub horizontal, closely spaced, planar, smooth and clean with rare sand infill (up to 5mm).	Between 34.30m and 34.70m, non-intact. Recovered as sandy gravel.			
					(>30)					
					(12)	Weak grey fine grained SANDSTONE. Discontinuities are horizontal, closely to medium spaced, planar, smooth, clean.	Between 35.20m and 35.40m, assumed zone of core loss.			
36.70-38.20 (109mm)	6.00 (ADDED)	73 41	0.12 0.03	8	(AZCL)		Between 35.40m and 36.70m, discontinuities are horizontal, closely spaced, undulating, rough, clean.	36.70		-11.03
					(>30)		Between 35.90m and 36.00m, band of weak dark red mudstone.			
					(NI)		Between 36.10m and 36.50m, inclined (50 degrees) discontinuity, planar, smooth, clean.			
					(16)					
38.20-41.20 (109mm)	6.00 (ADDED)	88 78	0.43 0.01	68	(AZCL)	Very weak thinly bedded grey medium to coarse grained SANDSTONE. Discontinuities are horizontal, very closely to closely spaced, planar, smooth and clean.	Between 36.70m and 37.10m, assumed zone of core loss.	38.20		-12.53
					(6)		Between 37.15m and 37.90m, non-intact. Recovered as sandy gravel.			
					(NI)	Extremely weak to very weak grey locally reddish brown fine to coarse grained SANDSTONE with occasional lenticular clasts (up to 50mm) of				

Drilling				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JP

Figure 4 of 5
08/06/2021



BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH112
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397881.5 E
382825.8 N

Ground Level 25.67 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length	ROD	SPT N	Description General	Description Detail	Depth	Legend	Level m OD
					(5)	reddish brown mudstone. Discontinuities are subhorizontal, very closely to medium spaced, undulating and planar, rough, clean and fresh.				
41.20-43.90 (109mm)	6.00 (ADDED)	70 30	0.24 0.03	13	(AZCL)					
					(11)					
					(NI)	Extremely weak to very weak reddish brown mottled grey fine to medium grained SANDSTONE. Discontinuities are subhorizontal, very closely to medium spaced, planar and undulating, rough with occasional clay smear intersecting subvertical, planar, undulating and stepped, rough, clean, tight to closed discontinuities.	Between 42.19m and 42.27m, non-intact. Recovered as clayey gravel of sandstone and reddish brown mudstone.	42.09		-16.42
					(9)					
					(17)					
					(NI)		Between 43.16m and 43.50m, non-intact. Recovered as clayey gravel of sandstone and reddish brown mudstone.			
					(14)		Between 43.65m and 43.90m, non-intact. Recovered as sandy gravel of sandstone.			
43.90-46.90 (109mm)	6.00 (ADDED)	93 67	0.43 0.04	45	(AZCL)		Between 44.10m and 44.70m, non-intact. Recovered as gravel of sandstone. Below 44.70m, becoming fine to coarse grained.			
					(NI)					
					(7)		Between 45.40m and 46.35m, Discontinuities are very closely to medium spaced, inclined (45-60 degrees), planar and undulating, clean with occasional clay smear.			
46.90-49.90 (109mm)	6.00 (ADDED)	94 67	0.44 0.03	41	(AZCL)		Below 46.75m, occasional clasts of grey siltstone, quartzite and reddish brown mudstone.			
					(NI)		Between 47.08m and 47.32m, non-intact. Recovered as gravel of sandstone.			
					(10)		Between 47.82m and 47.86m, inclined (30 degrees), undulating, rough, clean discontinuity.			
						End of Borehole		49.90		-24.23

Drilling				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JP

Figure 5 of 5
08/06/2021



BOREHOLE RECORD - Dynamic Sampler

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No WS105
PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397815.2 E
382770.2 N

Ground Level 25.19 m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (In Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD
0.20	ES		PID=0.0			MADE GROUND: Black tarmacadam.	G.L.		25.19
0.20							0.10		25.09
0.50	ES		PID=0.0			MADE GROUND: Light grey sandy silty angular to subangular fine to coarse gravel of limestone (Sub base).	0.30		24.89
0.50									
1.00	ES		PID=0.0			MADE GROUND: Dark brown and black occasionally reddish brown fine to medium sand and angular to subangular fine to medium gravel of ash and brick fragments. Low cobble content.	0.80		24.39
1.00									
1.20- 1.65	D	1.20 (DRY)			S5	MADE GROUND: Loose brown occasionally black fine to medium sand and angular to subangular fine to coarse gravel of ash and clinker.	1.50		23.69
1.60	D								
1.80	ES		PID=0.0			MADE GROUND: Light brown occasionally black and reddish brown fine to medium sand and angular to subangular fine to coarse gravel of ash and brick fragments.	2.00		23.19
1.80									
2.00- 2.45	D	2.00 (DRY)			S2	Very loose light brown fine to medium SAND and subangular fine to coarse GRAVEL of sandstone. Between 2.00m and 2.15m, SPT gear sank under own weight.	3.00		22.19
2.50	D								
2.80	ES		PID=0.0			Very dense brown fine to medium SAND and subangular fine to coarse GRAVEL of sandstone (Possible weathered sandstone).	3.39		21.80
2.80									
3.00- 3.39	D	2.00 (DRY)			S50/ 235	End of Borehole			

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	DS/KR	G.L.			29/04/21	08:00						None encountered.
3.00	0.10	Dynamic Sampler	DS/KR	3.39	2.00	DRY	29/04/21	10:00						

Remarks Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.
 PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.
 Dynamic Sample Borehole WS105 terminated at 3.39m depth within possible weathered sandstone.
 A 50mm standpipe was installed to 3.00m with a geowrapped slotted section from 0.90m to 3.00m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 0.90m, bentonite seal up to 0.20m, concrete up to ground level.
 Logged in accordance with BS5930:2015 A1:2020

Logged by TM
 Figure 1 of 1
 08/06/2021

geotechnics

Sampling			Properties		Strata		Scale 1:50			
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD	
0.30	D					MADE GROUND: Black tarmacadam.	G.L.		26.21	
0.30	ES					MADE GROUND: Grey sandy slightly silty angular to subangular fine to coarse gravel of limestone (Sub base).	0.10		26.11	
0.30			PID=0.1				0.15		26.06	
0.50	D					MADE GROUND: Brown sandstone cobble setts (Old road surface).	0.25		25.96	
0.50	ES						0.50		25.71	
0.65- 1.20	B		PID=0.3				0.65		25.56	
0.75	D					MADE GROUND: Dark grey occasionally black and reddish brown very gravelly fine to coarse sand. Gravel is angular fine to coarse of ash, clinker, sandstone, coal, concrete and brick fragments. Slight hydrocarbon odour.				
0.75			PID=0.1							
1.00	ES									
1.20- 1.65		1.20			S15		1.55		24.66	
1.55- 1.75	D	(DRY)	PID=0.1				1.80		24.41	
1.55- 1.75						MADE GROUND: Dark brown occasionally black and reddish brown very gravelly fine to coarse sand with a medium cobble content. Gravel is angular fine to coarse of ash, clinker, sandstone and brick fragments.				
1.80- 3.35	B				S4					
1.85- 2.00	D					MADE GROUND: Brown occasionally black and reddish brown very gravelly fine to coarse sand with a medium cobble content. Gravel is angular to subangular fine to coarse of ash, clinker, sandstone and brick fragments. Between 1.20m and 1.55m, medium dense.				
2.00- 2.45	D	2.00 (DRY)								
						MADE GROUND: Dark grey and light brown very sandy angular to subangular fine to coarse gravel of clinker and sandstone.	3.35		22.86	
3.00- 3.45	D				S15					
3.00- 3.45		2.00 (DRY)				Very soft to soft reddish brown mottled brown slightly gravelly very sandy CLAY. Gravel is angular fine to medium including coal. Between 2.00m and 2.15m, SPT gear sank under own weight. Below 2.15m, firm to stiff.				
3.35- 3.90	B					Reddish brown silty fine to coarse SAND.				
3.40- 3.55	D									
						Very dense reddish brown very gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of siltstone and sandstone.	3.90		22.31	
4.00- 4.45	D	2.00 (DRY)			S50					
						End of Borehole	4.45		21.76	

BOREHOLE RECORD - Dynamic Sampler

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No WS107
PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397865.9 E
382804.8 N

Ground Level 25.54 m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (in Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD
0.20- 0.40	B		PID=0.0			MADE GROUND: Black tarmacadam.	G.L.		25.54
0.20							0.10		25.44
0.30	ES					MADE GROUND: Grey sandy slightly silty angular to subangular fine to coarse gravel of limestone (Sub base).	0.20		25.34
0.40- 1.20	B						0.40		25.14
0.50	ES		PID=0.0			MADE GROUND: Brown sandstone cobble setts (Old road surface).			
0.50									
1.00	ES		PID=0.0						
1.00									
1.20- 1.65	D	1.20 (DRY)			S8	MADE GROUND: Brown occasionally black and reddish brown silty fine to medium sand of ash with many brick fragments.	1.35		24.19
1.40- 1.60	D								
1.70	ES		PID=0.0			MADE GROUND: Loose reddish brown slightly gravelly silty fine to coarse sand. Gravel is angular fine to coarse of coal and brick fragments.	1.75		23.79
1.70					S6				
2.00- 2.45	D	2.00 (DRY)				Loose reddish brown fine to coarse SAND with some pockets (up to 50mm) of silt.			
2.80- 3.00	D				S19	Below 3.00m, medium dense.			
3.00- 3.45	D	2.00 (DRY)							
3.90- 4.00	D				S50	Very dense reddish brown very gravelly fine to coarse SAND. Gravel is subrounded to rounded fine to coarse of sandstone and quartz.	3.80		21.74
4.00- 4.45	D	2.00 (3.70)							
						End of Borehole	4.45		21.09

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	JR/DS	G.L.			30/04/21	08:00	3.70					Slow inflow. No rise.
4.00	0.10	Dynamic Sampler	JR/DS	1.20		DRY	30/04/21	10:00						
				1.20		DRY	05/05/21	08:00						
				4.45	2.00	DRY	05/05/21	10:00						

Remarks Inspection pit hand excavated to 1.20m depth and no services were found.
ABSES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.
 PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.
 A 50mm standpipe was installed to 1.80m with a geowrapped slotted section from 0.50m to 1.80m with flush lockable protective cover. Backfill details from base of hole: bentonite seal up to 1.80m, gravel filter up to 0.50m, bentonite seal up to 0.20m, concrete up to ground level.
 All dimensions are in metres.
 Logged in accordance with BS5930:2015 A1:2020

Logged by JG/JF
 Figure 1 of 1
 08/06/2021

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No WS108
PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397859.1 E
382839.6 N

Ground Level 26.03 m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (In Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD
0.25- 0.85	B		PID=0.0			MADE GROUND: Black tarmacadam.	G.L.		26.03
0.20							0.10		25.93
0.30	ES					MADE GROUND: Grey sandy slightly silty angular to subangular fine to coarse gravel of limestone (Sub base).	0.25		25.78
0.50	ES		PID=0.0						
0.50									
0.85- 1.20	B					MADE GROUND: Brown occasionally black and reddish brown sandy angular to subangular fine to coarse gravel of clinker and brick fragments.	0.85		25.18
1.00	ES		PID=0.0						
1.00									
1.20- 1.65	D	1.20 (DRY)			S8	MADE GROUND: Yellowish brown occasionally black and reddish brown slightly gravelly fine to medium sand. Gravel is angular to subangular fine to coarse of clinker and brick fragments.	1.20		24.83
1.40- 1.55	D								
1.40	ES		PID=0.0				1.60		24.43
1.40									
1.65- 1.80	D						1.85		24.18
1.85- 3.40	B					MADE GROUND: Soft to firm reddish brown mottled brown slightly gravelly sandy clay. Gravel is angular to subrounded fine of siltstone, sandstone, coal and brick fragments.			
1.85- 2.00	D								
2.00- 2.45	D	2.00 (DRY)			S9	Soft reddish brown slightly sandy CLAY.			
3.00- 3.45	D	2.00 (3.00)			S31	Loose orangish brown fine to medium SAND with some pockets (up to 50mm) of silt.	3.00		23.03
3.40- 5.00	B					Dense becoming very dense reddish brown very gravelly fine to coarse SAND with occasional pockets (up to 50mm) of silt. Gravel is subrounded to rounded fine to coarse of mudstone, siltstone, sandstone and coal.			
3.80- 4.00	D					At 3.35m, orange.			
4.00- 4.45	D	2.00 (3.00)			S33				
5.00- 5.45	D	2.00 (3.00)			S50				
						End of Borehole	5.45		20.58

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	JR/DS	G.L.			30/04/21	15:00	3.00					Slow inflow. No rise.
5.00	0.10	Dynamic Sampler	JR/DS	1.20		DRY	30/04/21	14:00						
				1.20		DRY	04/05/21	10:00						
				5.45	2.00	DRY	04/05/21	12:00						

Remarks Inspection pit hand excavated to 1.20m depth and no services were found.
 ABS sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.
 PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.
 Backfill details from base of hole: bentonite seal up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JG/JF
 Figure 1 of 1
 08/06/2021

geotechnics

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH101
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid 397711.3 E
Coordinates 382658.9 N

Ground Level 25.20 m OD

Sampling		Properties			Strata		Scale 1:50								
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Description	Depth	Legend	Level m OD						
0.00- 0.50	B					MADE GROUND: Black tarmacadam.	G.L.		25.20						
0.20	ES						0.10		25.10						
0.20			PID=0.0			MADE GROUND: Black mottled reddish brown fine to medium sand and angular to subangular fine to coarse gravel of ash and brick fragments. Low cobble and boulder content.									
0.50- 1.00	B														
0.50	ES		PID=0.0												
0.50															
1.00- 1.50	B														
1.00	ES		PID=0.0												
1.00															
1.20- 1.50	D	(DRY)			S50/145	At 1.50m, obstruction - probable cobble/boulder.									
2.00- 2.40	B					MADE GROUND: Grey concrete.	2.00		23.20						
2.50- 3.00	B					Very soft light brown very sandy CLAY.	2.40		22.80						
2.50	D														
3.00- 3.45	B														
3.00- 3.45	D	3.00 (DRY)			S1										
4.00- 4.50	B					Between 4.00m and 4.45m, Cutting shoe broke off whilst attempting to take UT100 sample.									
4.00- 4.45	UTF	4.00 (DRY)													
4.20	D					Extremely weak red fine to medium grained SANDSTONE (Recovered as sandy gravel).	4.20		21.00						
5.00- 5.45	B														
5.00- 5.15	D	5.00 (DRY)			S50/40	Below 5.00m, extremely weak to weak.									
6.00- 6.12	D	6.00 (DRY)			S50/30		6.12		19.08						
Core Run/Depth-Depth (Core Dia/Time)		Cased	TCR/SCR / Type	Length Max/Min	ROD %	SPT (FI)	Continued by Rotary techniques General		Detail						
6.12- 7.20 (92mm)	6.00 (ADDED)	95	95	0.17 0.03	50	(10)	Extremely weak to very weak thinly to widely bedded reddish brown medium to coarse grained SANDSTONE with occasional subrounded to rounded fine to coarse clasts (up to 60mm) of mudstone and quartzite.		Between 6.12m and 6.23m, yellowish grey.						
7.20- 8.70 (92mm)	6.00 (ADDED)	93	84	0.17 0.03	23	(AZCL)	Discontinuities are subhorizontal to inclined (20 degrees), very closely to closely spaced, planar and undulating, rough, clean with occasional medium to coarse sand infill (up to 15mm) and clay infill (up to 4mm).		Between 7.20m and 7.30m, assumed zone of core loss. Between 7.50m and 7.69m, yellowish grey.						
8.70-10.20 (92mm)	6.00 (ADDED)	96	95	0.20 0.06	62	(AZCL)			Between 8.70m and 8.75m, assumed zone of core loss.						
						(15)									
Boring				Progress				Groundwater							
Depth	Dia	Technique		Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit		LG/LH	G.L.			28/04/21	17:00						None encountered.
6.00	0.20	Cable Percussion		LG/LH	0.30		DRY	28/04/21	18:00						
25.20	0.09	Rotary Core		JB/CB	0.30		DRY	29/04/21	08:00						
					3.45	3.00	DRY	29/04/21	18:00						
					3.45	3.00	3.10	30/04/21	08:00						
					6.12	6.00	3.00	30/04/21	18:00						
Remarks															
Inspection pit hand excavated to 1.20m depth and no services were found.															
ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.															
PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.															
Between 4.00m and 4.45m, Cutting shoe broke off whilst attempting to take UT100 sample.															
Between 4.00m and 5.00m, Chiselling on broken cutting shoe.															
A 50mm standpipe was installed to 25.20m with a geowrapped slotted section from 2.50m to 25.20m with flush lockable protective cover. Backfill details from base of hole: gravel															
All dimensions are in metres.															
Logged in accordance with BS5930:2015 A1:2020															
Logged by TM															
Figure 1 of 3															
08/06/2021															
geotechnics															

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH101
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397711.3 E
382658.9 N

Ground Level 25.20 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50					
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD			
10.20-11.70 (92mm)	6.00 (ADDED)	100 86	0.28 0.02	71	(4)		Below 10.88m, discontinuities are very closely to medium spaced. Between 11.70m and 11.77m, assumed zone of core loss. Between 12.03m and 12.77m, fine to medium grained. Below 12.03m, discontinuities are closely to medium spaced. Between 13.20m and 13.29m, assumed zone of core loss. Between 14.70m and 14.76m, assumed zone of core loss. Below 15.10m, discontinuities are closely to widely spaced. Below 16.20m, closely to widely spaced, very thin to thin yellowish grey and greenish grey bands. Below 17.70m, discontinuities are very closely to medium spaced. Between 17.98m and 18.24m, discontinuities are inclined (75 degrees), undulating, rough, clean. At 19.40m, thin band (40mm) of very weak reddish brown mudstone. Between 20.05m and 20.52m, grey.						
11.70-13.20 (92mm)	6.00 (ADDED)	95 84	0.37 0.02	70							(AZCL)	(16)	(AZCL)
13.20-14.70 (92mm)	6.00 (ADDED)	94 90	0.44 0.02	84							(4)		
14.70-16.20 (92mm)	6.00 (ADDED)	96 96	0.60 0.07	83							(AZCL)	(6)	
16.20-17.70 (92mm)	6.00 (ADDED)	100 100	0.61 0.12	100	(3)								
17.70-19.20 (92mm)	6.00 (ADDED)	100 100	0.34 0.08	76	(6)								
19.20-20.70 (92mm)	6.00 (ADDED)	100 86	0.29 0.02	73									

Drilling				Progress				Groundwater						
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				6.12	6.00	2.40	04/05/21	08:00						
				13.20	6.00	3.10	01/05/21	18:00						
				13.20	6.00	3.10	05/05/21	08:00						
				25.20	6.00	3.10	05/05/21	18:00						

Remarks Filter up to 2.50m, bentonite seal up to 0.20m, concrete up to ground level.
 100 minutes.
 Chiselling: 2.00-2.40m for 100 minutes and 4.00-5.00m for 105 minutes and 5.00-6.00m for 60 minutes.
 Flush: 6.12-25.20m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by TM

Figure 2 of 3
03/06/2021

geotechnics

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH101
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397711.3 E
382658.9 N

Ground Level 25.20 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD
20.70-22.20 (92mm)	6.00 (ADDED)	100 89	0.44 0.02	89	(4)					
22.20-23.70 (92mm)	6.00 (ADDED)	100 88	0.55 0.04	84						
23.70-25.20 (92mm)	6.00 (ADDED)	76 76	0.38 0.06	50	(AZCL)	End of Borehole	Between 23.70m and 24.05m, assumed zone of core loss.			0.00
					(6)		Between 24.90m and 24.98m, medium grained.			
								25.20		

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by TM

Figure 3 of 3
08/06/2021



BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH102
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid 397697.2 E
Coordinates 382722.1 N

Ground Level 25.99 m OD

Sampling		Properties		Strata		Scale 1:50			
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Description	Depth	Legend	Level m OD
0.00- 0.20	B					MADE GROUND: Black tarmacadam.	G.L.		25.99
0.15	D						0.07		25.92
0.15	ES						0.20		25.79
0.15			PID=0.0			MADE GROUND: Dark brown mottled reddish brown fine to medium sand and angular to subangular fine to coarse gravel of brick fragments.	0.45		25.54
0.45- 0.95	B						0.55		25.44
0.50	D					MADE GROUND: Grey concrete.			
0.50	ES						0.95		25.04
0.50			PID=0.0			MADE GROUND: Dark brown mottled reddish brown fine to medium sand and angular to subangular fine to coarse gravel of brick fragments.			
0.95- 1.20	B								
1.00	D								
1.00	ES								
1.00			PID=0.0			MADE GROUND: Dark brown, black occasionally reddish brown fine to medium sand and angular to subangular fine to coarse gravel of ash and brick fragments.			
1.20- 1.65	B				S3				
1.20- 1.65	D	(DRY)							
2.00- 2.45	B								
2.00- 2.45	D	2.00			S1	Very loose orangish brown gravelly slightly clayey fine to medium sand. Gravel is subangular fine of sandstone.			
2.00	ES	(DRY)							
2.00			PID=0.0						
3.00- 3.45	B								
3.00- 3.45	D	3.00 (DRY)			S13	Below 3.00m, medium dense.			
3.50	D						3.40		22.59
4.00- 4.45	B								
4.00- 4.45	D	4.00 (3.50)			C30	Medium dense to dense brown sandy angular to subangular fine to coarse GRAVEL of sandstone. Medium cobble content.			
5.00- 5.45	B								
5.00- 5.34	D	5.00 (4.00)			C50/190	Between 5.00m and 5.45m, obstruction - probable cobble.			
6.00- 6.45	B						6.00		19.99
6.00- 6.28	D	6.00 (4.50)			C50/125	Very dense orangish brown fine to medium SAND and subrounded fine to medium GRAVEL of sandstone (Weathered sandstone).			
7.00	D						7.00		18.99
7.50- 7.95	B								
7.50- 7.57	D	7.50 (5.00)			S50/30	Very dense reddish brown gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone (Weathered sandstone).			
8.50	D								
9.00- 9.45	B								
9.00- 9.10	D	9.00 (5.50)			S50/40				
9.80	D						9.80		16.19
						Extremely weak red fine to medium grained SANDSTONE (Recovered as sandy gravel).			

Boring				Progress				Groundwater			
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to
1.20	0.40	Inspection Pit	LM/MP	G.L.			28/04/21	08:00	24.20	10.40	3.40
10.40	0.20	Cable Percussion	LM/MP	8.55	8.55	5.00	28/04/21	18:00			
35.40	0.09	Rotary Core	JB/CB	8.55	8.55	3.35	29/04/21	08:00	30.10	10.40	3.90
				10.40	10.40	5.50	29/04/21	18:00			
				10.40	10.40	3.40	07/05/21	08:00			
				18.90	10.40	3.20	07/05/21	18:00			

Remarks  Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.
PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.
Water was added to assist boring between 3.00m and 5.00m.
A 50mm standpipe was installed to 20.00m with a geowrapped slotted section from 1.50m to 20.00m with flush lockable protective cover. Backfill details from base of hole: bentonite seal up to 20.00m, gravel filter up to 1.50m, bentonite seal up to 0.30m, concrete up to 0.30m.
Logged in accordance with BS5930:2015 A1:2020

Logged by TM
Figure 1 of 4
08/06/2021



Symbols and abbreviations are explained on the accompanying key sheet.
All dimensions are in metres.

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH102
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid 397697.2 E
Coordinates 382722.1 N

Ground Level 25.99 m OD

Sampling		Properties			Strata		Scale 1:50							
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (FI)	Description	Depth	Legend	Level m OD					
10.40	D				(24)		10.40		15.59					
Core Run/Depth-Depth (Core Dia/Time)-Cased		TCR/SCR / Type	Length Max/Min	ROD %	SPT (FI)	Continued by Rotary techniques General	Detail							
10.40-11.40 (92mm)	10.40 (ADDED)	100 81	0.24 0.04	70	(7)	Extremely weak to very weak thinly to widely bedded reddish brown occasionally mottled yellowish grey medium grained SANDSTONE with closely to medium spaced yellowish grey and bluish grey beds. Occasional clasts (up to 20mm) of reddish brown mudstone. Discontinuities are subhorizontal to inclined (20 degrees), very closely to medium spaced, undulating and planar, rough, clean with occasional orange staining.	Between 11.40m and 11.50m, assumed zone of core loss.							
11.40-12.90 (92mm)	10.40 (ADDED)	93 80	0.36 0.03	74	(AZCL) (5)		Between 12.60m and 12.78m, subvertical discontinuity, planar, rough, clean.							
12.90-14.40 (92mm)	10.40 (ADDED)	92 84	0.32 0.07	73	(AZCL) (7)		Between 12.90m and 13.01m, assumed zone of core loss.							
14.40-15.90 (92mm)	10.40 (ADDED)	84 72	0.28 0.01	61	(AZCL) (7)		Between 14.40m and 14.64m, assumed zone of core loss.							
15.90-17.40 (92mm)	10.40 (ADDED)	92 75	0.21 0.04	62	(AZCL) (7)		Below 15.40m, occasional subrounded clasts (2mm to 20mm) of mudstone and quartzite. Between 15.90m and 16.02m, assumed zone of core loss.							
17.40-18.90 (92mm)	10.40 (ADDED)	89 58	0.33 0.02	38	(AZCL) (15) (NI) (5)		Between 16.76m and 16.83m, subvertical discontinuity, undulating, rough, clean. Between 17.40m and 17.56m, assumed zone of core loss.							
18.90-20.40 (92mm)	10.40 (ADDED)	84 67	0.25 0.02	65	(AZCL) (12)		Between 18.30m and 18.49m, non-intact. Recovered as sandy gravel.							
							Between 18.90m and 19.13m, assumed zone of core loss.							
Boring					Progress			Groundwater						
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose (n)	in Mins	Depth Sealed	Remarks on Groundwater
				18.90	10.40	3.40	10/05/21	08:00						
				32.40	10.40	3.90	10/05/21	18:00						
				32.40	10.40	3.70	11/05/21	08:00						
				35.40	10.40	3.90	11/05/21	18:00						
Remarks ground level. Chiselling: 5.00-8.55m for 180 minutes Slow boring, and 8.55-9.00m for 90 minutes Slow boring, and 9.80-10.40m for 120 minutes. Flush: 10.40-35.40m, Air/Mist, 100% return. Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres. Logged in accordance with BS5930:2015 A1:2020														
										Logged by TM Figure 2 of 4 03/06/2021 geotechnics				

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH102
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397697.2 E
382722.1 N

Ground Level 25.99 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD				
					(5)									
20.40-21.90 (92mm)	10.40 (ADDED)	92 77	0.32 0.06	62	(AZCL) (NI) (6)		Between 20.40m and 20.52m, assumed zone of core loss. Between 20.52m and 20.60m, non-intact. Recovered as gravel. Between 21.12m and 21.15m, bluish grey bed.							
21.90-23.40 (92mm)	10.40 (ADDED)	100 92	0.30 0.03	70	(6)		Between 21.90m and 22.30m, subvertical discontinuity, undulating, rough, clean. Below 22.10m, medium to coarse grained.							
23.40-24.90 (92mm)	10.40 (ADDED)	100 78	0.22 0.06	52	(10) (NI) (5)		Below 23.40m, some clasts (up to 60mm) of mudstone, sandstone and quartzite. At 23.50m, thick laminae of very weak reddish brown mudstone (up to 25mm). Between 23.90m and 24.12m, non-intact. Recovered as gravel.							
24.90-26.40 (92mm)	10.40 (ADDED)	100 82	0.38 0.04	57	(18) (22) (5)		Between 24.90m and 25.24m, discontinuities are subvertical to inclined (20 degrees), very closely spaced, undulating.							
26.40-27.90 (92mm)	10.40 (ADDED)	100 74	0.21 0.04	60	(4) (28) (5)		Between 26.65m and 26.84m, discontinuities are subvertical, undulating, rough, clean.							
27.90-29.40 (92mm)	10.40 (ADDED)	100 80	0.19 0.03	64	(10) (NI) (8)		Between 28.00m and 28.06m, non-intact. Recovered as gravel. At 28.20m, thick laminae (up to 15mm) of extremely weak to very weak reddish brown mudstone. Between 28.20m and 28.30m, inclined (45 degrees) discontinuity, undulating, rough, clean with dark grey staining. Between 28.20m and 28.70m, fine to medium grained.							
29.40-30.90 (92mm)	10.40 (ADDED)	77 54	0.29 0.02	62	(AZCL) (10)									
Drilling						Progress			Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
Remarks														
Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres.														
Logged in accordance with BS5930:2015 A1:2020														
Logged by TM Figure 3 of 4 08/06/2021 														

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH102
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397697.2 E
382722.1 N

Ground Level 25.99 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length	RQD	SPT N	Description General	Description Detail	Depth	Legend	Level m OD
		TCR/SCR%	Max/Min	%	(F)					
					(5)		Between 29.40m and 29.75m, assumed zone of core loss.			
30.90-32.40 (92mm)	10.40 (ADDED)	90 73	0.26 0.02	62	(AZCL)		Between 30.05m and 30.50m, subvertical to inclined (20 degrees) discontinuities are closely spaced.			
					(6)		At 30.38m, laminae (up to 15mm) of very weak reddish brown mudstone.			
					(NI)		Between 30.62m and 30.85m, fine to medium grained.			
32.40-33.90 (92mm)	10.40 (ADDED)	97 70	0.25 0.02	40	(20)		Between 30.90m and 40.05m, assumed zone of core loss.			
					(AZCL)		Between 32.20m and 32.30m, non-intact.			
					(10)		Recovered as clayey sand.			
					(NI)		Between 32.30m and 32.57m, subvertical discontinuity, undulating, rough, clean.			
					(7)		Between 32.40m and 32.44m, assumed zone of core loss.			
33.90-35.40 (92mm)	10.40 (ADDED)	95 61	0.18 0.01	33	(AZCL)		Below 33.00m, grey. Closely to medium spaced, very thin to thin reddish brown beds.			
					(13)		Between 33.12m and 33.24m, subvertical discontinuity, undulating.			
							Between 33.94m and 33.97m, non-intact. Recovered as clayey sand.			
							Between 33.90m and 33.97m, assumed zone of core loss.	35.40		-9.41
							Below 33.97m, discontinuities are subhorizontal to inclined (20 degrees), very closely to closely spaced.			
							Between 34.10m and 34.22m, subvertical discontinuity, undulating rough, clean.			
							Between 34.95m and 35.10m, subvertical discontinuity, undulating, rough, with some clay infill (up to 4mm).			
						End of Borehole				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by TM

Figure 4 of 4
08/06/2021

Ground Level 25.78 m OD

Sampling			Properties			Strata		Scale 1:50						
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (F)	Description	Depth	Legend	Level m OD					
0.20- 0.40	B					MADE GROUND: Black tarmacadam.	G.L.		25.78					
0.20	D					MADE GROUND: Orangish brown sandstone cobble/boulder.	0.20		25.58					
0.20	ES						0.40		25.38					
0.20														
0.40- 0.90	B					MADE GROUND: Very soft to soft brown, black occasionally reddish brown sandy gravelly clay. Gravel is angular to subangular fine to coarse of ash and brick fragments. Becoming orange with depth.	0.90		24.88					
0.50	D													
0.50	ES													
0.50														
0.90- 1.20	B					Loose orangish brown very clayey fine to medium SAND.								
1.00	D													
1.00	ES													
1.20- 1.65	B													
1.20- 1.65	D	(DRY)			S5									
2.00- 2.45	B													
2.00- 2.45	D	2.00 (DRY)			S6									
3.00- 3.45	B													
3.00- 3.45	D	3.00 (DRY)			S19	Medium dense orangish brown gravelly clayey fine to medium SAND with a low cobble content. Gravel is subrounded fine to coarse of sandstone.	3.00		22.78					
4.00- 4.45	B													
4.00- 4.45	D	4.00 (3.30)			C31	Dense dark grey and brown sandy clayey angular to subangular fine to coarse GRAVEL of sandstone. Low cobble content.	4.00		21.78					
5.00- 5.45	B													
5.00- 5.13	D	5.00 (4.50)			C50/60	Very dense orangish brown gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone (Weathered sandstone).	5.00		20.78					
6.00- 6.45	B													
6.00- 6.15	D	6.00 (4.50)			S50/80									
7.00- 7.95	B													
7.00	D													
7.50- 7.58	B													
7.50	D	7.50 (5.00)			S50/30									
7.58							7.58		18.20					
Core Run/Depth-Depth (Core Dia/Time)			TCR/SCR /Type	Length Max/Min	RQD %	SPT (F)	Continued by Rotary techniques General		Detail					
7.58- 9.00 (109mm)	7.50 (ADDED)	0	0.00	0			**Extremely weak reddish brown SANDSTONE.		Between 7.58m and 11.60m, no recovery due to metal obstruction (probable caving) within borehole.					
9.00-10.10 (109mm)	7.50 (ADDED)	0	0.00	0										
						(NR)								
Boring			Progress				Groundwater							
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	LM/MP	G.L.			26/04/21	09:00	3.50					
7.50	0.20	Cable Percussion	LM/MP	7.58	7.50	5.00	26/04/21	18:00	4.00	4.00	3.30	20		Damp strata. Slow inflow.
20.60	0.11	Rotary Core	FB/LP	7.95	7.50	3.40	28/04/21	08:00						
50.00	0.09	Rotary Core	FB/LP	9.00	7.50	3.40	27/04/21	18:00						
				9.00	7.50	3.40	29/04/21	08:00						
				11.60	7.50	3.40	29/04/21	18:00						
Remarks														
Inspection pit hand excavated to 1.20m depth and no services were found.														
ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.														
PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.														
Between 7.58m and 11.60m, no recovery due to metal obstruction (probable caving) within borehole.														
** Drillers description.														
In situ Packer Permeability Tests carried out between 9.00m and 12.00m and between 15.00m														
Logged in accordance with BS5930:2015 A1:2020														
Logged by TM														
Figure 1 of 6														
08/05/2021														
geotechnics														

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	ROD %	SPT N (FI)	Description General	Description Detail	Depth	Legend	Level m OD
10.10-11.60 (109mm)	7.50 (ADDED)	0	0.00	0						
11.60-13.10 (109mm)	7.50 (ADDED)	61	0.07	0	(AZCL)	Extremely weak to very weak thinly to widely bedded reddish brown medium to coarse grained SANDSTONE with closely to medium spaced thin yellowish grey beds. Occasional rounded to subrounded clasts (2mm to 20mm) of mudstone and quartzite. Discontinuities are subhorizontal to inclined (20 degrees), extremely closely to closely spaced, planar and undulating, rough, generally clean with occasional sand infill (up to 25mm).	Between 11.60m and 12.18m, assumed zone of core loss.	11.60		14.18
11.60-11.67 (3.20)	7.50 (ADDED)	32	0.01		(S50/20)					
					(>30)					
					(12)					
					(>30)					
13.10-14.60 (109mm)	7.50 (ADDED)	54	0.14	18	(AZCL)		Between 13.10m and 13.78m, assumed zone of core loss.			
		40	0.01				Below 13.78m, discontinuities are very closely to closely spaced.			
					(7)		Between 13.90m and 14.02m, discontinuities are inclined (75 degrees), undulating, rough, clean.			
							Between 14.02m and 15.10m, assumed zone of core loss.			
14.60-16.10 (109mm)	7.50 (ADDED)	66	0.26	48	(AZCL)		Between 15.10m and 15.92m, discontinuities are closely to medium spaced.			
		58	0.02				Between 15.10m and 15.20m, non-intact. Recovered as gravel.			
					(NI)		Between 16.10m and 16.45m, assumed zone of core loss.			
					(5)					
					(22)					
16.10-17.60 (109mm)	7.50 (ADDED)	76	0.56	0	(AZCL)		Between 16.72m and 17.20m, discontinuities are extremely closely spaced.			
		70	0.01				Between 16.78m and 17.75m, non intact. Recovered as sandy gravel.			
					(17)					
					(>30)					
					(17)					
17.60-19.10 (109mm)	7.50 (ADDED)	100	0.24	59	(25)		Below 17.75m, discontinuities are subhorizontal to inclined (45 degrees), very closely to medium spaced.			
		90	0.02							
					(NI)					
					(9)					
19.10-20.60 (109mm)	7.50 (ADDED)	100	0.32	67	(3)					
		85	0.03							
					(10)					

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Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				11.60	7.50	3.00	30/04/21	08:00						
				16.10	7.50	3.05	30/04/21	18:00						
				16.10	7.50	3.20	04/05/21	08:00						
				20.60	7.50	3.10	01/05/21	18:00						
				20.60	7.50	3.00	06/05/21	08:00						
				23.60	7.50	3.00	05/05/21	18:00						

Remarks

and 18.00m.
 High Pressure Dilatometer (HPD) Tests carried out by In Situ Ground Investigation Limited at
 9.80m, 13.90m, 14.80m, 22.00m, 25.80m and 34.20m.
 A 50mm standpipe was installed to 30.00m with a geowrapped slotted section from 3.00m to
 30.00m with flush lockable protective cover. Backfill details from base of hole: bentonite
 seal up to 30.00m, gravel filter up to 3.00m, bentonite seal up to 0.20m, concrete up to
 ground level.
 Flush: 7.50-20.60m, Air/Mist, 100% returns; 20.60-23.60m, Water, 50% returns; 23.60-25.10m,
 Logged in accordance with BS5930:2015 A1:2020

Logged by **TM**
 Figure **2 of 6**
 08/05/2021


Symbols and abbreviations are explained on the accompanying key sheet.
 All dimensions are in metres.

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH103
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397731.0 E
382718.0 N

Ground Level 25.78 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD
					(NI)		Between 20.20m and 20.40m, inclined (75 degrees) discontinuity, undulating, rough, clean.			
20.60-21.10 (109mm)	7.50 (ADDED)	97 80	0.35 0.01	61	(AZCL) (NI)		Between 20.37m and 20.60m, non-intact. Recovered as sandy gravel.			
21.10-23.60 (109mm)	7.50 (ADDED)	100 97	0.34 0.03	76	(>30) (6) (11)		Between 20.60m and 20.65m, assumed zone of core loss. Between 21.10m and 21.25m, discontinuities are extremely closely spaced. Between 22.10m and 23.15m, fine to medium grained.			
23.60-25.10 (109mm)	7.50 (ADDED)	83 69	0.22 0.04	45	(AZCL) (NI) (9)		Between 23.60m and 23.85m, assumed zone of core loss. Between 23.85m and 23.95m, non-intact. Recovered as clayey gravel.			
25.10-26.40 (109mm)	7.50 (ADDED)	87 84	0.35 0.04	68	(NI) (6)		At 24.98m, very thin bed (50mm thick) of extremely weak reddish brown mudstone. Between 25.10m and 25.14m, non-intact. Recovered as gravel. Between 25.75m and 26.40m, fine to medium grained.			
26.40-27.90 (109mm)	7.50 (ADDED)	3.3 0	0.00 0.00	0	(AZCL)		Between 26.40m and 27.85m, assumed zone of core loss.			
27.90-29.40 (109mm)	7.50 (ADDED)	66 18	0.06 0.01	0	(NI) (AZCL) (NI) (>30) (NI)		Between 27.85m and 27.90m, non-intact. Recovered as gravel. Between 27.90m and 28.40m, assumed zone of core loss. Between 28.40m and 28.50m, non intact. Recovered as gravel. Between 28.50m and 29.28m, discontinuities are extremely closely to very closely spaced. Between 29.28m and 29.40m, non intact. Recovered as gravel. Between 29.40m and 30.00m, assumed zone of core loss.			
29.40-30.90 (109mm)	7.50 (ADDED)	60 33	0.12 0.02	8	(AZCL) C50/30					
29.40-29.45 (3.20)	7.50 (3.20)									

Drilling				Progress				Groundwater						
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				23.60	7.50	3.00	07/05/21	08:00						
				25.10	7.50	3.00	07/05/21	18:00						
				25.10	7.50	3.00	10/05/21	08:00						
				27.90	7.50	3.00	10/05/21	18:00						
				27.90	7.50	3.00	11/05/21	08:00						
				33.20	7.50	3.00	11/05/21	18:00						

Remarks 100% return. 25.10-26.40m, Water, 0% returns; 26.40-27.90m, Water, 20% returns; 27.90-32.40m, Water, 100% returns; 32.40-38.40m, Water, 90% returns; 38.40-50.00m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by TM

Figure 3 of 6

03/06/2021

geotechnics

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH103
PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397731.0 E
382718.0 N

Ground Level 25.78 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (FI)	Description General	Description Detail	Depth	Legend	Level m OD
					(18)		Below 30.00m, discontinuities are extremely closely to closely spaced.			
30.90-32.40 (109mm)	7.50 (ADDED)	77	0.12	8	(NI)		Between 30.70m and 30.90m, non-intact. Recovered as gravel.			
30.90-30.95 (3.20)	7.50 (3.20)	45	0.12		(AZCL)		Between 30.90m and 31.22m, assumed zone of core loss.			
					(15)		Between 31.42m and 31.48m, non-intact. Recovered as gravel.			
					(NI)		At 31.60m, thin lamina of extremely weak reddish brown mudstone.			
					(21)					
32.40-33.90 (109mm)	7.50 (ADDED)	14	0.05	0	(AZCL)		Between 32.40m and 33.68m, assumed zone of core loss.			
		11	0.02							
					(NI)		Between 33.68m and 33.73m, non-intact. Recovered as gravel.			
33.90-35.40 (109mm)	7.50 (ADDED)	46	0.21	31	(26)		Between 33.90m and 34.70m, assumed zone of core loss.			
		40	0.02		(AZCL)					
					(>30)					
					(6)					
35.40-36.90 (109mm)	7.50 (ADDED)	91	0.14	9.3	(AZCL)					
		60	0.01		(23)					
					(17)					
36.90-38.40 (109mm)	7.50 (ADDED)	71	0.24	44	(AZCL)					
		71	0.03		(9)					
38.40-39.90 (92mm)	7.50 (ADDED)	94	0.18	22	(AZCL)		Between 38.40m and 38.49m, assumed zone of core loss.			
		53	0.02		(14)		Below 38.49m, discontinuities are very closely to closely spaced.			
					(NI)		Between 38.59m and 38.73m, non-intact. Recovered as gravel.			
					(14)		Between 38.73m and 39.50m, discontinuities have gravelly sand infill (up to 20mm).			
					(NI)					
					(9)					
39.90-41.40 (92mm)	7.50 (ADDED)	100	0.16	27						
		74	0.01							

Drilling				Progress				Groundwater						
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				33.90	7.50	3.00	12/05/21	08:00						
				35.40	7.50	3.00	12/05/21	18:00						
				35.40	7.50	3.00	13/05/21	08:00						
				38.40	7.50	3.00	13/05/21	18:00						
				38.40	7.50	3.30	19/05/21	08:00						
				50.00	7.50	3.30	14/05/21	18:00						

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by TM

Figure 4 of 6
08/06/2021

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH103
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397731.0 E
382718.0 N

Ground Level 25.78 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (Fl)	Description General	Description Detail	Depth	Legend	Level m OD				
					(13)		Between 39.50m and 39.58m, non-intact. Recovered as gravel. At 40.20m, elliptical grey lens with concentric orange staining (up to 30mm penetration). At 40.90m, stained orangish brown. Between 41.40m and 41.50m, assumed zone of core loss. Between 41.50m and 42.02m, discontinuities are extremely closely to very closely spaced.	41.95		-16.17				
41.40-42.90 (92mm)	7.50 (ADDED)	93 55	0.10 0.01	7	(AZCL) (28)									
					(14)	Extremely weak thinly to widely bedded grey medium to coarse grained SANDSTONE with closely to widely spaced thin reddish brown beds. Occasional rounded medium to coarse inclusions of siltstone and quartzite. Discontinuities are subhorizontal to inclined (20 degrees), very closely to closely spaced, planar and undulating, rough, clean.	Between 42.07m and 42.16m, inclined (60 degrees) discontinuity, undulating, rough, clean. Between 42.90m and 42.98m, assumed zone of core loss. Below 42.98m, discontinuities are very closely to medium spaced. Between 43.60m and 43.85m, reddish brown fine to medium grained silty bed.							
42.90-44.40 (92mm)	7.50 (ADDED)	94 87	0.31 0.03	77	(AZCL)									
					(6)									
44.40-45.90 (92mm)	7.50 (ADDED)	95 79	0.18 0.02	43	(AZCL)		Between 44.40m and 44.48m, assumed zone of core loss. Between 44.48m and 44.74m, discontinuities are very closely spaced. Between 44.73m and 45.15m, discontinuities are very closely spaced.							
					(28)									
					(5)									
					(>30)									
					(9)									
45.90-48.90 (92mm)	7.50 (ADDED)	97 87	0.35 0.02	56	(AZCL)		Between 45.90m and 46.0m, assumed zone of core loss. At 46.44m, lenticular clast of reddish brown mudstone (60mm). Between 46.82m and 46.97m, stained orangish brown with many rounded medium inclusions of sandstone and quartzite and lenticular clasts of reddish brown mudstone (up to 50mm). Below 47.35m, stained yellowish grey.							
					(14)									
					(3)									
					(13)									
					(4)		At 48.50m, clast of very weak reddish brown mudstone (50mm). Between 48.90m and 49.00m, assumed zone of core loss. Below 49.00m, discontinuities are extremely to very closely spaced with much sand infill. Between 49.06m and 49.16m, non-intact. Recovered as gravel.							
48.90-50.00 (92mm)	7.50 (ADDED)	91 13	0.03 0.01	0	(AZCL)			50.00		-24.22				
					(>30)									
					(NI)									
					(>30)									
					(AZCL)									
Drilling		Progress				Groundwater								
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				50.00	7.50	3.30	20/05/21	08:00						
				50.00	7.50		20/05/21	18:00						
				50.00	7.50	3.30	21/05/21	08:00						
				50.00	7.50		21/05/21	18:00						
Remarks														
AGS														
Symbols and abbreviations are explained on the accompanying key sheet.														
All dimensions are in metres.														
Logged in accordance with BS5930:2015 A1:2020														
										Logged by TM				
										Figure 5 of 6 08/06/2021				
geotechnics														

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH103
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397731.0 E
382718.0 N

Ground Level 25.78 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	ROD %	SPT N (FI)	Description General	Description Detail	Depth	Legend	Level m OD
							Between 49.92m and 49.85m, non-intact. Recovered as very sandy gravel. Below 49.85m, very gravelly sand.	50.00		-24.22
						End of Borehole				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks  Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres.	Logged by TM Figure 6 of 6 08/06/2021 
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Logged in accordance with BS5930:2015 A1:2020

Sampling			Properties			Strata		Scale 1:50						
Depth	Sample Type	Depth Cased & Into Water	Strength kPa	w %	SPT N (F)	Description	Depth	Legend	Level m OD					
0.00 - 0.50	B ES		PID=0.0			MADE GROUND: Black tarmacadam.	G.L. 0.10		24.99 24.89					
0.50 - 0.80	B D ES		PID=0.0			MADE GROUND: Brown, black occasionally reddish brown gravelly fine to medium sand with a medium cobble content. Gravel is angular to subangular fine to coarse of ash and brick fragments.	0.35 0.50		24.64 24.49					
0.80 - 1.20	B ES		PID=0.0			MADE GROUND: Gray concrete.								
1.20 - 1.65	UT6	1.20 (DRY)				MADE GROUND: Brown, black occasionally reddish brown gravelly fine to medium sand with a medium cobble content. Gravel is angular to subangular fine to coarse of ash and brick fragments.	1.20		23.79					
1.70	D				S3	Very loose brown clayey fine SAND.								
2.00 - 2.45	B D	1.50 (DRY)												
3.00 - 3.45	UT11	3.00 (DRY)				Very soft brown sandy CLAY.	3.00		21.99					
3.50	D					Reddish brown clayey fine to medium SAND.	3.50		21.49					
4.00 - 4.45	B				S50/50	Extremely weak to weak red fine to medium grained SANDSTONE (Recovered as sandy gravel).	3.90		21.09					
4.00 - 4.18	D	4.00 (DRY)												
5.00 - 5.45	B				S50/50	Below 5.50m, reddish brown.								
5.00 - 5.19	D	4.50 (3.00)												
6.50 - 6.95	B				S50/30									
6.50 - 6.64	D	6.00 (4.10)												
8.00 - 8.10	D	6.00 (4.80)			S50/60		8.10		16.89					
Core Run/Depth-Depth (Core Dia/Time) Cased			TCR/SCR / Type	Length Max/Min	ROD %	SPT (F)	Continued by Rotary techniques General		Detail					
8.10 - 9.50 (92mm)			8.00 (ADDED) 80	0.26 0.02	66	(AZCL) (9)	Extremely weak to very weak thinly to widely bedded reddish brown medium to coarse grained SANDSTONE with closely to medium spaced thin yellowish grey beds. Occasional subrounded to rounded clasts (up to 60mm) of quartz, quartzite and mudstone. Discontinuities are		Between 8.10m and 8.14m, assumed zone of core loss. Between 8.18m and 8.30m, inclined (80 degrees) discontinuity, undulating, rough, clean, with dark grey staining on surface. Below 9.00m, dark grey staining absent.					
9.50 - 11.00 (92mm)			8.00 (ADDED) 83	0.23 0.02	67	(AZCL)								
Boring			Progress			Groundwater								
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose In	In Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	LGLH	G.L.			27/04/21	08:00	4.00	4.00	2.80	20		Slow inflow, Fast inflow.
8.00	0.20	Cable Percussion	LG/LH	4.45	4.00	2.80	27/04/21	18:00	17.30	8.00		20		
25.00	0.09	Rotary Core	JB/CB	4.45	4.00	2.40	28/04/21	08:00			3.00	20		
				8.10	8.00	2.50	28/04/21	18:00						
				8.00	8.00	3.10	06/05/21	08:00						
				25.00	8.00	3.00	06/05/21	18:00						
Remarks Inspection pit hand excavated to 1.20m depth and no services were found. ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials. PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm. A 50mm standpipe was installed to 25.00m with a geowrapped slotted section from 1.50m to 25.00m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 1.50m, bentonite seal up to 0.20m, concrete up to ground level. Chiselling: 4.00-5.00m for 45 minutes and 3.00-6.50m for 75 minutes and 6.50-8.00m for 90														
Logged by TM Figure 1 of 3 08/06/2021 geotechnics														

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH104
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397746.0 E
382676.0 N

Ground Level 24.99 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length	RQD	SPT N	Description General	Description Detail	Depth	Legend	Level m OD
		TCR/SCR% Max/Min	%	%	(F)					
					(8)	subhorizontal to inclined (60 degrees), very closely to medium spaced, planar to undulating, rough, with occasional clay or sand infill (up to 5mm) and dark grey staining on surfaces.	Between 8.40m and 8.56m, inclined (80 degrees) discontinuity, undulating, rough, clean. Between 9.50m and 9.62m, assumed zone of core loss.			
11.00-12.50 (92mm)	8.00 (ADDED)	88 69	0.14 0.02	55	(AZCL)		Between 11.00m and 11.18m, assumed zone of core loss. Below 11.18m, subrounded to rounded clasts (up to 60mm) of quartz, quartzite and mudstone. Below 11.18m, discontinuities are subhorizontal to inclined (20 degrees), very closely to medium spaced, undulating to planar, rough, with occasional sand infill (up to 20mm). Additional set of subvertical to inclined (70 degrees) discontinuities closely to widely spaced, undulating, rough, clean.			
12.50-14.00 (92mm)	8.00 (ADDED)	84 69	0.17 0.02	11	(AZCL)		Between 12.50m and 12.74m, assumed zone of core loss.			
14.00-15.50 (92mm)	8.00 (ADDED)	93 91	0.33 0.08	69	(AZCL)		Between 14.00m and 14.10m, assumed zone of core loss. Below 14.20m, yellowish grey mottled and speckled reddish brown. Discontinuities are subhorizontal to inclined (20 degrees), closely to medium spaced.			
15.50-17.00 (92mm)	8.00 (ADDED)	97 91	0.13 0.02	9	(AZCL)		Between 15.50m and 15.55m, assumed zone of core loss. Below 16.03m, fine to medium grained. Discontinuities are subhorizontal to inclined (20 degrees), very closely to closely spaced, clean.			
17.00-18.50 (92mm)	8.00 (ADDED)	70 70	0.18 0.03	34	(AZCL)		Between 16.50m, medium to coarse grained. Between 17.00m and 17.45m, assumed zone of core loss.			
					(12)		Between 17.65m and 17.90m, non-intact. Recovered as gravel.			
					(NI)					
					(10)					
18.50-20.00 (92mm)	8.00 (ADDED)	80 55	0.15 0.02	27	(AZCL)		Between 18.50m and 18.80m, assumed zone of core loss.			
					(11)					
					(AZCL)					

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks 0 minutes.
AGS Flush: 8.10-25.00m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by TM

Figure 2 of 3
08/06/2021

geotechnics

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH104
PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397746.0 E
382676.0 N

Ground Level 24.99 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (F)	Description General	Description Detail	Depth	Legend	Level m OD
20.00-21.50 (92mm)	8.00 (ADDED)	93 81	0.18 0.03	54	(16) (NI) (10)		Between 20.00m and 20.10m, assumed zone of core loss. Between 20.22m and 20.39m, non-intact. Recovered as sandy gravel.			
21.50-23.00 (92mm)	8.00 (ADDED)	97 91	0.20 0.04	72	(AZCL) (8)		Between 21.50m and 21.55m, assumed zone of core loss.			
23.00-24.50 (92mm)	8.00 (ADDED)	60 43	0.10 0.01	13	(AZCL) (16) (>30) (11)		Between 23.00m and 23.60m, assumed zone of core loss. Between 24.00m and 24.12m, discontinuities are subhorizontal to inclined (20 degrees), extremely closely to very closely spaced.			
24.50-25.00 (92mm)	8.00 (ADDED)	100 100	0.18 0.03	58	(10)					
End of Borehole								25.00		-0.01

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by TM

Figure 3 of 3
08/06/2021



BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole
Project No

BH105
PN214217

Client RENAKER BUILD LIMITED

National Grid 397779.0 E
Coordinates 382711.0 N

Ground Level 25.27 m OD

Sampling		Properties			Strata		Scale 1:50							
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N (F)	Description	Depth	Legend	Level m OD					
0.20	B					MADE GROUND: Black tarmacadam.	G.L.		25.27					
0.20	D						0.10		25.17					
0.20	ES					MADE GROUND: Dark brown occasionally reddish brown gravelly clayey fine to medium sand with a low cobble content. Gravel is angular to subangular fine to coarse of brick fragments.	0.30		24.97					
0.20			PID=0.0				0.45		24.82					
0.50	B													
0.50	D													
0.50	ES					MADE GROUND: Brown sandstone cobble setts (old road surface).								
0.50			PID=0.0											
1.00	B													
1.00	D					MADE GROUND: Black and reddish brown gravelly clayey fine to medium sand with a low cobble content. Gravel is angular to subangular fine to coarse of ash and brick fragments.								
1.00	ES					Below 1.20m, very loose to loose.								
1.00			PID=0.0											
1.20- 1.65	B				S4									
1.20- 1.65	D	(DRY)												
2.00- 2.45	B				S5	Loose orangish brown slightly gravelly very clayey fine SAND. Gravel is subrounded fine to coarse of sandstone.	2.00		23.27					
2.00- 2.45	D	(DRY)												
3.00- 3.45	B				S20	Below 3.00m, medium dense.								
3.00- 3.45	D	3.00 (WET)												
4.00- 4.45	B				C50/165	Below 4.00m, very dense.								
4.00- 4.32	D	4.00 (3.00)												
5.00- 5.45	B				S50/50	Very dense reddish brown slightly gravelly very clayey fine SAND. Gravel is subrounded fine to coarse of sandstone (Weathered sandstone).	4.70		20.57					
5.00- 5.16	D	5.00 (3.40)												
6.50- 6.95	B				S50/40	Below 6.70m, occasional mudstone clasts (recovered as stiff reddish brown slightly gravelly sandy clay).								
6.50- 6.69	D	6.00 (4.50)												
7.00	D				(AZCL)		7.00		18.27					
Core Run/Depth-Depth (Core Dia/Time)-Cased		TCR/SCR / Type	Length Max/Min	RQD %	SPT (F)	Continued by Rotary techniques General	Detail							
7.00- 8.30 (109mm)	7.00 (ADDED)	90 69	0.17 0.01	12	(14)	Extremely weak to very weak thinly to widely bedded reddish brown medium coarse grained SANDSTONE with closely to widely spaced thin to medium yellowish grey and greenish grey beds. Occasional rounded to subrounded clasts (up to 20mm) of mudstone and quartz. Discontinuities are subhorizontal to inclined (20 degrees), very closely to medium spaced, planar and undulating, rough, clean with orange and dark grey staining on surfaces.	Between 7.00m and 7.15m, assumed zone of core loss.							
8.30- 9.80 (109mm)	8.30 (ADDED)	59 52	0.24 0.03	32	(>30) (AZCL)		Between 7.58m and 7.70m, inclined (60 degrees) discontinuity, undulating, rough, clean.							
					(7)		Between 7.68m and 7.78m, inclined (60 degrees) discontinuity, undulating, rough, clean.							
							Between 8.20m and 8.30m, discontinuities are extremely closely spaced.							
							Between 8.20m and 9.08m, fine to medium grained, slightly silty.							
9.80-11.30 (109mm)	8.30 (ADDED)	83 71	0.28 0.04	29	(AZCL)									
Boring			Progress				Groundwater							
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose In	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	LG/LR	G.L.			26/04/21	09:00	4.00	4.00	3.80	20		slow inflow.
7.00	0.20	Cable Percussion	LG/LR	6.69	6.10	4.10	26/04/21	18:00						
50.80	0.11	Rotary Core	FB/LP	6.69	6.10	3.60	27/04/21	08:00						
				7.00	7.00	3.60	27/04/21	12:00						
				7.00	7.00	3.60	27/04/21	12:00						
				8.30	8.30	3.60	27/04/21	18:00						
Remarks Inspection pit hand excavated to 1.20m depth and no services were found.														
ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.														
PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.														
In situ Packer Permeability Tests carried out between 9.80m and 11.80m and between 12.00m and 15.00m.														
High Pressure Dilatometer (HPD) Tests carried out by In Situ Ground Investigation Limited at 9.80m, 12.30m, 16.30m, 23.60m to 26.30m and 31.35m.														
Logged in accordance with BS5930:2015 A1:2020														
Logged by TM										Figure 1 of 6 08/06/2021				
geotechnics														

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH105
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397779.0 E
382711.0 N

Ground Level 25.27 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (F)	Description General	Description Detail	Depth	Legend	Level m OD				
					(10)		Between 8.30m and 8.90m, assumed zone of core loss. Between 9.80m and 10.03m, assumed zone of core loss.							
11.30-12.80 (109mm)	8.30 (ADDED)	5 5	0.08 0.01	0	(AZCL)		Between 11.30m and 12.72m, assumed zone of core loss. Between 12.05m and 12.20m, stained orangish brown.							
12.80-14.30 (109mm)	8.30 (ADDED)	44 32	0.19 0.01	24	(12) (AZCL)		Between 12.80m and 13.62m, assumed zone of core loss.							
					(16) (NI) (7)		Between 13.74m and 13.88m, non-intact. Recovered as gravel. Between 14.30m and 14.80m, assumed zone of core loss.							
14.30-15.80 (109mm)	8.30 (ADDED)	66 52	0.17 0.01	29	(AZCL)		Between 15.45m and 15.55m, non-intact. Recovered as gravel. Between 15.80m and 16.00m, assumed zone of core loss.							
					(9) (NI) (8)		Between 16.00m and 16.05m, non-intact. Recovered as gravel. Between 16.44m and 16.64m, inclined (80 degrees) discontinuity, planar, rough, clean.							
15.80-17.30 (109mm)	8.30 (ADDED)	88 76	0.17 0.03	22	(AZCL) (NI) (9)		Between 16.64m and 16.92m, inclined (80 degrees) discontinuity, planar, rough, clean. Between 17.30m and 19.05m, assumed zone of core loss - driller notes that rock was possibly scrubbed by debris from burst HPD equipment.							
17.30-18.80 (109mm)	8.30 (ADDED)	0 0	0.00 0.00	0	(AZCL)		Between 19.05m and 19.13m, non-intact. Recovered as gravel.							
18.80-19.30 (109mm)	8.30 (ADDED)	50 34	0.09 0.08	0	(NI)		Between 19.13m and 19.30m, fine to medium grained, slightly silty.							
19.30-20.30 (109mm)	8.30 (ADDED)	70 27	0.10 0.02	10	(12) (AZCL) (18)		Between 19.30m and 19.60m, assumed zone of core loss.							
Drilling		Progress					Groundwater							
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				8.30	8.30	2.90	28/04/21	08:00						
				11.30	8.30	2.90	28/04/21	18:00						
				11.30	8.30	3.00	29/04/21	08:00						
				14.30	8.30	3.00	29/04/21	18:00						
				14.30	8.30	2.90	04/05/21	08:00						
				15.80	8.30	3.00	04/05/21	18:00						
Remarks A 50mm standpipe was installed to 30.00m with a geowrapped slotted section from 3.00m to 30.00m with flush lockable protective cover. Backfill details from base of hole: bentonite seal up to 30.00m, gravel filter up to 3.00m, bentonite seal up to 0.20m, concrete up to ground level. Chiselling: 2.70-3.00m for 20 minutes and 4.00-4.50m for 45 minutes and 5.00-6.00m for 50 minutes and 6.00-6.70m for 40 minutes and 6.70-7.00m for 50 minutes. Flush: 7.00-8.30m, Air/Mist, 50% returns; 8.30-11.30m, Water, 50% returns; 11.30-14.30m, Water, 100% returns; 14.30-19.30m, Water, 0% returns; 19.30-20.30m, Water, 20% returns; Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres. Logged in accordance with BS5930:2015 A1:2020														
										Logged by TM Figure 2 of 6 08/06/2021 geotechnics				

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH105
PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397779.0 E
382711.0 N

Ground Level 25.27 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD
					(NI)		Between 19.60m and 19.88m, extremely weak. Between 19.88m and 20.00m, non-intact. Recovered as gravally clay.			
20.30-21.80 (109mm)	8.30 (ADDED)	21 0	0.01 0.01	0	(10)		Between 20.30m and 21.49m, assumed zone of core loss.			
					(AZCL)		Between 21.49m and 21.80m, non-intact. Recovered as gravel. Between 21.80m and 22.52m, assumed zone of core loss.			
21.80-23.30 (109mm)	8.30 (ADDED)	52 40	0.16 0.01	11	(AZCL)		Between 22.52m and 23.17m, discontinuities are extremely to very closely spaced. Between 22.88m and 23.00m, thick laminae of very weak reddish brown mudstone. Between 23.30m and 24.68m, assumed zone of core loss.			
					(20)		Between 24.68m and 24.80m, discontinuities are extremely closely spaced. Between 24.80m and 25.93m, assumed zone of core loss.			
23.30-24.80 (109mm) (mins)	8.30 (ADDED)	8 8	0.03 0.01	0	(AZCL)		Between 25.93m and 26.30m, fine to medium grained, locally slightly silty. Between 26.30m and 27.70m, assumed zone of core loss.			
					(>30)		Between 27.70m and 27.80m, non-intact. Recovered as gravel. Between 27.80m and 29.20m, assumed zone of core loss.			
24.80-26.30 (109mm)	8.30 (ADDED)	25 19	0.23 0.05	15	(AZCL)		Between 29.20m and 29.30m, non-intact. Recovered as gravel. Between 29.30m and 30.65m, assumed zone of core loss.			
					(5)					
26.30-27.80 (109mm)	8.30 (ADDED)	7 0	0.00 0.00	0	(AZCL)					
					(NI)					
27.80-29.30 (109mm)	8.30 (ADDED)	7 0	0.00 0.00	0	(AZCL)					
					(NI)					
29.30-30.80 (109mm)	8.30 (ADDED)	10 0	0.00 0.00	0	(AZCL)					

Drilling				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed
				15.80	8.30	2.90	05/05/21	08:00					
				18.80	8.30	2.90	05/05/21	18:00					
				18.80	8.30	2.90	06/05/21	08:00					
				19.30	8.30	2.90	06/05/21	18:00					
				19.30	8.30	2.90	07/05/21	08:00					
				20.30	8.30	2.90	07/05/21	18:00					

Remarks 20.30-32.30m, Water, 50% returns; 32.30-50.80m, Air/Mist, 100% return.

Logged by TM

Figure 3 of 6
03/06/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

geotechnics

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH105
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397779.0 E
392711.0 N

Ground Level 25.27 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD				
					(NI)									
30.80-32.30 (109mm)	8.30 (ADDED)	87 79	0.30 0.03	70	(AZCL)		Between 30.65m and 30.80m, non-intact. Recovered as gravel.							
					(NI)		Between 30.80m and 31.00m, assumed zone of core loss.							
					(6)		Between 31.00m and 31.11m, non-intact. Recovered as clayey gravel.							
							Between 31.48m and 31.82m, fine to medium grained, slightly silty.							
32.30-32.80 (109mm)	8.30 (ADDED)	0 0	0.00 0.00	0	(AZCL)		Between 32.20m and 32.80m, assumed zone of core loss.	32.30		-7.03				
32.80-34.30 (109mm)	8.30 (ADDED)	87 25	0.03 0.01	0	(NI)	Extremely weak yellowish brown locally reddish brown slightly silty fine to medium grained SANDSTONE with rounded fine to coarse inclusions of siltstone and quartzite. Discontinuities are randomly oriented, extremely closely spaced, planar, rough, clean with occasional sand infill (up to 3mm).	Between 32.80m and 33.31m, non-intact. Recovered as sandy gravel.							
					(NI)		Between 33.25m and 33.50m, non-intact. Recovered as gravelly sand.							
					(>30)		Between 33.75m and 33.80m, non-intact. Recovered as sandy gravel.							
					(>30)		Between 34.30m and 34.40m, assumed zone of core loss.							
34.30-35.80 (109mm)	8.30 (ADDED)	91 53	0.23 0.03	27	(AZCL)		Below 34.40m, extremely weak to weak.							
					(20)		Between 34.40m and 34.65m, discontinuities are horizontal, very closely spaced, planar, rough, clean.							
					(NI)		Between 34.65m and 34.70m, non-intact. Recovered as sandy gravel.							
					(15)		At 34.70m, thick lamina of mudstone.							
35.80-37.30 (109mm)	8.30 (ADDED)	90 71	0.54 0.03	44	(AZCL)		Between 34.70m and 35.30m, discontinuities are horizontal to inclined (30 degrees), very closely to closely spaced, undulating and planar, rough with sand infill.							
					(18)		Between 35.30m and 35.40m, non-intact. Recovered as gravel and cobbles.							
					(2)		Below 35.40m, very weak.							
37.30-38.80 (109mm)	8.30 (ADDED)	86 72	0.29 0.06	57	(AZCL)		Between 35.80m and 35.95m, assumed zone of core loss.							
					(>30)		Between 35.95m and 36.55m, discontinuities are subhorizontal, extremely to very closely spaced, undulating and planar, rough, with some sand infill (up to 3mm).							
							Between 36.55m and 37.55m, discontinuities are subhorizontal to horizontal, closely to medium spaced, undulating, rough with some sand infill (up to 1mm).							
38.80-40.30 (109mm)	8.30 (ADDED)	97 82	0.26 0.04	48	(5)									
Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				20.30	8.30	2.90	10/05/21	08:00						
				23.30	8.30	2.90	10/05/21	18:00						
				23.30	8.30	2.90	11/05/21	08:00						
				26.30	8.30	2.90	11/05/21	18:00						
				26.30	8.30	2.90	12/05/21	08:00						
				32.30	8.30	2.90	12/05/21	18:00						
Remarks 														
Symbols and abbreviations are explained on the accompanying key sheet.														
All dimensions are in metres.														
Logged in accordance with BS5930:2015 A1:2020														
										Logged by TM				
										Figure 4 of 6				
										08/06/2021				
														

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH105
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397779.0 E
382711.0 N

Ground Level 25.27 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50							
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD					
40.30-41.80 (109mm)	8.30 (ADDED)	100 87	0.32 0.02	71			Between 37.85m and 38.00m, assumed zone of core loss. Between 38.00m and 38.25m, discontinuities are randomly oriented, extremely closely to closely spaced, undulating, rough, with some sand infill (up to 1mm). Between 38.25m and 41.40m, discontinuities are subhorizontal to inclined (40 degrees), very closely to medium spaced, undulating and planar, rough with some sand infill (up to 2mm). At 41.40m, inclined (60 degrees) discontinuity, undulating, rough with sand infill (up to 3mm). Between 41.80m and 41.95m, assumed zone of core loss. Between 41.95m and 42.75, discontinuities are subhorizontal to inclined (30 degrees), very closely to closely spaced, undulating and planar, rough, clean. Between 42.35m and 42.45m, inclined (60 degrees) discontinuity, undulating, rough, clean. Between 42.75m and 42.85m, non-intact. Recovered as sandy gravel. Between 42.85m and 44.80m, discontinuities are inclined (20 degrees), closely to medium spaced, undulating and planar, rough, clean. Between 44.80m and 45.80m, assumed zone of core loss. Between 45.80m and 46.15m, discontinuities are inclined (60 degrees), extremely closely to closely spaced, undulating and planar, rough, clean. Between 46.15m and 47.35m, discontinuities are horizontal to subhorizontal, very closely to closely spaced, undulating and planar, rough, clean. Between 47.35m and 47.50m, non-intact. Recovered as sandy gravel.								
41.80-43.30 (92mm)	8.30 (ADDED)	90 62	0.20 0.04	37	(AZCL)										
					(12)										
					(NI)										
43.30-44.80 (92mm)	8.30 (ADDED)	100 91	0.57 0.07	91											
					(5)										
44.80-46.30 (92mm)	8.30 (ADDED)	33 17	0.11 0.02	7	(AECL)										
					(>30)										
46.30-47.80 (92mm)	8.30 (ADDED)	97 66	0.14 0.03	46											
					(3)										
					(NI)										
					(7)										
47.80-49.30 (92mm)	8.30 (ADDED)	100 74	0.29 0.03	65	(>30)										
					(5)										
49.30-50.80 (92mm)	8.30 (ADDED)	100 97	0.37 0.05	85											
Drilling					Progress					Groundwater					
Depth	Hole Dia	Technique	Crew		Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					32.30	8.30	2.90	13/05/21	08:00						
					32.30	8.30	2.90	13/05/21	18:00						
					32.30	8.30	3.30	21/05/21	08:00						
					41.80	8.30	ADDED	14/05/21	18:00						
					41.80	8.30	3.30	24/05/21	08:00						
					50.80	8.30	3.30	26/05/21	18:00						
Remarks 										Logged by TM					
Symbols and abbreviations are explained on the accompanying key sheet.										Figure 5 of 6 08/06/2021					
All dimensions are in metres. Logged in accordance with BS5930:2015 A1:2020															

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH105
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397779.0 E
382711.0 N

Ground Level 25.27 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (FI)	Description General	Description Detail	Depth	Legend	Level m OD
							Between 51.15m and 50.40m, inclined (60 degrees) discontinuity, undulating and planar, rough, clean.	50.80		-25.53
						End of Borehole				

Drilling				Progress				Groundwater						
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
				50.80	8.30	3.40	25/05/21	08:00						
				50.80	8.30	ADDED	22/05/21	18:00						

Remarks  Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres.	Logged by TM Figure 6 of 6 08/06/2021 
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Logged in accordance with BS5930:2015 A1:2020

Sampling			Properties			Strata		Scale 1:50						
Depth	Sample Type	Depth Cased & /to Water	Strength kPa	w %	SPT N (F)	Description	Depth	Legend	Level m OD					
0.00- 0.10	D					MADE GROUND: Black tarmacadam. Between 0.00m and 0.10m, PAK marker spray test. No PAHs detected.	G.L.		24.73					
0.15	ES						0.10		24.63					
0.40- 1.00	B						0.20		24.53					
0.50	D						0.35		24.38					
0.50	ES					MADE GROUND: Very soft brown mottled orangish brown slightly gravelly very sandy clay with occasional pockets (up to 50mm) of ash. Gravel is angular to subrounded fine to coarse of sandstone, coal, slate and concrete.								
1.00	ES													
1.20- 1.65	B													
1.20- 1.65	D	1.20 (DRY)			S1	MADE GROUND: Brown sandstone cobble setts (Old road surface).	1.20		23.53					
						MADE GROUND: Dark brown, black occasionally reddish brown very gravelly slightly silty fine to coarse sand. Gravel is angular to subangular fine to coarse of ash, clinker, sandstone, coal, concrete and brick fragments.								
2.00- 2.45	B													
2.00- 2.45	D	2.00 (DRY)			S2									
						MADE GROUND: Very soft brown mottled orangish brown slightly gravelly very sandy clay with occasional pockets (up to 50mm) of ash. Gravel is angular to subrounded fine to coarse of sandstone, coal, slate and concrete.								
3.00- 3.45	B													
3.00- 3.45	D	3.00 (DRY)			S8	Loose brown very sandy clayey subangular fine to coarse GRAVEL of siltstone and sandstone. Low to medium cobble content. Occasional pockets of slightly gravelly very sandy clay.	3.00		21.73					
4.00- 4.45	B													
4.00- 4.30	D	4.00 (3.00)			S50/152									
4.20	D					Extremely weak to weak reddish brown silty fine to medium grained SANDSTONE (Recovered as sandy silty gravel).	4.20		20.53					
5.00- 5.45	B													
5.00- 5.19	D	5.00 (3.00)			S50/50									
6.00	D													
6.00- 6.19	D	6.00 (3.10)			S40/15									
6.19									18.54					
Core Run/Depth (Core Dia/Time)			Depth Cased / Type	TCR/SCR Max/Min	ROD %	SPT (F)	Continued by Rotary techniques General		Detail					
6.19- 7.00 (92mm)	6.00 (ADDED)	75 63	0.13 0.03	13	(AZCL)	Extremely weak to very weak thinly to widely bedded reddish brown medium to coarse grained SANDSTONE with closely to medium spaced thin to medium yellowish grey and bluish grey beds. Occasional subrounded to rounded clasts (6mm to 60mm) of quartzite, siltstone and sandstone. Discontinuities are subhorizontal to inclined (20 degrees), very closely to closely spaced, undulating and planar, rough, clean with occasional sand infill (up to 4mm).		Between 6.19m and 6.25m, assumed zone of core loss. Between 6.65m and 6.73m, non-intact. Recovered as sandy gravel. Between 7.00m and 7.35m, assumed zone of core loss. Between 7.75m and 8.50m, discontinuities are subvertical, extremely to very closely spaced, undulating and planar, rough, clean. Between 8.00m and 9.29m, assumed zone of core loss.						
7.00- 8.50 (92mm)	6.00 (ADDED)	76 53	0.14 0.02	17	(20)									
					(NI)									
					(12)									
					(AZCL)									
					(14)									
8.50-10.00 (92mm)	6.00 (ADDED)	47 27	0.16 0.03	19	(AZCL)			Between 9.40m and 9.65m, subvertical discontinuity, planar, rough, clean.						
					(13)									
					(AZCL)									
Boring			Progress					Groundwater						
Depth	Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose in	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	LG/LH	G.L.			04/05/21	08:00	26.50	6.00	3.00	20		Fast inflow.
6.00	0.20	Cable Percussion	LG/LH	6.19	6.00	3.00	04/05/21	18:00						
35.50	0.09	Rotary Core	JB/CB	6.19	6.00	3.60	14/05/21	08:00						
				16.00	6.00	3.70	14/05/21	18:00						
				16.00	6.00	2.90	17/05/21	08:00						
				35.50	6.00	3.00	17/05/21	18:00						
Remarks														
Inspection pit hand excavated to 1.20m depth and no services were found.														
ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.														
PAK marker spray used on tarmacadam - no PAHs detected (See photograph).														
PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.														
A 50mm standpipe was installed to 20.00m with a geowrapped slotted section from 3.00m to 20.00m with flush lockable protective cover. Backfill details from base of hole: bentonite seal up to 20.00m, gravel filter up to 3.00m, bentonite seal up to 0.20m, concrete up to														
All dimensions are in metres.														
Logged in accordance with BS5930:2015 A1:2020														
Logged by JP														
Figure 1 of 4 08/06/2021														
geotechnics														

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH106
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397817.9 E
392709.9 N

Ground Level 24.73 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	SPT N (Ft)	Description General	Description Detail	Depth	Legend	Level m OD
10.00-11.50 (92mm)	6.00 (ADDED)	92 70	0.16 0.04	57	(10)		Between 10.00m and 10.12m, assumed zone of core loss. At 10.35m, lamina of very weak reddish brown mudstone (up to 15mm). Between 11.00m and 11.66m, assumed zone of core loss.			
11.50-13.00 (92mm)	6.00 (ADDED)	89 62	0.21 0.03	13	(AZCL) (7) (20)		Between 11.95m and 12.24m, discontinuities are very closely spaced.			
13.00-14.50 (92mm)	6.00 (ADDED)	92 82	0.26 0.02	58	(AZCL) (9)	Extremely weak to very weak thinly to widely bedded bluish grey medium to coarse grained SANDSTONE with closely to medium spaced thin to medium reddish brown beds. Discontinuities are subhorizontal to inclined (20 degrees), very closely to medium spaced, undulating and planar, rough, clean.	Between 13.00m and 13.12m, assumed zone of core loss.	12.33		12.40
14.50-16.00 (92mm)	6.00 (ADDED)	82 59	0.15 0.04	25	(AZCL) (10)		Between 14.50m and 14.76m, assumed zone of core loss.			
16.00-17.50 (92mm)	6.00 (ADDED)	4.6 0	0.00 0.00	0	(AZCL)		Between 15.38m and 15.96m, subvertical discontinuity undulating, rough, clean. Between 15.80m and 16.00m, subvertical discontinuity, planar, rough, clean. Between 16.00m and 17.43m, assumed zone of core loss.			
17.50-19.00 (92mm)	6.00 (ADDED)	94 82	0.24 0.01	65	(NI) (AZCL) (NI) (8)		Between 17.43m and 17.50m, non-intact. Recovered as gravel. Between 17.50m and 17.58m, assumed zone of core loss. Between 17.58m and 17.64m, non-intact recovered as gravel.			
19.00-20.50 (92mm)	6.00 (ADDED)	66 36	0.15 0.02	19	(AZCL) (NI)	Extremely weak to very weak reddish brown occasionally mottled bluish grey medium to coarse grained SANDSTONE with occasional subrounded to rounded clasts (6mm to 60mm) of mudstone, siltstone, sandstone and quartzite.	Between 19.00m and 19.50m, assumed zone of core loss. Between 19.50m and 19.90m, non-intact. Recovered as gravel.	18.68		6.05

Drilling				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed
				35.50 0.00	6.00	3.90	18/05/21 18/05/21	08:00 18:00					

Remarks ☒ Ground level.
AGS Chiselling: 4.20-5.00m for 40 minutes and 5.00-6.00m for 60 minutes.
Flush: 6.19-35.50m, Air/Mist, 100% return.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JP

Figure 2 of 4
08/06/2021

geotechnics

BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH106
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid 397817.9 E
Coordinates 382709.9 N

Ground Level 24.73 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length	RQD	SPT N	Description General	Description Detail	Depth	Legend	Level m OD
					(14)	Rare lenticular clasts of reddish brown mudstone. Discontinuities are subhorizontal to inclined (degrees 20), very closely to medium spaced, undulating and planar, rough, clean.	Between 19.50m and 19.56m, vertical discontinuity, planar, rough, clean with orange staining. Between 20.50m and 20.77m, assumed zone of core loss. Between 20.77m and 21.05m, non-intact. Recovered as sandy gravel. Between 21.18m and 21.28m, two inclined (60 degrees) discontinuities, planar, rough, clean.			
20.50-22.00 (92mm)	6.00 (ADDED)	82 37	0.17 0.03	20	(AZCL) (NI)					
					(10)					
22.00-23.50 (92mm)	6.00 (ADDED)	44 34	0.22 0.06	22	(6)		Between 22.45m and 22.57m, many subangular to subrounded clasts (up to 60mm) of siltstone and quartzite. Between 22.57m and 25.31m, assumed zone of core loss. Between 23.31m and 23.41m, non-intact. Recovered as gravel. Between 23.50m and 24.25m, assumed zone of core loss.			
					(AZCL)		Between 24.25m and 24.55m, non-intact. Recovered as gravel. Between 24.55m and 24.65m, vertical discontinuity, planar, rough, clean.			
23.50-25.00 (92mm)	6.00 (ADDED)	50 26	0.19 0.02	13	(NI) (NI) (AZCL)		Between 25.00m and 25.50m, assumed zone of core loss. Between 25.50m and 25.90m, non-intact. Recovered as gravel.			
					(NI)					
					(9)					
25.00-26.50 (92mm)	6.00 (ADDED)	66 40	0.22 0.04	25	(AZCL)		Between 26.50m and 27.73m, assumed zone of core loss.			
					(NI)					
					(7)					
26.50-28.00 (92mm)	6.00 (ADDED)	18 13	0.10 0.03	6	(AZCL)		Between 27.73m and 27.90m, subvertical discontinuity, planar, rough, clean with brown staining. Between 28.00m and 28.05m, assumed zone of core loss.			
					(16)					
28.00-29.50 (92mm)	6.00 (ADDED)	96 81	0.31 0.03	66	(AZCL)			28.05		-3.32
					(6)	Extremely weak to very weak thinly to widely bedded grey occasionally mottled reddish brown medium to coarse grained SANDSTONE with closely to medium spaced very thin to medium reddish brown beds. Occasional subrounded clasts (6mm to 35mm) of reddish brown	Between 28.80m and 28.95m, many subrounded clasts (6mm to 60mm) of quartzite. Between 29.50m and 29.58m, assumed zone of core loss.			
29.50-31.00 (92mm)	6.00 (ADDED)	94 87	0.26 0.04	72	(AZCL)					

Drilling				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JP

Figure 3 of 4
08/06/2021



BOREHOLE RECORD - Cable Percussion and Rotary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole BH106
Project No PN214217

Client RENAKER BUILD LIMITED

National Grid 397817.9 E
Coordinates 382709.9 N

Ground Level 24.73 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length	RQD	SPT N	Description General	Description Detail	Depth	Legend	Level m OD
		TCR/SCR% Max/Min		%	(F)					
					(5)	mudstone. Discontinuities are subhorizontal to inclined (20 degrees), closely to medium spaced, planar and undulating, rough, clean with some clay infill (up to 5mm) and occasional orangish brown staining,	Between 30.25m and 30.35m, inclined (45 degrees) discontinuity, planar, rough, clean with orangish brown staining. Between 31.00m and 31.04m, assumed zone of core loss. Between 31.04m and 31.14m, subvertical discontinuity, planar, rough, clean. Between 31.14m and 31.40m, non-intact. Recovered as gravel. Between 31.40m and 31.50m, inclined (60 degrees) discontinuity, planar, rough with some clay smear. At 31.84, laminae (up to 5mm) of reddish brown mudstone. Between 32.50m and 32.60m, assumed zone of core loss.			
31.00-32.50 (92mm)	6.00 (ADDED)	97 63	0.27 0.07	42	(AZCL) (20) (NI) (6)					
32.50-34.00 (92mm)	6.00 (ADDED)	93 79	0.21 0.03	48	(AZCL) (7)					
34.00-35.50 (92mm)	6.00 (ADDED)	94 90	0.35 0.09	69	(AZCL) (6)		Between 34.00m and 34.08m, assumed zone of core loss.			
						End of Borehole		35.50		-10.77

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks 

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JP

Figure 4 of 4
08/06/2021



BOREHOLE RECORD - Dynamic Sampler

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No WS101
PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397723.0 E
382661.0 N

Ground Level 24.91 m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (In Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD
0.20	D					MADE GROUND: Black tarmacadam.	G.L.		24.91
0.20	ES						0.10		24.81
0.20			PID=0.0			MADE GROUND: Grey and brown sandy silty angular to subangular fine to coarse gravel of limestone (Sub base).	0.50		24.41
0.50	D						0.90		24.01
0.50	ES		PID=0.0			MADE GROUND: Dark brown, black occasionally reddish brown fine to medium sand and angular to subangular fine to coarse gravel of ash and brick fragments. Medium cobble content.			
1.00	D		PID=0.0						
1.00	ES								
1.00									
1.20- 1.65	D	1.20 (DRY)			S3	MADE GROUND: Very loose black fine to medium sand and angular to subangular fine to coarse gravel of ash and tarmacadam.	1.60		23.31
1.40	D								
2.00- 2.45	D	2.00 (DRY)			S0/450	Very soft brown very sandy CLAY. Between 2.00m and 2.45m, SPT gear sank under own weight.			
2.50- 3.00	B								
2.50	D								
3.00- 3.45	D	2.00 (DRY)			S3				
3.50- 4.00	B						3.50		21.41
3.80	D					Medium dense brown very clayey fine SAND.			
4.00- 4.45	D	2.00 (DRY)			S27				
4.50- 4.63	B								
4.50	D						4.60		20.31
4.60- 4.63	D	2.00 (DRY)			S50/20	Very dense reddish brown fine to medium SAND (Weathered sandstone). At 4.60m, dynamic sample barrel bouncing.	4.63		20.28
						End of Borehole			

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	DS/KR	G.L.			29/04/21	10:00						None encountered.
4.60	0.10	Dynamic Sampler	DS/KR	4.63	2.00	DRY	29/04/21	12:00						

Remarks Inspection pit hand excavated to 1.20m depth and no services were found. ES sample = 1 x 1kg plastic tub, 2 x 250ml amber glass jars and 2 x 60ml VOC vials. PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm. Dynamic Sample Borehole WS101 terminated at 4.63m depth within weathered sandstone. A 50mm standpipe was installed to 1.60m with a geowrapped slotted section from 0.50m to 1.60m with flush lockable protective cover. Backfill details from base of hole: bentonite seal up to 1.60m, gravel filter up to 0.50m, bentonite seal up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by TM

Figure 1 of 1
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geotechnics

Sampling			Properties		Strata		Scale 1:50					
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD			
0.00 - 0.10	D					MADE GROUND: Black tarmacadam. Between 0.00m and 0.10m, PAK marker spray test. No PAHs detected.	G.L.		25.58			
0.30 - 0.70	B						0.10		25.48			
0.30 - 0.50	D						0.40		25.19			
0.30	ES		PID=0.0				0.70		24.89			
0.50	ES		PID=0.0				0.90		24.69			
0.70 - 0.90	D					MADE GROUND: Black occasionally reddish brown fine to medium sand and angular to subangular fine to coarse gravel of ash, tarmacadam and brick fragments.						
1.00	ES		PID=0.0									
1.20 - 1.80	B				S7	MADE GROUND: Soft orangish brown occasionally black slightly gravelly clay. Gravel is angular to subangular fine to coarse of ash and clinker.	1.80		23.79			
1.20 - 1.65	D	1.20 (DRY)				Soft orangish brown slightly sandy CLAY,						
1.80 - 2.00	D				S9	Loose yellowish brown silty fine SAND.						
2.00 - 2.90	B											
2.00 - 2.45	D	2.00 (DRY)										
2.90 - 3.00	D				S50	Very dense yellowish brown gravelly fine to coarse SAND. Gravel is subrounded fine to medium of sandstone.	2.90		22.69			
3.00 - 3.45	D	2.00 (DRY)				End of Borehole	3.45		22.14			

DRAFT

Boring				Progress				Groundwater						
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	In Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	JR/DS	G.L.			29/04/21	13:00						None encountered.
3.00	0.10	Dynamic Sampler	JR/DS	3.45	2.00	DRY	29/04/21	15:00						

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
 ES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.
 PAK marker spray used on tarmacadam - no PAHs detected (See photograph).
 PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.
 A 50mm standpipe was installed to 3.00m with a geowrapped slotted section from 1.50m to 3.00m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 1.50m, bentonite seal up to 0.20m, concrete up to ground level.
 Logged in accordance with BS5930:2015 A1:2020

Symbols and abbreviations are explained on the accompanying key sheet.
 All dimensions are in metres.

Logged by TM
 Figure 1 of 1
 08/05/2021

BOREHOLE RECORD - Dynamic Sampler

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No WS103
PN214217

Client RENAKER BUILD LIMITED

Grid Coordinates 397758.6 E
382692.8 N

Ground Level 25.12 m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (In Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD
0.00 - 0.07	D		PID=0.0			MADE GROUND: Black tarmacadam. Between 0.00m and 0.07m, PAK marker spray test. No PAHs detected.	G.L.		25.12
0.07 - 0.20	ES						0.07		25.05
0.20 - 0.50	B						0.17		24.95
0.50 - 0.60	ES						0.37		24.75
0.60 - 0.80	B		PID=1.47			MADE GROUND: Grey slightly sandy silty angular to subangular fine to coarse gravel of limestone (Sub base).	0.50		24.62
0.80 - 1.20	B						0.80		24.32
1.20 - 1.00	ES		PID=0.0			MADE GROUND: Grey sandy silt.			
1.00 - 1.20	B						1.20		23.92
1.20 - 1.65	D	1.20 (DRY)			S9	MADE GROUND: Brown sandstone cobble setts (Old road surface).			
1.65 - 1.80	D								
1.80 - 2.00	ES				S10	MADE GROUND: Dark brown occasionally black and reddish brown gravelly slightly silty fine to medium sand. Gravel is angular to subangular fine to coarse of ash, clinker and brick fragments. Between 0.50m and 0.80m, slight hydrocarbon odour.			
2.00 - 2.45	D	2.00 (DRY)					2.50		22.62
2.45 - 2.75						MADE GROUND: Orangish brown slightly gravelly slightly silty fine sand. Gravel is angular to subangular fine to coarse of brick fragments.			
2.75 - 4.00	B				S31	Loose to medium dense orangish brown silty fine to medium SAND.			
4.00 - 4.11	D	2.00 (DRY)			S50/30	Dense orangish brown sandy slightly silty subangular to rounded fine to medium GRAVEL of various lithologies.	4.00		21.12
						Very dense orangish brown sandy slightly silty subangular to rounded fine to medium GRAVEL of various lithologies.	4.11		21.01
						At 4.11m, obstruction - possible cobble/boulder or bedrock.			
						End of Borehole			

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	JR/DS	G.L.			04/05/21	08:00						None encountered.
4.00	0.10	Dynamic Sampler	JR/DS	4.11	2.00	DRY	04/05/21	10:00						

Remarks Inspection pit hand excavated to 1.20m depth and no services were found.
 ASES sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.
 PAK marker spray used on tarmacadam - no PAHs detected (See photograph).
 PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.
 Dynamic Sample Borehole WS103 terminated at 4.11m on encountering an obstruction - possible cobble/boulder or bedrock.
 Backfill details from base of hole: bentonite seal up to 0.20m, concrete up to ground level.
 Logged in accordance with BS5930:2015 A1:2020

Logged by JG/JF
 Figure 1 of 1
 08/05/2021

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BOREHOLE RECORD - Dynamic Sampler

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No **WS104**
PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397799.0 E
382715.0 N

Ground Level 25.10 m OD

Sampling		Properties		Strata		Scale 1:50	
Depth	Sample Type	Depth Cased & (in Water)	Strength kPa	w %	Description	Depth	Level m OD
0.20	D				MADE GROUND: Dark grey tarmacadam.	G.L.	25.10
0.50	D				MADE GROUND: Grey occasionally black and reddish brown gravelly silty fine to coarse sand with a medium cobble content. Gravel is angular fine to coarse of ash, sandstone, concrete and brick fragments. Occasional wood fragments (up to 100mm).	0.12	24.98
					MADE GROUND: Light grey concrete.	0.45	24.65
					End of Borehole	1.15	23.95

Boring				Progress				Groundwater			
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to
1.15	0.40	Inspection Pit	JR/DS	G.L.			04/05/21	13:00			
				1.15		DRY	04/05/21	15:00			

Remarks Inspection pit hand excavated to 1.15m depth and no services were found.
 ABS sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.
 On the Engineer's instruction inspection pit terminated at 1.15m depth within concrete obstruction - dynamic sampling rig moved to location of WS104A.
 Backfill details from base of hole: arisings up to ground level.

Logged by JG/JF

Figure 1 of 1
08/06/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

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BOREHOLE RECORD - Dynamic Sampler

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No WS104A
PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 302714.9 E
397798.5 N

Ground Level 27.09 m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (in Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD
0.15- 1.10	B					MADE GROUND: Black tarmacadam.	G.L.		27.09
0.20	ES						0.08		27.01
0.20			PID=0.0			MADE GROUND: Grey occasionally reddish brown very gravelly slightly silty fine to coarse sand. Gravel is angular fine to coarse of sandstone, concrete, tarmacadam and brick fragments.	0.15		26.94
0.40	D								
0.50	ES		PID=0.0						
0.50						MADE GROUND: Light grey slightly gravelly slightly silty fine sand. Gravel is angular fine to coarse of brick fragments.			
1.10	ES		PID=0.0			At 0.50m, layer of bricks (100mm thick).	1.10		25.99
1.10									
1.20- 1.85	B								
1.20- 1.65		1.20 (DRY)			S11				
1.85- 2.00	B					MADE GROUND: Medium dense dark brown occasionally black and reddish brown very gravelly silty fine to coarse sand. Gravel is angular fine to coarse of ash, sandstone, concrete and brick fragments.			
2.00- 2.39	D	2.00 (DRY)			S50/235				
						At 2.39m, obstruction - possible cobble/boulder.	2.39		24.70
						End of Borehole			

Boring				Progress					Groundwater				
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed
1.20	0.40	Inspection Pit	JR/DS	G.L.			05/05/21	13:00					
2.00	0.10	Dynamic Sampler	JR/DS	2.39	2.00	DRY	05/05/21	15:00					

Remarks Inspection pit hand excavated to 1.20m depth and no services were found. ES sample = 1 x 1kg plastic tub, 2 x 250ml amber glass jars and 2 x 60ml VOC vials. PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm. Dynamic Sample Borehole WS104A terminated at 2.39m depth on encountering an obstruction - possible cobble/boulder. A 50mm standpipe was installed to 2.00m with a geowrapped slotted section from 0.50m to 2.00m with flush lockable protective cover. Backfill details from base of hole: gravel filter up to 0.50m, bentonite seal up to 0.20m, concrete up to ground level.

Logged by JP

Figure 1 of 1
08/06/2021

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Logged in accordance with BS5930:2015 A1:2020

BOREHOLE RECORD - Dynamic Sampler

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No WS108
PN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 397859.1 E
382839.6 N

Ground Level 26.03 m OD

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (In Water)	Strength kPa	w %	SPT N	Description	Depth	Legend	Level m OD
0.25- 0.85	B		PID=0.0			MADE GROUND: Black tarmacadam.	G.L.		26.03
0.20							0.10		25.93
0.30	ES					MADE GROUND: Grey sandy slightly silty angular to subangular fine to coarse gravel of limestone (Sub base).	0.25		25.78
0.50	ES		PID=0.0						
0.50									
0.85- 1.20	B					MADE GROUND: Brown occasionally black and reddish brown sandy angular to subangular fine to coarse gravel of clinker and brick fragments.	0.85		25.18
1.00	ES		PID=0.0						
1.00									
1.20- 1.65	D	1.20 (DRY)			S8	MADE GROUND: Yellowish brown occasionally black and reddish brown slightly gravelly fine to medium sand. Gravel is angular to subangular fine to coarse of clinker and brick fragments.	1.20		24.83
1.40- 1.55	D								
1.40	ES		PID=0.0				1.60		24.43
1.40									
1.65- 1.80	D						1.85		24.18
1.85- 3.40	B					MADE GROUND: Soft to firm reddish brown mottled brown slightly gravelly sandy clay. Gravel is angular to subrounded fine of siltstone, sandstone, coal and brick fragments.			
1.85- 2.00	D								
2.00- 2.45	D	2.00 (DRY)			S9	Soft reddish brown slightly sandy CLAY.			
3.00- 3.45	D	2.00 (3.00)			S31	Loose orangish brown fine to medium SAND with some pockets (up to 50mm) of silt.	3.00		23.03
3.40- 5.00	B					Dense becoming very dense reddish brown very gravelly fine to coarse SAND with occasional pockets (up to 50mm) of silt. Gravel is subrounded to rounded fine to coarse of mudstone, siltstone, sandstone and coal.			
3.80- 4.00	D					At 3.35m, orange.			
4.00- 4.45	D	2.00 (3.00)			S33				
5.00- 5.45	D	2.00 (3.00)			S50				
						End of Borehole	5.45		20.58

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.40	Inspection Pit	JR/DS	G.L.			30/04/21	15:00	3.00					Slow inflow. No rise.
5.00	0.10	Dynamic Sampler	JR/DS	1.20		DRY	30/04/21	14:00						
				1.20		DRY	04/05/21	10:00						
				5.45	2.00	DRY	04/05/21	12:00						

Remarks Inspection pit hand excavated to 1.20m depth and no services were found.
 ABS sample = 1 x 1kg plastic tub, 2 x 258ml amber glass jars and 2 x 60ml VOC vials.
 PID = Photo-ionisation detector reading measuring Total Volatile Organic Compounds (VOC) concentration in ppm.
 Backfill details from base of hole: bentonite seal up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JG/JF
 Figure 1 of 1
 08/06/2021

geotechnics

BOREHOLE RECORD - Rotary Core

Preliminary

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole Project No BH103A
FN214217

Client RENAKER BUILD LIMITED

National Grid Coordinates 382717.7 E
397728.3 N

Ground Level 27.77 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50						
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type	Length Max/Min	RQD %	(FI)	Description General	Description Detail	Depth	Legend	Level m OD				
						**OPEN HOLE DRILLING.		G.L.		27.77				
7.50-9.00 (92mm)	7.50 (ADDED)	100 66	0.11 0.02	14	(18) (>30) (11)	Extremely weak yellowish brown slightly silty fine to medium grained SANDSTONE. Discontinuities are horizontal to subhorizontal, very closely to closely spaced, planar, rough.	Between 7.50m and 7.70m, vertical discontinuity, undulating, rough, clean. At 7.75m, reddish brown. Between 8.00m and 9.00m, occasional subrounded fine to coarse inclusions of mudstone. Between 8.00m and 8.15, discontinuities are randomly oriented, very closely to closely spaced. At 8.70m, band of mudstone (30mm thick). Between 9.40m and 10.30m, discontinuities are closely to medium spaced.	7.50		20.27				
9.00-10.30 (76mm)	9.00 (ADDED)	100 85	0.29 0.04	51	(>30) (20) (5) (10)									
Drilling						Progress			Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
9.00	0.09	Rotary Core	JB/CS	G.L.			21/05/21	08:00				20		None encountered.
12.00	0.08	Rotary Core	JB/CS	9.00	9.00	3.60	21/05/21	18:00						
				9.00	9.00	2.70	24/05/21	08:00						
				12.00	9.00	2.90	24/05/21	18:00						
Remarks High Pressure Dilatometer (HPD) Tests carried out by In Situ Ground Investigation Limited at 10.00m. Backfill details from base of hole: bentonite up to ground level. Flush: 7.50-12.00m, Air/Mist, 100% return. Symbols and abbreviations are explained on the accompanying key sheet. All dimensions are in metres.														
Logged in accordance with BS5930:2015 A1:2020												Logged by JP Figure 1 of 2 03/06/2021 		

Project TRINITY ISLANDS

Engineer WSP UK LIMITED

Borehole	BH103A
Project No	PN214217

Client RENAKER BUILD LIMITED

National Grid	382717.7	E
Coordinates	397728.3	N

Ground Level 27.77 m OD

Drilling		Properties/Sampling				Strata		Scale 1:50		
Core Run/Depth (Core Dia/Time)	Depth Cased & (to Water)	Type TCR/SCR%	Length Max/Min	ROD %	(FI)	Description General	Description Detail	Depth	Legend	Level m OD
10.30-12.00 (76mm)	9.00 (ADDED)	66 52	0.12 0.05	8	(AZCL)		Between 9.10m and 9.18m, some vertical discontinuities, extremely closely to closely spaced, planar, rough. At 9.40m, vertical discontinuity, planar, rough, clean. Between 10.30m and 10.40m, inclined (70 degrees) discontinuity, undulating, rough, clean. Between 10.50m and 11.00m, assumed zone of core loss. At 11.20m, rounded medium inclusion of siltstone. Between 10.20m and 10.30m, subvertical discontinuity, undulating, rough, clean. Between 11.65m and 11.75m, fine grained. Between 11.70m and 11.80m, inclined (70 degrees) discontinuity, undulating, rough, clean. Between 11.90m and 12.00m, inclined (45 degrees) discontinuity, undulating, rough, clean.	12.00		15.77
						End of Borehole				

Drilling				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks	
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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 A1:2020

Logged by JP

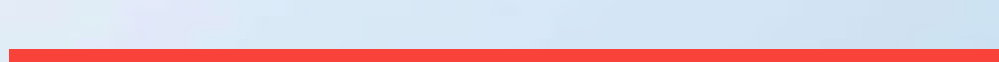
Figure 2 of 2
08/06/2021



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Appendix D

EXTRACTED CHEMICAL DATA





Certificate of Analysis

Certificate Number 21-09486-1

Issued: 08-Jun-21

Client Geotechnics LTD
The Geotechnical Centre
Unit 1B Borders Ind. Park
River Lane
Saltney
Chester
CH4 8RJ

Our Reference 21-09486-1-1

Client Reference PN214217

Order No ON29691

Contract Title Trinity Islands

Description 37 Soil samples, 2 Leachate samples.

Date Received 06-May-21

Date Started 06-May-21

Date Completed 08-Jun-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "A. Fenwick", is placed over a light blue rectangular background.

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1842917	1842918	1842919	1842920	1842921
Sample ID	BH101	BH102	BH102	BH103	BH104
Depth	0.20	0.15	1.00	0.50	0.20
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	28/04/2021	28/04/2021	28/04/2021	26/04/2021	26/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%					
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	8.4	6.0	17	54	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	1.0	0.2	0.6	0.5
Chromium	DETSC 2301#	0.15	mg/kg	14	6.1	14	21	4.1
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	120	13	58	190	9.9
Lead	DETSC 2301#	0.3	mg/kg	470	64	1000	800	15
Mercury	DETSC 2325#	0.05	mg/kg	0.49	0.78	< 0.05	< 0.05	0.14
Nickel	DETSC 2301#	1	mg/kg	24	5.9	18	56	5.2
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	110	53	65	300	22
Inorganics								
pH	DETSC 2008#		pH	9.1	9.2	7.8	6.9	9.2
Total Organic Carbon	DETSC 2084#	0.5	%	4.2	6.0	3.9	28	5.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l					



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1842917	1842918	1842919	1842920	1842921
Sample ID	BH101	BH102	BH102	BH103	BH104
Depth	0.20	0.15	1.00	0.50	0.20
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	28/04/2021	28/04/2021	28/04/2021	26/04/2021	26/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	11	15	< 1.2	< 1.2	5.5
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	54	140	< 1.5	< 1.5	81
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	740	1500	< 3.4	< 3.4	1200
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	170	230	< 3.4	< 3.4	270
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	880	1700	< 10	< 10	1400
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	810	1600	< 10	< 10	1200
Aliphatic C5-C44	DETSC 3072*	10	mg/kg	970	1900	< 10	< 10	1500
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	2.6	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	21	25	< 0.5	< 0.5	8.8
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	110	190	< 0.6	< 0.6	150
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	1000	1600	< 1.4	< 1.4	1700
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	600	740	< 1.4	< 1.4	710
Aromatic C5-C35	DETSC 3072*	10	mg/kg	1200	1800	< 10	< 10	1800
Aromatic C10-C44	DETSC 3072*	10	mg/kg	1600	2400	< 10	< 10	2400
Aromatic C5-C44	DETSC 3072*	10	mg/kg	1800	2500	< 10	< 10	2500
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	2000	3400	< 10	< 10	3100
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	2500	4200	< 10	< 10	3800
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1842917	1842918	1842919	1842920	1842921
Sample ID	BH101	BH102	BH102	BH103	BH104
Depth	0.20	0.15	1.00	0.50	0.20
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	28/04/2021	28/04/2021	28/04/2021	26/04/2021	26/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.26	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.34	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.39	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.28	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	3.2	0.32	0.12	< 0.03	0.11
Anthracene	DETSC 3303	0.03	mg/kg	1.2	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	6.6	0.21	0.15	< 0.03	0.37
Pyrene	DETSC 3303#	0.03	mg/kg	6.5	0.35	0.17	< 0.03	0.59
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	3.0	0.33	0.10	< 0.03	0.54
Chrysene	DETSC 3303	0.03	mg/kg	2.6	0.21	0.05	< 0.03	0.26
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	11	0.47	0.07	< 0.03	0.75
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	3.4	0.11	< 0.03	< 0.03	0.17
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	12	0.46	0.06	< 0.03	0.65
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	7.5	0.04	< 0.03	< 0.03	0.10
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	2.2	0.03	< 0.03	< 0.03	0.06
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	12	0.10	< 0.03	< 0.03	0.18
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	72	2.6	0.71	< 0.10	3.8
Phenols								
Cresols	DETSC 3451*	0.5	mg/kg					
Naphthols	DETSC 3451*	0.5	mg/kg					
Phenol	DETSC 3451*	0.5	mg/kg					
Resorcinol	DETSC 3451*	0.5	mg/kg					
Trimethylphenol	DETSC 3451*	0.5	mg/kg					
Xylenols & Ethylphenols	DETSC 3451*	0.5	mg/kg					
Phenols, Total	DETSC 3451*	5	mg/kg					

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1842922	1842923	1842924	1842925	1842926
Sample ID	BH104	BH105	WS101	WS101	WS101
Depth	0.50	0.20	0.20	0.50	1.00
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/04/2021	26/04/2021	29/04/2021	29/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%					
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	4.3	16	8.1	94	85
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.9	0.6	0.6	0.6
Chromium	DETSC 2301#	0.15	mg/kg	7.9	8.4	9.0	21	18
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	15	32	35	280	260
Lead	DETSC 2301#	0.3	mg/kg	30	69	130	520	320
Mercury	DETSC 2325#	0.05	mg/kg	0.14	0.18	0.42	0.37	0.26
Nickel	DETSC 2301#	1	mg/kg	7.6	9.5	19	63	54
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.7	< 0.5
Zinc	DETSC 2301#	1	mg/kg	29	59	72	200	170
Inorganics								
pH	DETSC 2008#		pH	11.7	9.5	8.9	7.3	7.2
Total Organic Carbon	DETSC 2084#	0.5	%	0.5	6.6	5.9	34	31
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l					1100



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1
 Client Ref PN214217
 Contract Title Trinity Islands

Lab No	1842922	1842923	1842924	1842925	1842926
Sample ID	BH104	BH105	WS101	WS101	WS101
Depth	0.50	0.20	0.20	0.50	1.00
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/04/2021	26/04/2021	29/04/2021	29/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	21	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	41	44	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	640	280	< 3.4	< 3.4
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	260	120	< 3.4	< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10	870	420	< 10	< 10
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	680	340	< 10	< 10
Aliphatic C5-C44	DETSC 3072*	10	mg/kg	< 10	940	460	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	15	2.9	3.7
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	10	150	46	42
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	74	390	160	160
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	950	920	120	310
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4	690	580	< 1.4	270
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	1000	1500	330	510
Aromatic C10-C44	DETSC 3072*	10	mg/kg	< 10	1600	1900	240	620
Aromatic C5-C44	DETSC 3072*	10	mg/kg	< 10	1700	2100	330	780
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	1700	1800	330	510
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	< 10	2500	2400	240	620
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1842922	1842923	1842924	1842925	1842926
Sample ID	BH104	BH105	WS101	WS101	WS101
Depth	0.50	0.20	0.20	0.50	1.00
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/04/2021	26/04/2021	29/04/2021	29/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06	7.1	0.98	0.67
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	19	3.2	3.3
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	15	3.5	3.5
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.06	8.9	2.5	2.9
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.08	0.50	45	15	20
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.11	12	0.19	4.3
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.23	1.0	56	14	13
Pyrene	DETSC 3303#	0.03	mg/kg	0.24	1.3	47	14	11
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.15	0.78	21	5.7	6.0
Chrysene	DETSC 3303	0.03	mg/kg	0.08	0.28	14	3.8	4.0
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.15	0.98	18	5.0	5.2
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	0.23	6.7	1.7	1.7
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.12	0.84	14	3.9	4.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.11	4.7	1.0	1.2
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	1.3	0.32	0.38
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04	0.17	5.1	1.2	1.4
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.1	6.6	300	76	82
Phenols								
Cresols	DETSC 3451*	0.5	mg/kg					
Naphthols	DETSC 3451*	0.5	mg/kg					
Phenol	DETSC 3451*	0.5	mg/kg					
Resorcinol	DETSC 3451*	0.5	mg/kg					
Trimethylphenol	DETSC 3451*	0.5	mg/kg					
Xylenols & Ethylphenols	DETSC 3451*	0.5	mg/kg					
Phenols, Total	DETSC 3451*	5	mg/kg					

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1842927	1842928	1845669	1845670	1845671
Sample ID	WS105	WS105	BH103	BH104	WS102
Depth	0.50	2.80	0.20	1.00	0.50
Other ID					
Sample Type	SOIL	SOIL	ES	ES	ES
Sampling Date	29/04/2021	29/04/2021	26/04/2021	26/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%					
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	22	27			81
Cadmium	DETSC 2301#	0.1	mg/kg	5.5	0.3			0.6
Chromium	DETSC 2301#	0.15	mg/kg	16	25			22
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0			< 1.0
Copper	DETSC 2301#	0.2	mg/kg	180	90			250
Lead	DETSC 2301#	0.3	mg/kg	190	280			450
Mercury	DETSC 2325#	0.05	mg/kg	0.14	0.43			3.7
Nickel	DETSC 2301#	1	mg/kg	40	24			39
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5			1.1
Zinc	DETSC 2301#	1	mg/kg	720	93			160
Inorganics								
pH	DETSC 2008#		pH	10.4	7.5			7.5
Total Organic Carbon	DETSC 2084#	0.5	%	22	10			25
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l				1600	

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1
 Client Ref PN214217
 Contract Title Trinity Islands

Lab No	1842927	1842928	1845669	1845670	1845671
Sample ID	WS105	WS105	BH103	BH104	WS102
Depth	0.50	2.80	0.20	1.00	0.50
Other ID					
Sample Type	SOIL	SOIL	ES	ES	ES
Sampling Date	29/04/2021	29/04/2021	26/04/2021	26/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5			< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2			< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5			< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4			< 3.4
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4			< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10			< 10
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10			
Aliphatic C5-C44	DETSC 3072*	10	mg/kg	< 10	< 10			< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	8.0	12			< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	25	48			< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	70	180			< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	130	300			< 1.4
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4	34			< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	240	540			
Aromatic C10-C44	DETSC 3072*	10	mg/kg	200	420			< 10
Aromatic C5-C44	DETSC 3072*	10	mg/kg	240	570			< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	240	540			
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	200	420			< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01			< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01			< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01			< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01			< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1842927	1842928	1845669	1845670	1845671
Sample ID	WS105	WS105	BH103	BH104	WS102
Depth	0.50	2.80	0.20	1.00	0.50
Other ID					
Sample Type	SOIL	SOIL	ES	ES	ES
Sampling Date	29/04/2021	29/04/2021	26/04/2021	26/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.11	3.4	< 0.03		< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.31	4.0	< 0.03		< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.32	3.9	< 0.03		< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.24	5.5	< 0.03		< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	2.9	18	0.05		0.17
Anthracene	DETSC 3303	0.03	mg/kg	0.62	7.9	< 0.03		0.04
Fluoranthene	DETSC 3303#	0.03	mg/kg	5.8	14	0.10		0.87
Pyrene	DETSC 3303#	0.03	mg/kg	6.4	15	0.13		1.1
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.8	4.4	0.13		0.77
Chrysene	DETSC 3303	0.03	mg/kg	2.0	3.2	0.07		0.46
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	3.1	2.3	0.14		0.84
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.93	0.72	0.04		0.26
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	2.6	2.0	0.12		0.59
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.86	0.50	0.06		0.19
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.28	0.17	< 0.03		0.06
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	1.2	0.71	0.08		0.24
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	30	85	0.92		5.6
Phenols								
Cresols	DETSC 3451*	0.5	mg/kg			< 0.50		
Naphthols	DETSC 3451*	0.5	mg/kg			< 0.50		
Phenol	DETSC 3451*	0.5	mg/kg			< 0.50		
Resorcinol	DETSC 3451*	0.5	mg/kg			< 0.50		
Trimethylphenol	DETSC 3451*	0.5	mg/kg			< 0.50		
Xylenols & Ethylphenols	DETSC 3451*	0.5	mg/kg			< 0.50		
Phenols, Total	DETSC 3451*	5	mg/kg			< 5.0		

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845672	1845673	1845674	1845675	1845676
Sample ID	WS102	WS106	WS107	WS107	WS108
Depth	1.00	0.30	0.50	1.70	0.30
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	29/04/2021	05/05/2021	05/05/2021	05/05/2021	04/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%					
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	9.2	25	34	13	19
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.3	0.8	0.3	0.7
Chromium	DETSC 2301#	0.15	mg/kg	17	20	16	9.3	8.8
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	26	130	140	22	130
Lead	DETSC 2301#	0.3	mg/kg	30	320	230	22	8400
Mercury	DETSC 2325#	0.05	mg/kg	0.18	2.8	0.40	0.20	0.50
Nickel	DETSC 2301#	1	mg/kg	14	38	22	14	19
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	54	72	530	46	400
Inorganics								
pH	DETSC 2008#		pH	7.4	7.4	8.0	8.1	7.8
Total Organic Carbon	DETSC 2084#	0.5	%	0.5	19	5.9	0.8	15
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l				12	



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1
 Client Ref PN214217
 Contract Title Trinity Islands

Lab No	1845672	1845673	1845674	1845675	1845676
Sample ID	WS102	WS106	WS107	WS107	WS108
Depth	1.00	0.30	0.50	1.70	0.30
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	29/04/2021	05/05/2021	05/05/2021	05/05/2021	04/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	2.3	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	6.7	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	9.9	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	67	< 3.4	< 3.4	< 3.4
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	11	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10	83	< 10	< 10	< 10
Aliphatic C5-C35	DETSC 3072*	10	mg/kg					
Aliphatic C5-C44	DETSC 3072*	10	mg/kg	< 10	97	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	20	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	140	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	490	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	550	< 1.4	< 1.4	< 1.4
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4	78	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg					
Aromatic C10-C44	DETSC 3072*	10	mg/kg	< 10	1100	< 10	< 10	< 10
Aromatic C5-C44	DETSC 3072*	10	mg/kg	< 10	1300	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg					
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	< 10	1200	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845672	1845673	1845674	1845675	1845676
Sample ID	WS102	WS106	WS107	WS107	WS108
Depth	1.00	0.30	0.50	1.70	0.30
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	29/04/2021	05/05/2021	05/05/2021	05/05/2021	04/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	17	0.06	< 0.03	0.04
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	15	0.12	< 0.03	0.07
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	13	0.11	< 0.03	0.06
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	13	0.11	< 0.03	0.06
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	69	0.88	< 0.03	0.57
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	19	0.23	< 0.03	0.11
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	50	0.77	< 0.03	0.88
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	57	0.82	< 0.03	0.99
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	20	0.41	< 0.03	0.55
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	15	0.26	< 0.03	0.37
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	11	0.36	< 0.03	0.53
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	3.7	0.14	< 0.03	0.18
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	8.8	0.32	< 0.03	0.43
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.6	0.10	< 0.03	0.16
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 1.00	0.03	< 0.03	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	2.8	0.13	< 0.03	0.19
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	310	4.8	< 0.10	5.2
Phenols								
Cresols	DETSC 3451*	0.5	mg/kg					
Naphthols	DETSC 3451*	0.5	mg/kg					
Phenol	DETSC 3451*	0.5	mg/kg					
Resorcinol	DETSC 3451*	0.5	mg/kg					
Trimethylphenol	DETSC 3451*	0.5	mg/kg					
Xylenols & Ethylphenols	DETSC 3451*	0.5	mg/kg					
Phenols, Total	DETSC 3451*	5	mg/kg					

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845677	1845678	1845679	1845680	1845681
Sample ID	WS104A	WS104A	BH106	BH106	BH109
Depth	0.30	1.10	0.15	0.50	0.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	04/05/2021	04/05/2021	06/05/2021	06/05/2021	30/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%					
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	120	93		74	24
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	2.3		0.6	0.6
Chromium	DETSC 2301#	0.15	mg/kg	27	100		22	16
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	70	430		590	160
Lead	DETSC 2301#	0.3	mg/kg	38	1000		530	290
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.44		0.73	0.63
Nickel	DETSC 2301#	1	mg/kg	31	36		60	35
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5		< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	54	550		270	140
Inorganics								
pH	DETSC 2008#		pH	8.9	10.8		8.0	7.8
Total Organic Carbon	DETSC 2084#	0.5	%	1.2	4.8		13	7.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		80			



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1
 Client Ref PN214217
 Contract Title Trinity Islands

Lab No	1845677	1845678	1845679	1845680	1845681
Sample ID	WS104A	WS104A	BH106	BH106	BH109
Depth	0.30	1.10	0.15	0.50	0.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	04/05/2021	04/05/2021	06/05/2021	06/05/2021	30/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5		2.4	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2		9.8	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	18		14	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	130		60	< 3.4
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	27		7.0	< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10	150		76	< 10
Aliphatic C5-C35	DETSC 3072*	10	mg/kg					
Aliphatic C5-C44	DETSC 3072*	10	mg/kg	< 10	170		93	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9		9.7	2.1
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5		78	5.4
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6		270	41
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4		310	53
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4	< 1.4		33	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg					
Aromatic C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10		570	88
Aromatic C5-C44	DETSC 3072*	10	mg/kg	< 10	< 10		700	100
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg					
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	< 10	150		650	88
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1
 Client Ref PN214217
 Contract Title Trinity Islands

Lab No	1845677	1845678	1845679	1845680	1845681
Sample ID	WS104A	WS104A	BH106	BH106	BH109
Depth	0.30	1.10	0.15	0.50	0.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	04/05/2021	04/05/2021	06/05/2021	06/05/2021	30/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 1.00	2.4	0.54
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.08	< 1.00	5.6	1.1
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06	< 1.00	5.0	1.0
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.05	< 1.00	3.4	0.88
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.53	< 1.00	18	8.1
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.11	< 1.00	4.8	1.4
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.06	0.95	< 1.00	21	7.1
Pyrene	DETSC 3303#	0.03	mg/kg	0.07	0.96	< 1.00	24	7.1
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.09	0.46	< 1.00	9.1	2.8
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.31	< 1.00	6.0	2.0
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	0.45	< 1.00	6.8	2.7
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.13	< 1.00	2.2	0.83
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.33	< 1.00	4.9	2.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.12	< 1.00	1.8	0.73
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 1.00	0.41	0.22
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.14	< 1.00	2.1	0.90
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.30	4.7	< 0.10	120	39
Phenols								
Cresols	DETSC 3451*	0.5	mg/kg			< 0.50		
Naphthols	DETSC 3451*	0.5	mg/kg			< 0.50		
Phenol	DETSC 3451*	0.5	mg/kg			< 0.50		
Resorcinol	DETSC 3451*	0.5	mg/kg			< 0.50		
Trimethylphenol	DETSC 3451*	0.5	mg/kg			< 0.50		
Xylenols & Ethylphenols	DETSC 3451*	0.5	mg/kg			< 0.50		
Phenols, Total	DETSC 3451*	5	mg/kg			< 5.0		

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845682	1845683	1845684	1845685	1845686
Sample ID	BH112	BH112	BH112	BH108	BH107
Depth	0.20	0.50	1.00	1.00	0.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	05/05/2021	05/05/2021	05/05/2021	06/05/2021	06/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%			0.046		
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	3.5	20	28	5.3	26
Cadmium	DETSC 2301#	0.1	mg/kg	0.8	0.4	0.5	0.2	0.7
Chromium	DETSC 2301#	0.15	mg/kg	3.6	13	12	8.7	12
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	32	150	180	11	95
Lead	DETSC 2301#	0.3	mg/kg	45	290	240	20	140
Mercury	DETSC 2325#	0.05	mg/kg	0.06	0.14	0.27	< 0.05	0.54
Nickel	DETSC 2301#	1	mg/kg	5.9	50	50	6.9	35
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	32	110	120	24	99
Inorganics								
pH	DETSC 2008#		pH	8.6	7.5	7.7	8.2	7.8
Total Organic Carbon	DETSC 2084#	0.5	%	6.9	21	24	< 0.5	15
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l			64	23	



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845682	1845683	1845684	1845685	1845686
Sample ID	BH112	BH112	BH112	BH108	BH107
Depth	0.20	0.50	1.00	1.00	0.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	05/05/2021	05/05/2021	05/05/2021	06/05/2021	06/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	8.8
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	22
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	82	33	< 3.4	< 3.4	50
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aliphatic C5-C35	DETSC 3072*	10	mg/kg					
Aliphatic C5-C44	DETSC 3072*	10	mg/kg	82	33	< 10	< 10	81
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	1.6	< 0.9	< 0.9	39
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	3.1	5.7	< 0.5	< 0.5	72
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	19	25	< 0.6	< 0.6	190
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	240	170	< 1.4	< 1.4	360
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	130	75	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg					
Aromatic C10-C44	DETSC 3072*	10	mg/kg	380	270	< 10	< 10	< 10
Aromatic C5-C44	DETSC 3072*	10	mg/kg	390	280	< 10	< 10	660
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg					
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	380	270	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845682	1845683	1845684	1845685	1845686
Sample ID	BH112	BH112	BH112	BH108	BH107
Depth	0.20	0.50	1.00	1.00	0.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	05/05/2021	05/05/2021	05/05/2021	06/05/2021	06/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.05	0.13	0.05	0.03	1.9
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.08	0.20	0.15	< 0.03	5.4
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	0.20	0.15	< 0.03	4.3
Fluorene	DETSC 3303	0.03	mg/kg	0.09	0.14	0.10	0.04	3.9
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.73	1.7	1.3	0.20	19
Anthracene	DETSC 3303	0.03	mg/kg	0.15	0.31	0.25	0.05	5.8
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.4	2.4	2.1	0.27	31
Pyrene	DETSC 3303#	0.03	mg/kg	1.5	2.6	2.2	0.29	31
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.88	1.3	1.2	0.17	16
Chrysene	DETSC 3303	0.03	mg/kg	0.53	0.77	0.68	0.08	11
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.74	1.2	1.0	0.13	12
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.26	0.36	0.35	0.05	3.7
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.65	0.90	0.81	0.12	8.8
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.17	0.25	0.21	0.03	4.3
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.04	0.08	0.07	< 0.03	1.6
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.22	0.31	0.28	0.05	5.1
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	7.5	13	11	1.5	160
Phenols								
Cresols	DETSC 3451*	0.5	mg/kg					
Naphthols	DETSC 3451*	0.5	mg/kg					
Phenol	DETSC 3451*	0.5	mg/kg					
Resorcinol	DETSC 3451*	0.5	mg/kg					
Trimethylphenol	DETSC 3451*	0.5	mg/kg					
Xylenols & Ethylphenols	DETSC 3451*	0.5	mg/kg					
Phenols, Total	DETSC 3451*	5	mg/kg					

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845687	1853723	1853724	1853725	1853726
Sample ID	BH110	BH107	BH111	BH106	BH102
Depth	1.00	1.00	2.00	1.00	0.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/05/2021	06/05/2021	05/05/2021	29/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETS 1102	0.001	%					
Metals								
Arsenic	DETS 2301#	0.2	mg/kg	22				
Cadmium	DETS 2301#	0.1	mg/kg	0.3				
Chromium	DETS 2301#	0.15	mg/kg	31				
Chromium, Hexavalent	DETS 2204*	1	mg/kg	< 1.0				
Copper	DETS 2301#	0.2	mg/kg	100				
Lead	DETS 2301#	0.3	mg/kg	370				
Mercury	DETS 2325#	0.05	mg/kg	0.80				
Nickel	DETS 2301#	1	mg/kg	29				
Selenium	DETS 2301#	0.5	mg/kg	< 0.5				
Zinc	DETS 2301#	1	mg/kg	82				
Inorganics								
pH	DETS 2008#		pH	8.1				
Total Organic Carbon	DETS 2084#	0.5	%	8.5				
Sulphate Aqueous Extract as SO4	DETS 2076#	10	mg/l		48	120	26	86



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845687	1853723	1853724	1853725	1853726
Sample ID	BH110	BH107	BH111	BH106	BH102
Depth	1.00	1.00	2.00	1.00	0.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/05/2021	06/05/2021	05/05/2021	29/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETS 3321*	0.01	mg/kg	< 0.01				
Aliphatic C6-C8	DETS 3321*	0.01	mg/kg	< 0.01				
Aliphatic C8-C10	DETS 3321*	0.01	mg/kg	< 0.01				
Aliphatic C10-C12	DETS 3072#	1.5	mg/kg	< 1.5				
Aliphatic C12-C16	DETS 3072#	1.2	mg/kg	< 1.2				
Aliphatic C16-C21	DETS 3072#	1.5	mg/kg	< 1.5				
Aliphatic C21-C35	DETS 3072#	3.4	mg/kg	< 3.4				
Aliphatic C35-C44	DETS 3072*	3.4	mg/kg	< 3.4				
Aliphatic C10-C44	DETS 3072*	10	mg/kg	< 10				
Aliphatic C5-C35	DETS 3072*	10	mg/kg					
Aliphatic C5-C44	DETS 3072*	10	mg/kg	< 10				
Aromatic C5-C7	DETS 3321*	0.01	mg/kg	< 0.01				
Aromatic C7-C8	DETS 3321*	0.01	mg/kg	< 0.01				
Aromatic C8-C10	DETS 3321*	0.01	mg/kg	< 0.01				
Aromatic C10-C12	DETS 3072#	0.9	mg/kg	< 0.9				
Aromatic C12-C16	DETS 3072#	0.5	mg/kg	< 0.5				
Aromatic C16-C21	DETS 3072#	0.6	mg/kg	< 0.6				
Aromatic C21-C35	DETS 3072#	1.4	mg/kg	< 1.4				
Aromatic C35-C44	DETS 3072*	1.4	mg/kg	< 1.4				
Aromatic C5-C35	DETS 3072*	10	mg/kg					
Aromatic C10-C44	DETS 3072*	10	mg/kg	< 10				
Aromatic C5-C44	DETS 3072*	10	mg/kg	< 10				
TPH Ali/Aro Total C5-C35	DETS 3072*	10	mg/kg					
Ali/Aro C10-C44	DETS 3072*	10	mg/kg	< 10				
Benzene	DETS 3321#	0.01	mg/kg	< 0.01				
Ethylbenzene	DETS 3321#	0.01	mg/kg	< 0.01				
Toluene	DETS 3321#	0.01	mg/kg	< 0.01				
Xylene	DETS 3321#	0.01	mg/kg	< 0.01				



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1
 Client Ref PN214217
 Contract Title Trinity Islands

Lab No	1845687	1853723	1853724	1853725	1853726
Sample ID	BH110	BH107	BH111	BH106	BH102
Depth	1.00	1.00	2.00	1.00	0.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	07/05/2021	06/05/2021	05/05/2021	29/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03				
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.04				
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.04				
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03				
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.23				
Anthracene	DETSC 3303	0.03	mg/kg	0.05				
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.35				
Pyrene	DETSC 3303#	0.03	mg/kg	0.36				
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.17				
Chrysene	DETSC 3303	0.03	mg/kg	0.11				
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.14				
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05				
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.11				
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.03				
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03				
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04				
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.7				
Phenols								
Cresols	DETSC 3451*	0.5	mg/kg					
Naphthols	DETSC 3451*	0.5	mg/kg					
Phenol	DETSC 3451*	0.5	mg/kg					
Resorcinol	DETSC 3451*	0.5	mg/kg					
Trimethylphenol	DETSC 3451*	0.5	mg/kg					
Xylenols & Ethylphenols	DETSC 3451*	0.5	mg/kg					
Phenols, Total	DETSC 3451*	5	mg/kg					

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1853727	1853745
Sample ID	BH101	WS106
Depth	1.00	0.50
Other ID		
Sample Type	ES	ES
Sampling Date	29/04/2021	05/05/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0.001	%		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg		
Cadmium	DETSC 2301#	0.1	mg/kg		
Chromium	DETSC 2301#	0.15	mg/kg		
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		
Copper	DETSC 2301#	0.2	mg/kg		
Lead	DETSC 2301#	0.3	mg/kg		
Mercury	DETSC 2325#	0.05	mg/kg		
Nickel	DETSC 2301#	1	mg/kg		
Selenium	DETSC 2301#	0.5	mg/kg		
Zinc	DETSC 2301#	1	mg/kg		
Inorganics					
pH	DETSC 2008#		pH		
Total Organic Carbon	DETSC 2084#	0.5	%		
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	68	74

Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1853727	1853745
Sample ID	BH101	WS106
Depth	1.00	0.50
Other ID		
Sample Type	ES	ES
Sampling Date	29/04/2021	05/05/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg		
Aliphatic C10-C44	DETSC 3072*	10	mg/kg		
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		
Aliphatic C5-C44	DETSC 3072*	10	mg/kg		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg		
Aromatic C5-C35	DETSC 3072*	10	mg/kg		
Aromatic C10-C44	DETSC 3072*	10	mg/kg		
Aromatic C5-C44	DETSC 3072*	10	mg/kg		
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg		
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg		
Benzene	DETSC 3321#	0.01	mg/kg		
Ethylbenzene	DETSC 3321#	0.01	mg/kg		
Toluene	DETSC 3321#	0.01	mg/kg		
Xylene	DETSC 3321#	0.01	mg/kg		



Summary of Chemical Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1853727	1853745
Sample ID	BH101	WS106
Depth	1.00	0.50
Other ID		
Sample Type	ES	ES
Sampling Date	29/04/2021	05/05/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg		
Acenaphthylene	DETSC 3303#	0.03	mg/kg		
Acenaphthene	DETSC 3303#	0.03	mg/kg		
Fluorene	DETSC 3303	0.03	mg/kg		
Phenanthrene	DETSC 3303#	0.03	mg/kg		
Anthracene	DETSC 3303	0.03	mg/kg		
Fluoranthene	DETSC 3303#	0.03	mg/kg		
Pyrene	DETSC 3303#	0.03	mg/kg		
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		
Chrysene	DETSC 3303	0.03	mg/kg		
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		
Phenols					
Cresols	DETSC 3451*	0.5	mg/kg		
Naphthols	DETSC 3451*	0.5	mg/kg		
Phenol	DETSC 3451*	0.5	mg/kg		
Resorcinol	DETSC 3451*	0.5	mg/kg		
Trimethylphenol	DETSC 3451*	0.5	mg/kg		
Xylenols & Ethylphenols	DETSC 3451*	0.5	mg/kg		
Phenols, Total	DETSC 3451*	5	mg/kg		



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845669	1845678	1845679
Sample ID	BH103	WS104A	BH106
Depth	0.20	1.10	0.15
Other ID			
Sample Type	ES	ES	ES
Sampling Date	26/04/2021	04/05/2021	06/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units
VOCs			
Vinyl Chloride	DETSC 3431	0.01	mg/kg
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg
1,1-dichloroethane	DETSC 3431	0.01	mg/kg
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg
2,2-dichloropropane	DETSC 3431	0.01	mg/kg
Bromochloromethane	DETSC 3431	0.01	mg/kg
Chloroform	DETSC 3431	0.01	mg/kg
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg
1,1-dichloropropene	DETSC 3431	0.01	mg/kg
Carbon tetrachloride	DETSC 3431	0.01	mg/kg
Benzene	DETSC 3431	0.01	mg/kg
1,2-dichloroethane	DETSC 3431	0.01	mg/kg
Trichloroethylene	DETSC 3431	0.01	mg/kg
1,2-dichloropropane	DETSC 3431	0.01	mg/kg
Dibromomethane	DETSC 3431	0.01	mg/kg
Bromodichloromethane	DETSC 3431	0.01	mg/kg
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg
Toluene	DETSC 3431	0.01	mg/kg
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg
Tetrachloroethylene	DETSC 3431	0.01	mg/kg
1,3-dichloropropane	DETSC 3431	0.01	mg/kg
Dibromochloromethane	DETSC 3431	0.01	mg/kg
1,2-dibromoethane	DETSC 3431	0.01	mg/kg
Chlorobenzene	DETSC 3431	0.01	mg/kg
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg
Ethylbenzene	DETSC 3431	0.01	mg/kg
m+p-Xylene	DETSC 3431	0.01	mg/kg
o-Xylene	DETSC 3431	0.01	mg/kg
Styrene	DETSC 3431*	0.01	mg/kg
Bromoform	DETSC 3431	0.01	mg/kg
Isopropylbenzene	DETSC 3431	0.01	mg/kg
Bromobenzene	DETSC 3431	0.01	mg/kg
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg
n-propylbenzene	DETSC 3431	0.01	mg/kg

Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845669	1845678	1845679
Sample ID	BH103	WS104A	BH106
Depth	0.20	1.10	0.15
Other ID			
Sample Type	ES	ES	ES
Sampling Date	26/04/2021	04/05/2021	06/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
2-chlorotoluene	DETSC 3431	0.01	mg/kg		< 0.01	
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	
4-chlorotoluene	DETSC 3431	0.01	mg/kg		< 0.01	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	
sec-butylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	
p-isopropyltoluene	DETSC 3431	0.01	mg/kg		< 0.01	
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg		< 0.01	
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg		< 0.01	
n-butylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg		< 0.01	
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg		< 0.01	
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg		< 0.01	
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg		< 0.01	
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg		< 0.01	
MTBE	DETSC 3431*	0.01	mg/kg		< 0.01	
SVOCs						
Phenol	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1



Summary of Chemical Analysis

Soil VOC/SVOC Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845669	1845678	1845679
Sample ID	BH103	WS104A	BH106
Depth	0.20	1.10	0.15
Other ID			
Sample Type	ES	ES	ES
Sampling Date	26/04/2021	04/05/2021	06/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1		< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1
SVOC TICs						
Blank (TIC)	DETSC 3433*		mg/kg	None		None

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Way

Sample Id BH104 1.00

Sample Numbers 1845670 1845688

Date Analysed 19/05/2021

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETS 2084# Total Organic Carbon	%	5.0	3	5	6
DETS 2003# Loss On Ignition	%	5.9	n/a	n/a	10
DETS 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETS 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
#REF!	mg/kg	190.0	500	n/a	n/a
DETS 3301 PAHs	mg/kg	18.0	100	n/a	n/a
DETS 2008# pH	pH Units	7.9	n/a	>6	n/a
DETS 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETS 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETS 2306 Arsenic as As	0.86	< 0.01	0.5	2	25
DETS 2306 Barium as Ba	14	0.14	20	100	300
DETS 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETS 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETS 2306 Copper as Cu	1.7	< 0.02	2	50	100
DETS 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETS 2306 Molybdenum as Mo	1.5	< 0.1	0.5	10	30
DETS 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETS 2306 Lead as Pb	0.11	< 0.05	0.5	10	50
DETS 2306 Antimony as Sb	0.49	< 0.05	0.06	0.7	5
DETS 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETS 2306 Zinc as Zn	3.4	0.034	4	50	200
DETS 2055 Chloride as Cl	1100	< 100	800	15,000	25,000
DETS 2055* Fluoride as F	< 100	< 0.1	10	150	500
DETS 2055 Sulphate as SO4	55000	550	1000	20,000	50,000
DETS 2009* Total Dissolved Solids	110000	1100	4000	60,000	100,000
DETS 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETS 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

Additional Information	
DETS 2008 pH	6.5
DETS 2009 Conductivity uS/cm	162.0
* Temperature*	20.0
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.098
Stage 1	
Volume of Leachant L2*	0.959
Volume of Eluate VE1*	0.9

TBE - To Be Evaluated		
SNRHW - Stable Non-Reactive		
Hazardous Waste		

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

V.2.06 * DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Way

Sample Id BH107 0.50

Sample Numbers 1845686 1845689

Date Analysed 19/05/2021

Test Results On Waste			WAC Limit Values		
Determinand and Method Reference	Units	Result	Inert Waste	SNRHW	Hazardous Waste
DETS 2084# Total Organic Carbon	%	15.0	3	5	6
DETS 2003# Loss On Ignition	%	13.0	n/a	n/a	10
DETS 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETS 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETS 3311# TPH (C10 - C40)	mg/kg	2400.0	500	n/a	n/a
DETS 3301 PAHs	mg/kg	270.0	100	n/a	n/a
DETS 2008# pH	pH Units	7.8	n/a	>6	n/a
DETS 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETS 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate			WAC Limit Values		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Limit values for LS10 Leachate		
	10:1	LS10	Inert Waste	SNRHW	Hazardous Waste
DETS 2306 Arsenic as As	1.4	0.014	0.5	2	25
DETS 2306 Barium as Ba	4.4	< 0.1	20	100	300
DETS 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETS 2306 Chromium as Cr	< 0.25	< 0.1	0.5	10	70
DETS 2306 Copper as Cu	2.1	0.021	2	50	100
DETS 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETS 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETS 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETS 2306 Lead as Pb	1	< 0.05	0.5	10	50
DETS 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETS 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETS 2306 Zinc as Zn	5.7	0.057	4	50	200
DETS 2055 Chloride as Cl	740	< 100	800	15,000	25,000
DETS 2055* Fluoride as F	100	1	10	150	500
DETS 2055 Sulphate as SO4	2000	< 100	1000	20,000	50,000
DETS 2009* Total Dissolved Solids	34000	340	4000	60,000	100,000
DETS 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETS 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

Additional Information	
DETS 2008 pH	7.7
DETS 2009 Conductivity uS/cm	49.2
* Temperature*	20.0
Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.947
Volume of Eluate VE1*	0.9

TBE - To Be Evaluated		
SNRHW - Stable Non-Reactive		
Hazardous Waste		

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Summary of Asbestos Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1842917	BH101 0.20	SOIL	NAD	none	Emma Stacey
1842918	BH102 0.15	SOIL	NAD	none	Emma Stacey
1842919	BH102 1.00	SOIL	NAD	none	Emma Stacey
1842920	BH103 0.50	SOIL	NAD	none	Emma Stacey
1842921	BH104 0.20	SOIL	NAD	none	Emma Stacey
1842922	BH104 0.50	SOIL	NAD	none	Emma Stacey
1842923	BH105 0.20	SOIL	NAD	none	Emma Stacey
1842924	WS101 0.20	SOIL	NAD	none	Emma Stacey
1842925	WS101 0.50	SOIL	NAD	none	Emma Stacey
1842926	WS101 1.00	SOIL	NAD	none	Emma Stacey
1842927	WS105 0.50	SOIL	NAD	none	Emma Stacey
1842928	WS105 2.80	SOIL	NAD	none	Emma Stacey
1845671	WS102 0.50	SOIL	NAD	none	Colin Patrick
1845673	WS106 0.30	SOIL	NAD	none	Colin Patrick
1845674	WS107 0.50	SOIL	NAD	none	Colin Patrick
1845675	WS107 1.70	SOIL	NAD	none	Colin Patrick
1845676	WS108 0.30	SOIL	NAD	none	Colin Patrick
1845677	WS104A 0.30	SOIL	NAD	none	Colin Patrick
1845678	WS104A 1.10	SOIL	NAD	none	Colin Patrick
1845680	BH106 0.50	SOIL	NAD	none	Colin Patrick
1845681	BH109 0.50	SOIL	NAD	none	Colin Patrick
1845682	BH112 0.20	SOIL	NAD	none	Colin Patrick
1845683	BH112 0.50	SOIL	NAD	none	Colin Patrick
1845684	BH112 1.00	SOIL	Chrysotile	bundle of Chrysotile fibres	Colin Patrick
1845685	BH108 1.00	SOIL	NAD	none	Colin Patrick
1845686	BH107 0.50	SOIL	NAD	none	Colin Patrick
1845687	BH110 1.00	SOIL	NAD	none	Colin Patrick

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 21-09486-1

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1845684
Sample ID	BH112
Depth	1.00
Other ID	
Sample Type	ES
Sampling Date	05/05/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.046
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.046
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	44.70
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	0.046

Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample

Information in Support of the Analytical Results

Our Ref 21-09486-1
Client Ref PN214217
Contract Trinity Islands

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1842917	BH101 0.20 SOIL	28/04/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1842918	BH102 0.15 SOIL	28/04/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1842919	BH102 1.00 SOIL	28/04/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1842920	BH103 0.50 SOIL	26/04/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1842921	BH104 0.20 SOIL	26/04/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1842922	BH104 0.50 SOIL	26/04/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1842923	BH105 0.20 SOIL	26/04/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1842924	WS101 0.20 SOIL	29/04/21	GJ 250ml x2, GJ 60ml		
1842925	WS101 0.50 SOIL	29/04/21	GJ 250ml x2, GJ 60ml		
1842926	WS101 1.00 SOIL	29/04/21	GJ 250ml x2, GJ 60ml		
1842927	WS105 0.50 SOIL	29/04/21	GJ 250ml x2, GJ 60ml		
1842928	WS105 2.80 SOIL	29/04/21	GJ 250ml x2, GJ 60ml		
1845669	BH103 0.20 SOIL	26/04/21	PT 1L	Naphthalene (14 days), PAH MS (14 days), SVOC TICs & (14 days)	Phenols BG, Naphthalene, PAH MS, SVOC TICs &
1845670	BH104 1.00 SOIL	26/04/21	GJ 250ml x2, GJ 60ml	BTEX (14 days), PAH FID (14 days), pH + Conductivity (7 days), EPH/TPH (14 days)	
1845671	WS102 0.50 SOIL	29/04/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1845672	WS102 1.00 SOIL	29/04/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1845673	WS106 0.30 SOIL	05/05/21	GJ 250ml x2, GJ 60ml		
1845674	WS107 0.50 SOIL	05/05/21	GJ 250ml x2, GJ 60ml		
1845675	WS107 1.70 SOIL	05/05/21	GJ 250ml x2, GJ 60ml		
1845676	WS108 0.30 SOIL	04/05/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1845677	WS104A 0.30 SOIL	04/05/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1845678	WS104A 1.10 SOIL	04/05/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days), VOC (7 days)	
1845679	BH106 0.15 SOIL	06/05/21	GJ 250ml x2, GJ 60ml		
1845680	BH106 0.50 SOIL	06/05/21	GJ 250ml x2, GJ 60ml		
1845681	BH109 0.50 SOIL	30/04/21	GJ 250ml x2, GJ 60ml	pH + Conductivity (7 days)	
1845682	BH112 0.20 SOIL	05/05/21	GJ 250ml x2, GJ 60ml		
1845683	BH112 0.50 SOIL	05/05/21	GJ 250ml x2, GJ 60ml		
1845684	BH112 1.00 SOIL	05/05/21	GJ 250ml x2, GJ 60ml		
1845685	BH108 1.00 SOIL	06/05/21	GJ 250ml x2, GJ 60ml		
1845686	BH107 0.50 SOIL	06/05/21	GJ 250ml x2, GJ 60ml		
1845687	BH110 1.00 SOIL	07/05/21	GJ 250ml, GJ 60ml		
1845688	BH104 1.00 LEACHATE	26/04/21	GJ 250ml x2, GJ 60ml		
1845689	BH107 0.50 LEACHATE	06/05/21	GJ 250ml x2, GJ 60ml		
1853723	BH107 1.00 SOIL	06/05/21	GJ 250ml x2, GJ 60ml		
1853724	BH111 2.00 SOIL	05/05/21	GJ 250ml x2, GJ 60ml		
1853725	BH106 1.00 SOIL	29/04/21	GJ 250ml x2, GJ 60ml		
1853726	BH102 0.50 SOIL	29/04/21	GJ 250ml x2, GJ 60ml		
1853727	BH101 1.00 SOIL	29/04/21	GJ 250ml x2, GJ 60ml		
1853745	WS106 0.50 SOIL	05/05/21	No containers logged		Cannot evaluate

Key: G-Glass J-Jar P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.



Information in Support of the Analytical Results

Our Ref 21-09486-1
Client Ref PN214217
Contract Trinity Islands

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



Certificate of Analysis

Certificate Number 21-11920

Issued: 16-Jun-21

Client Geotechnics LTD
The Geotechnical Centre
Unit 1B Borders Ind. Park
River Lane
Saltney
Chester
CH4 8RJ

Our Reference 21-11920

Client Reference PN214217

Order No (not supplied)

Contract Title Trinity Islands

Description 6 Water samples.

Date Received 07-Jun-21

Date Started 07-Jun-21

Date Completed 16-Jun-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "A Fenwick", is placed over a faint, circular, textured background.

Adam Fenwick
Contracts Manager





Summary of Chemical Analysis

Water Samples

Our Ref 21-11920

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1858630	1858631	1858632	1858633	1858634	1858635
Sample ID	BH101	BH102	BH103	BH104	BH105	BH106
Depth						
Other ID						
Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
Sampling Date	02/06/2021	02/06/2021	02/06/2021	02/06/2021	02/06/2021	02/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.21	1.0	< 0.16	0.25	0.26	0.39
Boron, Dissolved	DETSC 2306*	12	ug/l	68	< 12	17	210	120	180
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	0.04	0.12	0.34
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.34	0.44	0.26	0.47	0.58	0.52
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.5	0.4	< 0.4	0.6	0.9	1.8
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.17	0.21	< 0.09	0.16	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.6	< 0.5	< 0.5	1.3	1.0	1.9
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.32	0.45	0.68	1.1	0.97	0.99
Zinc, Dissolved	DETSC 2306	1.3	ug/l	2.7	< 1.3	< 1.3	< 1.3	6.1	4.0
Inorganics									
pH	DETSC 2008		pH	7.4	7.3	7.1	7.5	7.1	7.1
Sulphate as SO4	DETSC 2055	0.1	mg/l	99	17	20	110	82	130
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
PAHs									
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.08	< 0.01	< 0.01	< 0.01	< 0.01	0.08
Fluorene	DETSC 3304	0.01	ug/l	0.03	< 0.01	< 0.01	< 0.01	< 0.01	0.03
Phenanthrene	DETSC 3304	0.01	ug/l	0.04	< 0.01	< 0.01	0.01	0.02	0.08
Anthracene	DETSC 3304	0.01	ug/l	0.06	0.04	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.06	< 0.01	< 0.01	< 0.01	< 0.01	0.10
Pyrene	DETSC 3304	0.01	ug/l	0.05	< 0.01	< 0.01	< 0.01	0.01	0.10



Summary of Chemical Analysis

Water Samples

Our Ref 21-11920

Client Ref PN214217

Contract Title Trinity Islands

				Lab No	1858630	1858631	1858632	1858633	1858634	1858635
				Sample ID	BH101	BH102	BH103	BH104	BH105	BH106
				Depth						
				Other ID						
				Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
				Sampling Date	02/06/2021	02/06/2021	02/06/2021	02/06/2021	02/06/2021	02/06/2021
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units							
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
PAH Total	DETSC 3304	0.2	ug/l	0.37	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.58
PCBs										
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3						< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2						< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3						< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6						< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2						< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2						< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2						< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0						< 1.0
Phenols										
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100						< 100



Summary of Chemical Analysis

Water VOC/SVOC Samples

Our Ref 21-11920

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1858630	1858635
Sample ID	BH101	BH106
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	02/06/2021	02/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1



Summary of Chemical Analysis

Water VOC/SVOC Samples

Our Ref 21-11920

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1858630	1858635
Sample ID	BH101	BH106
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	02/06/2021	02/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1
SVOCs					
Phenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Aniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4-Dimethylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4-Dichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0



Summary of Chemical Analysis

Water VOC/SVOC Samples

Our Ref 21-11920

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1858630	1858635
Sample ID	BH101	BH106
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	02/06/2021	02/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0	< 1.0
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0
SVOC TICs					
blank (TIC)	DETS 071*		ug/l		None
butyl citrate (TIC)	DETS 071*		ug/l	53.33	

Information in Support of the Analytical Results

Our Ref 21-11920
Client Ref PN214217
Contract Trinity Islands

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1858630	BH101 WATER	02/06/21	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Kone (4 days), pH/Cond/TDS (1 days), PAH MS (4 days)	
1858631	BH102 WATER	02/06/21	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Kone (4 days), pH/Cond/TDS (1 days), PAH MS (4 days)	
1858632	BH103 WATER	02/06/21	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Kone (4 days), pH/Cond/TDS (1 days), PAH MS (4 days)	
1858633	BH104 WATER	02/06/21	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Kone (4 days), pH/Cond/TDS (1 days), PAH MS (4 days)	
1858634	BH105 WATER	02/06/21	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Kone (4 days), pH/Cond/TDS (1 days), PAH MS (4 days)	
1858635	BH106 WATER	02/06/21	GB 1L, GV, PB 1L	Aliphatics/Aromatics (4 days), Chromium, Hexavalent (4 days), Kone (4 days), pH/Cond/TDS (1 days), PAH MS (4 days)	
Key: G-Glass P-Plastic B-Bottle V-Vial DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.					

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



Certificate of Analysis

Certificate Number 21-13053

Issued: 28-Jun-21

Client Geotechnics LTD
The Geotechnical Centre
Unit 1B Borders Ind. Park
River Lane
Saltney
Chester
CH4 8RJ

Our Reference 21-13053

Client Reference PN214217

Order No (not supplied)

Contract Title Trinity Islands

Description 6 Water samples.

Date Received 21-Jun-21

Date Started 21-Jun-21

Date Completed 28-Jun-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "A. Fenwick", is placed over a faint circular stamp.

Adam Fenwick
Contracts Manager





Summary of Chemical Analysis

Water Samples

Our Ref 21-13053

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1865123	1865124	1865125	1865126	1865127	1865128
Sample ID	BH107	BH108	BH109	BH110	BH111	BH112
Depth						
Other ID						
Sample Type	W	W	W	W	W	W
Sampling Date	17/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Antimony, Dissolved	DETSC 2306	0.17	ug/l	0.62	1.1	0.42	0.38	0.31	0.28
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.77	2.0	0.55	0.80	0.49	0.47
Barium, Dissolved	DETSC 2306	0.26	ug/l	57	100	61	180	84	110
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	0.2	0.2	0.1	0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	63	290	120	140	120	120
Calcium, Dissolved	DETSC 2306	0.09	mg/l	64	140	110	200	170	240
Chromium, Dissolved	DETSC 2306	0.25	ug/l	2.6	2.4	1.4	1.9	0.93	0.65
Chromium III, Dissolved	DETSC 2306*	1	ug/l	2.6	2.4	1.4	1.9	< 1.0	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.7	4.2	1.8	1.6	0.9	1.2
Iron, Dissolved	DETSC 2306	5.5	ug/l	110	140	57	87	110	57
Lead, Dissolved	DETSC 2306	0.09	ug/l	2.2	4.7	1.3	1.4	0.75	0.48
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	7.5	46	11	60	57	61
Manganese, Dissolved	DETSC 2306	0.22	ug/l	63	1700	1200	600	4700	84
Molybdenum, Dissolved	DETSC 2306	1.1	ug/l	3.7	4.1	4.6	2.3	< 1.1	< 1.1
Nickel, Dissolved	DETSC 2306	0.5	ug/l	3.5	5.7	3.4	4.0	5.4	5.3
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.5	1.5	0.93	0.93	0.61	0.83
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	2.2	3.0	1.2	1.4	0.6	< 0.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3.7	19	5.0	4.5	8.2	7.3
Inorganics									
pH	DETSC 2008		pH	7.4	7.2	7.2	7.1	7.0	7.1
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Cyanide, Free	DETSC 2130	20	ug/l	< 20	< 20	< 20	< 20	< 20	< 20
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	190	530	326	743	666	844
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.073	10	0.60	7.1	0.067	0.61
Chloride	DETSC 2055	0.1	mg/l	28	150	58	47	480	740
Fluoride	DETSC 2055	0.1	mg/l	< 0.10	< 0.10	< 0.10	0.11	< 0.10	< 0.10
Sulphate as SO4	DETSC 2055	0.1	mg/l	43	290	67	82	200	230
Sulphide	DETSC 2208	10	ug/l	18	16	22	< 10	13	14
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	3.4	2.8	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	23	7.9	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	36	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	63	11	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.7



Summary of Chemical Analysis

Water Samples

Our Ref 21-13053

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1865123	1865124	1865125	1865126	1865127	1865128
Sample ID	BH107	BH108	BH109	BH110	BH111	BH112
Depth						
Other ID						
Sample Type	W	W	W	W	W	W
Sampling Date	17/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	8.6
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	22
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	39
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	76
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	63	11	76
PAHs									
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.02	0.09	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.03	0.11	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	0.07	0.13	< 0.01	< 0.01	0.01	< 0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	0.45	< 0.20	< 0.20	< 0.20	< 0.20
PCBs									
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3			< 0.3		< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2			< 0.2		< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3			< 0.3		< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6			< 0.6		< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2			< 0.2		< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2			< 0.2		< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2			< 0.2		< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0			< 1.0		< 1.0
Phenols									
Phenol	DETSC 3451*	0.1	ug/l	< 0.10			< 0.10		< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10			< 0.10		< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10			< 0.10		< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10			< 0.10		< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10			< 0.10		< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10			< 0.10		< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10			< 0.10		< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10			< 0.10		< 0.10



Summary of Chemical Analysis

Water VOC/SVOC Samples

Our Ref 21-13053
 Client Ref PN214217
 Contract Title Trinity Islands

Lab No	1865123	1865126	1865128
Sample ID	BH107	BH110	BH112
Depth			
Other ID			
Sample Type	W	W	W
Sampling Date	17/06/2021	17/06/2021	17/06/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Dichlorodifluoromethane	DETS 3432	1	ug/l	< 1	< 1	< 1
Chloromethane	DETS 3432	1	ug/l	< 1	< 1	< 1
Vinyl Chloride	DETS 3432	1	ug/l	< 1	< 1	< 1
Bromomethane	DETS 3432	1	ug/l	< 1	< 1	< 1
Chloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1
Trichlorofluoromethane	DETS 3432*	1	ug/l	< 1	< 1	< 1
1,1-dichloroethylene	DETS 3432	1	ug/l	< 1	< 1	< 1
Methylene Chloride	DETS 3432*	27	ug/l	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETS 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETS 3432	1	ug/l	< 1	< 1	< 1
2,2-dichloropropane	DETS 3432	2	ug/l	< 2	< 2	< 2
Bromochloromethane	DETS 3432	4	ug/l	< 4	< 4	< 4
Chloroform	DETS 3432	1	ug/l	13	3	14
1,1,1-trichloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloropropene	DETS 3432	1	ug/l	< 1	< 1	< 1
Carbon tetrachloride	DETS 3432	1	ug/l	< 1	< 1	< 1
Benzene	DETS 3432	1	ug/l	< 1	< 1	< 1
1,2-dichloroethane	DETS 3432	1	ug/l	< 1	< 1	4
Trichloroethylene	DETS 3432*	1	ug/l	< 1	< 1	< 1
1,2-dichloropropane	DETS 3432	1	ug/l	< 1	< 1	< 1
Dibromomethane	DETS 3432	1	ug/l	< 1	< 1	< 1
Bromodichloromethane	DETS 3432	4	ug/l	< 4	< 4	< 4
cis-1,3-dichloropropene	DETS 3432	1	ug/l	< 1	< 1	< 1
Toluene	DETS 3432	1	ug/l	< 1	< 1	< 1
trans-1,3-dichloropropene	DETS 3432	1	ug/l	< 1	< 1	< 1
1,1,2-trichloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1
Tetrachloroethylene	DETS 3432	1	ug/l	< 1	< 1	< 1
1,3-dichloropropane	DETS 3432	1	ug/l	< 1	< 1	< 1
Dibromochloromethane	DETS 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromoethane	DETS 3432	1	ug/l	< 1	< 1	< 1
Chlorobenzene	DETS 3432	1	ug/l	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1
Ethylbenzene	DETS 3432	1	ug/l	< 1	< 1	< 1
m+p-Xylene	DETS 3432	2	ug/l	< 2	< 2	< 2
o-Xylene	DETS 3432	1	ug/l	< 1	< 1	< 1
Styrene	DETS 3432	1	ug/l	< 1	< 1	< 1
Bromoform	DETS 3432	1	ug/l	< 1	< 1	< 1
Isopropylbenzene	DETS 3432	1	ug/l	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETS 3432	1	ug/l	< 1	< 1	< 1
Bromobenzene	DETS 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichloropropane	DETS 3432	1	ug/l	< 1	< 1	< 1



Summary of Chemical Analysis

Water VOC/SVOC Samples

Our Ref 21-13053
 Client Ref PN214217
 Contract Title Trinity Islands

Lab No	1865123	1865126	1865128
Sample ID	BH107	BH110	BH112
Depth			
Other ID			
Sample Type	W	W	W
Sampling Date	17/06/2021	17/06/2021	17/06/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1	< 1
SVOCs						
Aniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Dibenzofuran	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Diphenylamine	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0



Summary of Chemical Analysis Water VOC/SVOC Samples

Our Ref 21-13053

Client Ref PN214217

Contract Title Trinity Islands

Lab No	1865123	1865126	1865128
Sample ID	BH107	BH110	BH112
Depth			
Other ID			
Sample Type	W	W	W
Sampling Date	17/06/2021	17/06/2021	17/06/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
4-Bromophenylphenylether	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)ester	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Pentachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Azobenzene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
Carbazole	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0
1-Methylnaphthalene	DETSC 3434*	1	ug/l	< 1.0	< 1.0	< 1.0

Information in Support of the Analytical Results

Our Ref 21-13053
 Client Ref PN214217
 Contract Trinity Islands

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1865123	BH107 WATER	17/06/21	GB 1L, GV, PB 1L	pH/Cond/TDS (1 days)	
1865124	BH108 WATER	17/06/21	GB 1L, GV, PB 1L	pH/Cond/TDS (1 days)	
1865125	BH109 WATER	17/06/21	GB 1L, GV, PB 1L	pH/Cond/TDS (1 days)	
1865126	BH110 WATER	17/06/21	GB 1L, GV, PB 1L	pH/Cond/TDS (1 days)	
1865127	BH111 WATER	17/06/21	GB 1L, GV, PB 1L	pH/Cond/TDS (1 days)	
1865128	BH112 WATER	17/06/21	GB 1L, GV, PB 1L	pH/Cond/TDS (1 days)	

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



Derwentside Environmental Testing Services Limited
Unit 2, Park Road Industrial Estate South,
Consett,
Co Durham,
DH8 5PY
31st May 2021

Joshua Noble
Geotechnics LTD
The Geotechnical Centre
Unit 1B Borders Ind. Park
River Lane
Saltney
Chester
CH4 8RJ

Analysis Report on 21-09486

Your Reference: PN214217 – Trinity Islands

Our Reference: 21-09486

Issue Number: 1

Date: 28th May 2021

This non-routine analysis report undertakes a review of hydrocarbon data obtained from the analysis of samples collected by Geotechnics LTD and submitted to Derwentside Environmental Testing Services LTD / SUEZ on the 6th of May 2021.

A handwritten signature in blue ink that reads 'Ken Scally'.

Dr Ken Scally MSc FRSC

Technical and Quality Director

Laboratory and Technical Services



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1.0 Introduction

1.1 The Writer

I am Dr Ken Scally. My specialist field is as an International Environmental Forensic Chemist with over 25 years of experience in petroleum hydrocarbon analysis and forensic data interpretation, analytical chemistry, and quality management. I have acted as a Forensic Chemistry expert for the damage assessment program on the Gulf of Mexico, Deepwater Horizon Oil Spill; the largest accidental marine oil spill in history and the largest National Resource Damage Assessment (NRDA) in US history working for Cardon Entrix and Exponent.

My area of speciality is in chemical composition and interpretation of petroleum hydrocarbons in terrestrial and marine environments. I have a detailed understanding of oil chemistry, degradation pathways, aging, and source correlation indicators. I have participated in environmental forensic conferences worldwide and have lectured graduate and undergraduate courses in Environmental Forensics as an invited lecture at academic institutes in Ireland, United Kingdom and Canada. Having extensive experience in laboratory Quality Assurance/Quality Control Management with involvement as a technical laboratory assessor for commercial laboratories and regulatory bodies across Europe.

This report has been prepared with due skill, care, and diligence, and every effort has been made to ensure that the information contained herein is accurate, but no legal responsibility is accepted for any errors, omissions, or misleading statements. Any opinions, findings, conclusions, or recommendations as expressed in this report are outside of DETS/SUEZ scope of accreditation and should therefore be viewed in that context. This report is confidential to the client, and DETS/SUEZ accepts no responsibility to any third parties to whom this report or any part thereof is made known. Any party who relies upon this report does so at their own risk.

1.2 Executive Summary and Conclusion

- Chromatography Fingerprint Analysis of BH103 at 0.2M, Lab No. 1845669 suggests a bitumen petrogenic profile.
- Chromatography Fingerprint Analysis of BH106 at 0.15M, Lab No. 1845679 suggests a bitumen petrogenic profile.
- Benzo(a)pyrene in BH103 was 0.12 mg/kg which is less than the trigger value of 50 mg/kg.
- Benzo(a)pyrene in BH106 was less than the limit of detection.
- PAH Double ratio plot for BH103 suggested a petroleum combustion type signature.
- The absence of PAHs in BH106 would suggest that the sample is unlikely to be coal tar in origin.



- GCMS targeted compounds of SVOC and Phenols were found to be less than the limit of detection for each compound in BH103 and BH106.
- Biomarker analysis of terpanes, steranes and cholestanes all suggested a petrogenic signature for both Bh103 and BH106.
- Dibenzothiophene alkylated series had dominance of the alkylated homologues series when compared to the parent which is characteristic of a petrogenic signature for BH103 and BH106.

1.2.1 Summary of my Conclusions

In my opinion, on the balance of probabilities, with multiple lines of evidence reviewed in this report, the evidence would indicate the likely source for BH103 and BH106 to be bituminous and not coal tar.

2.0 Introduction

There were thirty-one soil samples and two leachate samples received from Geotechnics Ltd and was allocated the DETS/SUEZ project number 21-09486. A request for source characterisation and interpretation of the two samples identified as BH103 at 0.20M (Lab No. 1845669) and BH106 at 0.15M (Lab No. 1845679) was authorized by Joshua Noble of Geotechnics Ltd. The purpose of the evaluation was to determine the presence or absence of coal tar in the two samples.

2.1 Samples

Two soil sample BH103 (Figure 1) and BH106 (Figure 2) were sampled by Geotechnics Ltd on the 26th of April 2021 and received for analysis by the laboratory on the 6th of May 2021.



Figure 1 BH103 at 0.2M, Lab No. 1845669



Figure 2 BH106 at 0.15M, Lab No. 1845679

3.0 Interpretation of Laboratory Data

The waste classification guidance on the classification and assessment of waste (1st Edition V1.1.GB) technical guidance WM3 (2021) states:

“Coal tar is complex mix of hydrocarbons which have to be added together to determine the concentration of coal tar. Therefor the 0.1% concentration must be applied to all fractions of the coal tar. Assessment based on PAH’s alone are not consistent with the legislation and cannot be used to classify a waste as non-hazardous.”

The guidance document continues to define the interpretation of the presence of coal tar based on the presence of benzo[a]pyrene as:

“Where the concentration of benzo[a]pyrene is at or above 50 ppm (mg/kg) in the black top alone (excluding other material) then the amount of coal tar should be considered to be sufficient (0.1% or more).”

The employment of a range of testing methodologies to include polycyclic aromatic hydrocarbons, semi-volatile organic compounds (SVOCs), phenols and unique signature markers (alkylate PAHs, steranes, cholestane’s, tri-, tetra- and pentacyclic terpanes) will provide additional lines of evidence to support the absence or presence of coal tar. Petrogenic signatures would suggest the presence of a bitumen while pyrogenic signatures that of coal tar, all will be assessed within the report.

Bitumen is described by Kamoto et al (2020), as a semi-solid hydrocarbon product produced by removing the lighter fractions such as liquid petroleum gas from heavy crude oil during the refinery processes of crude oil without pyrolysis steps. As the stock crude oil occurs naturally in the environment, the unique signatures typically found in crude oils can translate into this product. In this report, these signature compounds will be evaluated to determine this petrogenic influence.

In contrast Coal tar is a complex mixture of hydrocarbons produced by the pyrolysis of coal (Roberts L., 2014). This carbonization of coal process is different from bitumen and as a result the signatures observed in bitumen are suppressed or absent due to the high temperature carbonization (coking) of coal.

3.1 Chromatography Fingerprint Analysis BH103 at 0.2M, Lab No. 1845669

Interpretation: Soil sample BH103 at 0.2M, Lab No. 1845669 was analysed by gas chromatography utilising mass spectrometry and the resulting chromatogram (Figure 3) indicated the presence of some of the sixteen targeted polycyclic aromatic hydrocarbons over a complex unresolved envelope which expanded from nC₁₂ to nC₄₀+. The chromatogram has labelled peaks, deuterated internal standards used in for the quantitation and the identification of retention time window during the assessment and quantification process. The profile observed is characteristic of a bitumen like material.

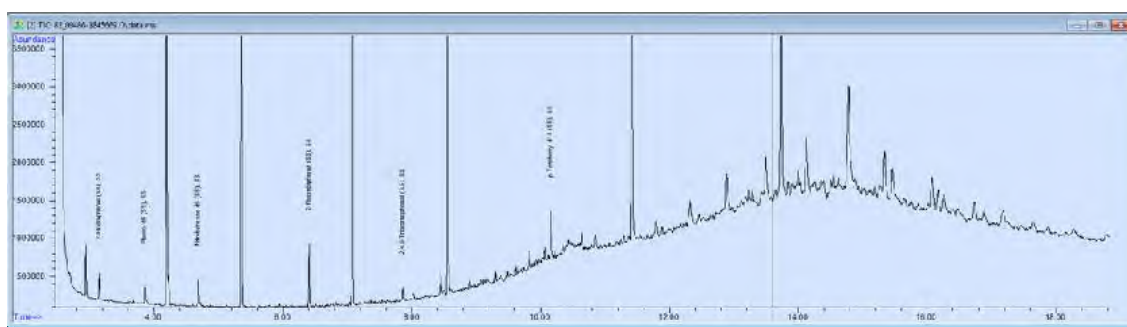


Figure 3 BH103 at 0.2M, Lab No. 1845669

3.2 Chromatography Fingerprint Analysis BH106 at 0.15M, Lab No. 1845679

Interpretation: Soil sample BH106 at 0.15M, Lab No. 1845679 was analysed by gas chromatography utilising mass spectrometry and the resulting chromatogram (Figure 4) indicated the presence of a complex unresolved envelope which expanded from nC₁₂ to nC₄₀+. The chromatogram has labelled peaks, deuterated internal standards used in for the quantitation and the identification of retention time window during the assessment and quantification process. The profile observed is characteristic of a bitumen like material.

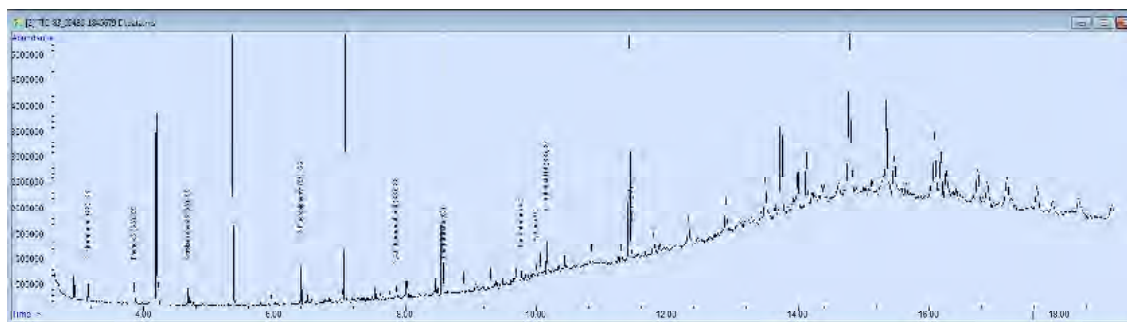


Figure 4 BH106 at 0.15M, Lab No. 1845679

3.3 Chemical Analysis SVOCs - BH103 and BH106

The chemical analysis of BH103 and BH106 performed by gas chromatography utilising mass spectrometry (GCMS) found that the targeted analytes in the suite of analysis were all reported as less than the limit of detection for each of the two samples (Table 1). However, BH103 showed the presence of some of the targeted polycyclic aromatic hydrocarbons (Table 1). Most notably the concentration of benzo(a)pyrene in BH103 was 0.12 mg/kg which is less than the trigger value of 50 mg/kg as described in the WM3 Environment Agencies Guidance document (2021). Other compounds including phenols, phenol derivatives and carbazole were all less than the methods limit of detection suggesting that the source was unlikely to be coal tar in nature.

To understand the likely contribution of the polycyclic aromatic hydrocarbons found in BH103, the use of a double ratio plot (Costa and Sauer, 2005) of the PAHs compound ratios of fluoranthene: pyrene to benzo(a)anthracene: chrysene was undertaken (Figure 5). The likely source as derived from the double ratio plot is suggesting a petroleum combustion type signature. As BH106 does not contain measurable PAHs used in the double ratio plot for this sample and therefore was not calculated. This absence of PAHs in BH106 would suggest that the source is unlikely to be coal tar in origin.

Table 1 Chemical Analysis SVOCs – BH103 and BH106

Summary of Chemical Analysis					
Soil VOC/SVOC Samples					
Our Ref		21-09486			
Client Ref		PN214217			
Contract Title		Trinity Islands			
		Lab No	1845669	1845679	
		Sample ID	BH103	BH106	
		Depth	0.20	0.15	
		Other ID			
		Sample Type	ES	ES	
		Sampling Date	26/04/2021	06/05/2021	
		Sampling Time	n/s	n/s	
Test	Method	LOD	Units		
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1

2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
SVOC TICs					
Blank (TIC)	DETSC 3433*		mg/kg	None	None
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 1.00
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 1.00
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 1.00
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 1.00
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.05	< 1.00
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 1.00
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	< 1.00
Pyrene	DETSC 3303#	0.03	mg/kg	0.13	< 1.00
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.13	< 1.00
Chrysene	DETSC 3303	0.03	mg/kg	0.07	< 1.00

Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.14	< 1.00
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	< 1.00
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.12	< 1.00
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.06	< 1.00
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 1.00
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.08	< 1.00
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.92	< 0.10
Phenols					
Cresols	DETSC 3451*	0.5	mg/kg	< 0.50	< 0.50
Naphthols	DETSC 3451*	0.5	mg/kg	< 0.50	< 0.50
Phenol	DETSC 3451*	0.5	mg/kg	< 0.50	< 0.50
Resorcinol	DETSC 3451*	0.5	mg/kg	< 0.50	< 0.50
Trimethylphenol	DETSC 3451*	0.5	mg/kg	< 0.50	< 0.50
Xylenols & Ethylphenols	DETSC 3451*	0.5	mg/kg	< 0.50	< 0.50
Phenols, Total	DETSC 3451*	5	mg/kg	< 5.0	< 5.0

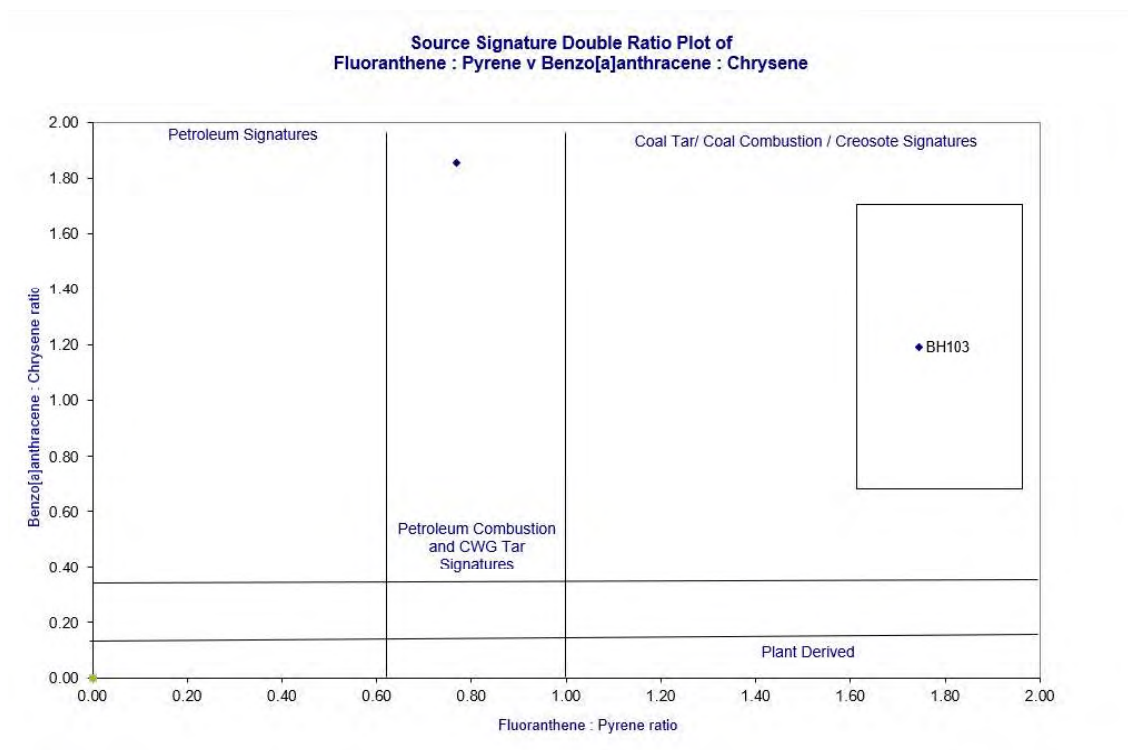


Figure 5 Double Ratio PAH Source Signature Plot – BH103

3.4 Chemical Analysis Biomarkers - BH103 and BH106

Biomarkers are a group of compounds, primarily Hydrocarbons, found in oils, rock extracts, recent sediment extracts and soil extracts. Chemical analysis of source characteristic and environmentally persistent biomarkers generates information of great importance in determining the source of spilled oil, differentiating oils, monitoring the degradation process, and weathering state of oils under a variety of conditions. In the past decade, use of biomarker fingerprinting techniques to study spilled oils has greatly increased, and Biomarker parameters have been playing a prominent role in almost all oil spill and source identification work (Wang and Fingas, 2006). Most knowledge of Biomarkers and their diagnostic ratios comes from Oil geochemistry (Peter and Moldowan, 1993). A wide variety of Biomarkers have been identified as being of use in characterisation of Crude Oils and Oil fractions, including Tricyclic, Tetracyclic and Pentacyclic Terpanes (191 m/z), Methylhopanes (205 m/z), Steranes (217/218 m/z), Methylsteranes (217/231 m/z) and Diasteranes (217/259 m/z). The distribution patterns are in general different from Oil to Oil (Wang and Fingas, 2006).

Hopanes are found in almost all ancient sediments and crude oils. They are derived from oxygenated analogues such as the bacteriohopanetetrols found in most bacteria and Cyanobacteria (Volkman *et al.*, (1997). Tricyclic Terpanes recently have assumed an important role in geochemical and petroleum studies. It has been shown that many Crude Oils and source rock extracts contain a homologous series of Tricyclic Terpanes in the range $C_{19}H_{34}$ to $C_{45}H_{86}$ and possibly higher (Philp, 1985). Pentacyclic Triterpanes are based on the Hopane structure and are ubiquitous Biomarkers. The general structure for this member of the series is shown in Figure 6 along with the characteristic fragmentation ion 191m/z. Variation in the relative distributions of individual components within the series as determined by GCMS ensures that these compounds are useful for correlation purposes.

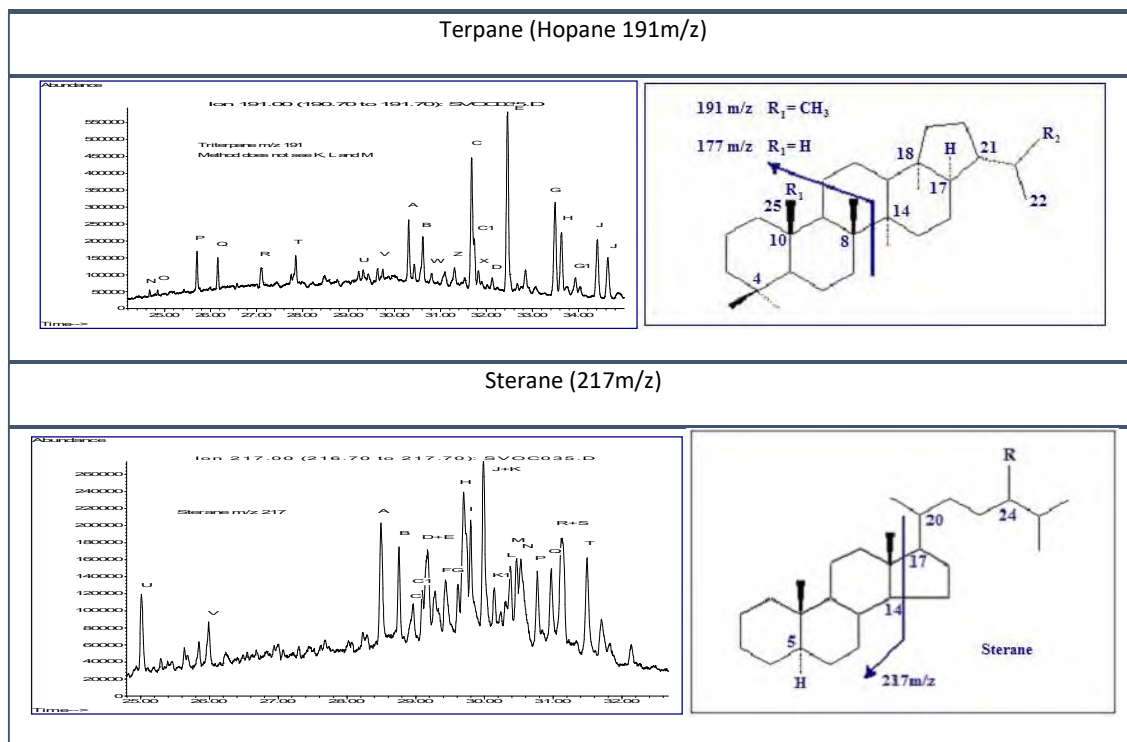


Figure 6 SIM Chromatograms of Terpanes (191m/z) and Sterane (217m/z)

Samples BH103 (Figure 7) and BH106 (Figure 8) showed the presence of terpanes and sterane biomarkers suggesting a petrogenic influence. The presence of cholestanes would confirm that the samples from BH103 and BH106 has not undergone a carbonization production process. Both samples had the presence of the PAH, dibenzothiophene and its alkylated series. This alkylated PAH series presented a petrogenic signature, which can be observed by an abundance of the “daughter” alkylated homologues in abundance when compared to the parent dibenzothiophene PAH.

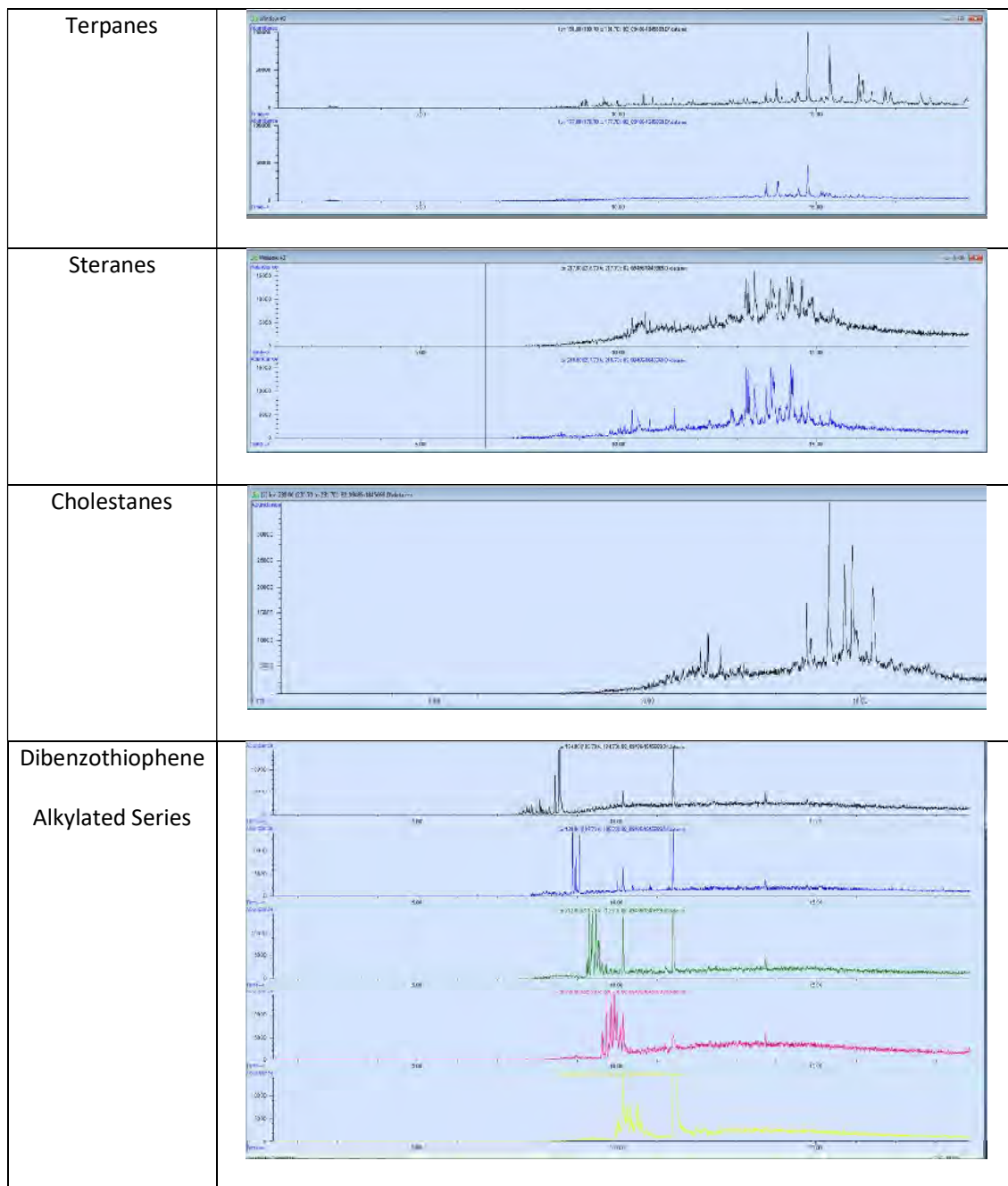


Figure 7 Biomarkers BH103 (1845669)

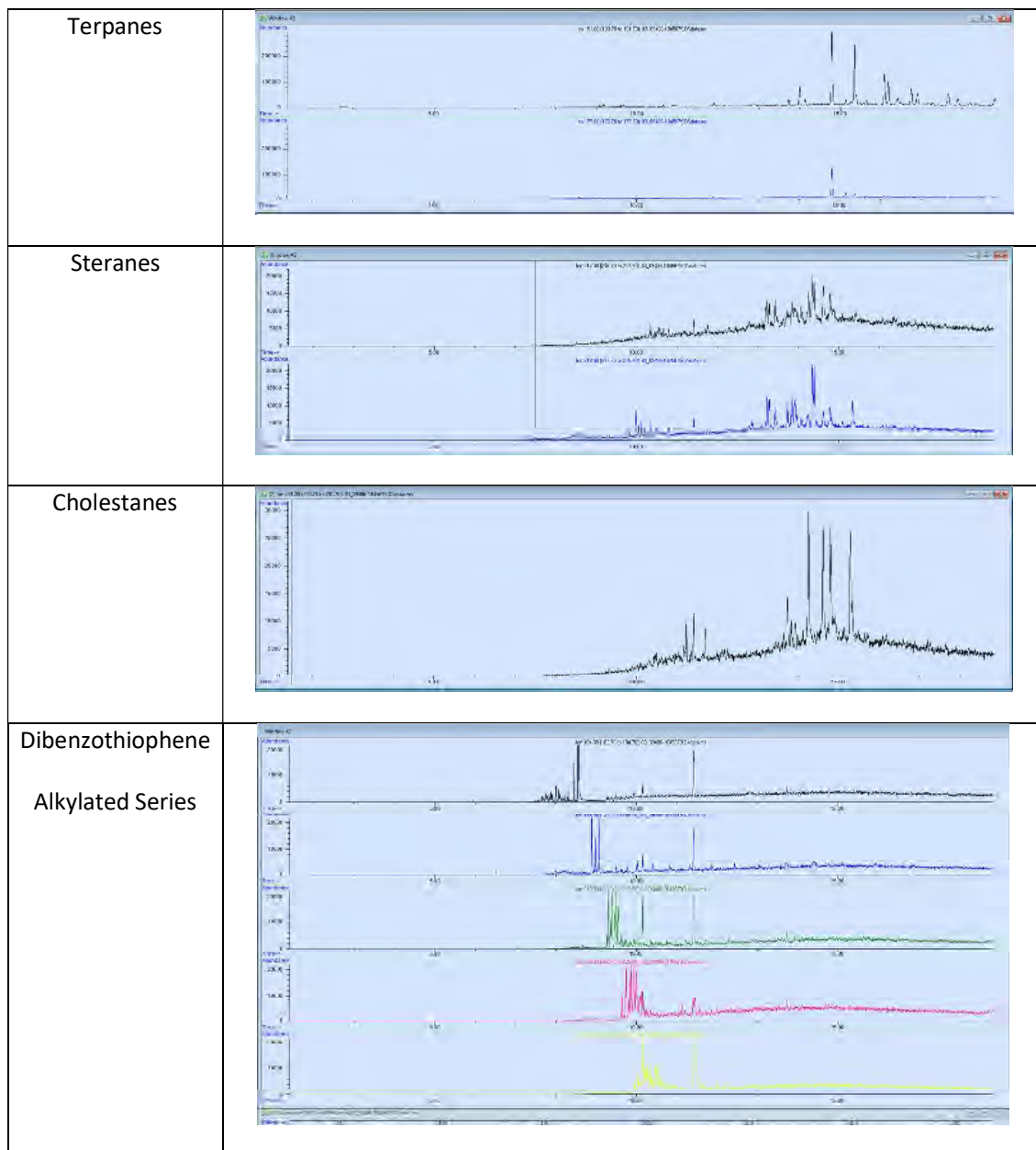


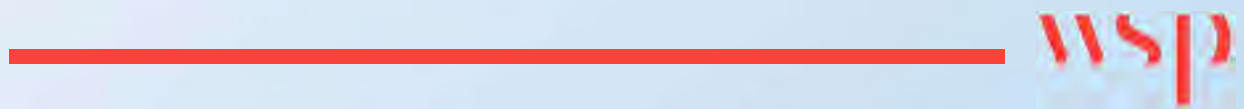
Figure 8 Biomarkers BH106 (1845679)

4.0 References

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Appendix E

FIELD DATA



FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH101

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	25.20m	Cover Type	Flush lockable protective cover
Filter Zone	2.50 - 25.20m	Ground Level	25.20 m OD
Date Installed	5 May 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	10:39:00		24.40	YES	0.0	2.1	2.1	16.1	
17-Jun-2021	09:15:00		24.40	NO	0.0	4.2	4.2	21.0	
1-Jul-2021	16:06:00		24.40	NO	0.0	4.0	4.0	15.4	
14-Jul-2021		2.72	24.40	NO	0.0	5.4	5.4	21.3	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH101

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	25.20m	Cover Type	Flush lockable protective cover
Filter Zone	2.50 - 25.20m	Ground Level	25.20 m OD
Date Installed	5 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	10:39:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	09:15:00	Light	Slight	Dry	GA5000	JP	
1-Jul-2021	16:06:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH102

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	20.00m	Cover Type	Flush lockable protective cover
Filter Zone	1.50 - 20.00m	Ground Level	25.99 m OD
Date Installed	11 May 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	11:14:00		19.76	YES	0.0	1.1	1.1	19.0	
17-Jun-2021	10:15:00		19.76	NO	0.0	3.2	3.2	20.0	
1-Jul-2021	15:54:00		19.76	NO	0.0	3.4	3.4	15.2	
14-Jul-2021		3.49	19.76	NO	0.0	3.8	3.8	20.9	

Remarks

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Form 003/1

FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH102

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	20.00m	Cover Type	Flush lockable protective cover
Filter Zone	1.50 - 20.00m	Ground Level	25.99 m OD
Date Installed	11 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	11:14:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	10:15:00	Light	Slight	Dry	GA5000	JP	
1-Jul-2021	15:54:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

geotechnics

FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No. PN214217

Borehole BH103

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	30.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 30.00m	Ground Level	25.78 m OD
Date Installed	21 May 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	11:02:00		29.73	YES	0.1	1.4	1.4	15.5	
17-Jun-2021	10:00:00		29.73	NO	0.0	4.0	4.0	20.5	
1-Jul-2021	15:42:00		29.73	NO	0.0	5.2	5.2	8.5	
14-Jul-2021		3.32	29.73	NO	0.0	7.3	7.3	21.5	

Remarks

geotechnics

FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH103

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	30.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 30.00m	Ground Level	25.78 m OD
Date Installed	21 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	11:02:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	10:00:00	Light	Slight	Dry	GA5000	JP	
1-Jul-2021	15:42:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH104

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	25.00m	Cover Type	Flush lockable protective cover
Filter Zone	1.50 - 25.00m	Ground Level	24.99 m OD
Date Installed	6 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	10:28:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	10:30:00	Light	Slight	Dry	GA5000	JP	
1-Jul-2021	15:36:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH105

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	30.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 30.00m	Ground Level	25.27 m OD
Date Installed	26 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	09:58:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	11:00:00	Light	Slight	Dry	GA5000	JP	
1-Jul-2021	15:30:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks



FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH107

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	20.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 20.00m	Ground Level	25.63 m OD
Date Installed	28 May 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	09:46:00		19.60	NO	0.0	1.7	1.7	18.1	
17-Jun-2021	07:30:00		19.35	YES	0.0	0.4	0.2	21.1	
1-Jul-2021	15:06:00		19.35	NO	0.0	1.0	1.0	19.4	
14-Jul-2021		3.33	19.35	NO	0.0	0.4	0.1	21.5	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH107

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	20.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 20.00m	Ground Level	25.63 m OD
Date Installed	28 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	09:46:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	07:30:00	Light	Cloudy	Dry	GA5000	JP	
1-Jul-2021	15:06:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH108

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	20.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 20.00m	Ground Level	24.69 m OD
Date Installed	14 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	09:33:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	07:10:00	Light	Cloudy	Dry	GA5000	JP	
1-Jul-2021	15:12:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021	: :	Still	Cloudy	Dry	GA5000	JP	

Remarks



FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH109

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	25.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 25.00m	Ground Level	25.93 m OD
Date Installed	19 May 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	09:13:00		24.78	NO	0.1	0.6	0.6	5.5	
17-Jun-2021	07:45:00		23.70	YES	0.0	1.5	1.5	20.7	
1-Jul-2021	15:00:00		23.70	NO	0.0	3.4	3.4	2.1	
14-Jul-2021		3.71	23.70	NO	0.0	4.9	4.9	21.3	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH109

Client RENAKER BUILD LIMITED

Sheet No. 1 (2 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	25.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 25.00m	Ground Level	25.93 m OD
Date Installed	19 May 2021		

Date	Time	Oxygen (Steady) (% VOL)	Hydrogen Sulphide H2S (ppm)	Carbon Monoxide CO (ppm)	Balance Check (%)	Barometric Pressure (mbar)	Flow Rate (Peak) (l/hr)	Flow Rate (Steady) (l/hr)	Remarks
2-Jun-2021	09:13:00	5.5	0.0	2.0	93	1017	0.0	0.0	
17-Jun-2021	07:45:00	5.5	1.0	1.0	93	1009	0.0	0.0	
1-Jul-2021	15:00:00	2.1	0.0	0.0	93	1013	0.0	0.0	
14-Jul-2021		2.2	0.0	0.0	93	1018	0.0	0.0	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Client RENAKER BUILD LIMITED

Borehole BH109

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	25.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 25.00m	Ground Level	25.93 m OD
Date Installed	19 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	09:13:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	07:45:00	Light	Cloudy	Dry	GA5000	JP	
1-Jul-2021	15:00:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH110

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	20.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 20.00m	Ground Level	25.79 m OD
Date Installed	28 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	09:05:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	08:00:00	Light	Cloudy	Dry	GA5000	JP	
1-Jul-2021	14:54:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH111

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	25.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 25.00m	Ground Level	26.40 m OD
Date Installed	20 May 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	08:35:00		24.86	NO	0.0	3.8	3.8	14.9	
17-Jun-2021	08:35:00		24.73	YES	0.0	6.9	6.9	20.7	
1-Jul-2021	14:36:00		24.73	NO	0.0	1.8	1.8	18.0	
14-Jul-2021		4.22	24.73	NO	0.0	0.8	0.1	21.6	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole BH111

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	25.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 25.00m	Ground Level	26.40 m OD
Date Installed	20 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	08:35:00	Light	Slight	Dry	GA5000	JG	
17-Jun-2021	08:35:00	Light	Slight	Dry	GA5000	JP	
1-Jul-2021	14:36:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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Project TRINITY ISLANDS

Project No PN214217

Client RENAKER BUILD LIMITED

Borehole BH112

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	20.00m	Cover Type	Flush lockable protective cover
Filter Zone	3.00 - 20.00m	Ground Level	25.67 m OD
Date Installed	27 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	08:44:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	08:20:00	Light	Cloudy	Dry	GA5000	JP	
1-Jul-2021	14:42:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole WS101

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	1.60m	Cover Type	Flush lockable protective cover
Filter Zone	0.50 - 1.60m	Ground Level	24.91 m OD
Date Installed	29 April 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	10:46:00		1.28	NO	0.0	11.4	11.4	2.4	
17-Jun-2021	09:30:00		1.28	NO	0.0	15.8	15.8	20.4	
1-Jul-2021	16:00:00		1.28	NO	0.0	1.2	1.2	18.9	
14-Jul-2021		DRY	1.28	NO	0.0	14.2	14.2	21.3	

Remarks

FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole WS102

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	3.00m	Cover Type	Flush lockable protective cover
Filter Zone	1.50 - 3.00m	Ground Level	25.59 m OD
Date Installed	29 April 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	10:55:00		3.07	NO	0.0	2.6	2.6	15.7	
17-Jun-2021	09:45:00		3.07	NO	0.0	3.3	3.3	20.2	
1-Jul-2021	15:48:00		3.08	NO	0.0	3.5	3.5	14.5	
14-Jul-2021		DRY	3.08	NO	0.0	1.1	1.1	19.7	

Remarks

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Project TRINITY ISLANDS

Project No PN214217

Borehole WS102

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	3.00m	Cover Type	Flush lockable protective cover
Filter Zone	1.50 - 3.00m	Ground Level	25.59 m OD
Date Installed	29 April 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	10:55:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	09:45:00	Light	Slight	Dry	GA5000	JP	
1-Jul-2021	15:48:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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Project TRINITY ISLANDS

Project No PN214217

Borehole WS104A

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	2.00m	Cover Type	Flush lockable protective cover
Filter Zone	0.50 - 2.00m	Ground Level	25.08 m OD
Date Installed	6 May 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	10:18:00		2.17	NO	0.0	1.4	1.4	16.8	
17-Jun-2021	11:30:00		2.17	NO	0.0	1.6	1.7	20.2	
1-Jul-2021	15:24:00		2.17	NO	0.0	0.9	0.9	19.1	
14-Jul-2021		DRY	2.17	NO	0.0	1.8	1.8	21.5	

Remarks

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Project TRINITY ISLANDS

Project No PN214217

Borehole WS104A

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	2.00m	Cover Type	Flush lockable protective cover
Filter Zone	0.50 - 2.00m	Ground Level	25.08 m OD
Date Installed	6 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	10:18:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	11:30:00	Light	Slight	Dry	GA5000	JP	
1-Jul-2021	15:24:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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Project TRINITY ISLANDS

Project No PN214217

Borehole WS105

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	3.00m	Cover Type	Flush lockable protective cover
Filter Zone	0.90 - 3.00m	Ground Level	25.19 m OD
Date Installed	29 April 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	09:22:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	07:20:00	Light	Cloudy	Dry	GA5000	JP	
1-Jul-2021	14:30:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021	: :	Still	Cloudy	Dry	GA5000	JP	

Remarks



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Project TRINITY ISLANDS

Project No PN214217

Borehole WS106

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	1.90m	Cover Type	Flush lockable protective cover
Filter Zone	0.50 - 1.90m	Ground Level	26.21 m OD
Date Installed	5 May 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	08:24:00		1.90	NO	0.0	5.3	5.3	15.8	
17-Jun-2021	08:45:00		1.90	NO	0.0	3.6	3.6	20.5	
1-Jul-2021	16:12:00		1.90	NO	0.0	4.0	4.0	16.5	
14-Jul-2021		DRY	1.90	NO	0.0	4.0	3.9	21.8	

Remarks

FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole WS106

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	1.90m	Cover Type	Flush lockable protective cover
Filter Zone	0.50 - 1.90m	Ground Level	26.21 m OD
Date Installed	5 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	08:24:00	Light	Slight	Dry	GA5000	JG	
17-Jun-2021	08:45:00	Light	Slight	Dry	GA5000	JP	
1-Jul-2021	16:12:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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Project TRINITY ISLANDS

Project No PN214217

Borehole WS107

Client RENAKER BUILD LIMITED

Sheet No. 1 (1 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	1.80m	Cover Type	Flush lockable protective cover
Filter Zone	0.50 - 1.80m	Ground Level	25.54 m OD
Date Installed	5 May 2021		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Water Sample Taken (Yes/No)	Methane CH4 (% VOL)	Carbon Dioxide (Peak) (% VOL)	Carbon Dioxide (Steady) (% VOL)	Oxygen (Peak) (% VOL)	Remarks
2-Jun-2021	08:55:00		1.80	NO	0.1	1.1	1.1	19.8	
17-Jun-2021	08:15:00		1.80	NO	0.0	1.6	1.6	20.6	
1-Jul-2021	14:48:00		1.80	NO	0.0	1.8	1.8	18.8	
14-Jul-2021		DRY	1.80	NO	0.0	2.8	2.8	20.9	

Remarks

FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TRINITY ISLANDS

Project No PN214217

Borehole WS107

Client RENAKER BUILD LIMITED

Sheet No. 1 (3 of 3)

Installation Details

Installation Type	Standpipe	Diameter	50mm
Depth to Base	1.80m	Cover Type	Flush lockable protective cover
Filter Zone	0.50 - 1.80m	Ground Level	25.54 m OD
Date Installed	5 May 2021		

Date	Time	Wind	Cloud	Rain	Equipment Used	Monitored by	Remarks
		0	0	0	0	0	
2-Jun-2021	08:55:00	Still	Slight	Dry	GA5000	JG	
17-Jun-2021	08:15:00	Light	Cloudy	Dry	GA5000	JP	
1-Jul-2021	14:48:00	Light	Slight	Dry	GFM436	JG	
14-Jul-2021		Still	Cloudy	Dry	GA5000	JP	

Remarks

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Form 003/1

Appendix F

APPROACH TO HUMAN HEALTH GENERIC RISK ASSESSMENT



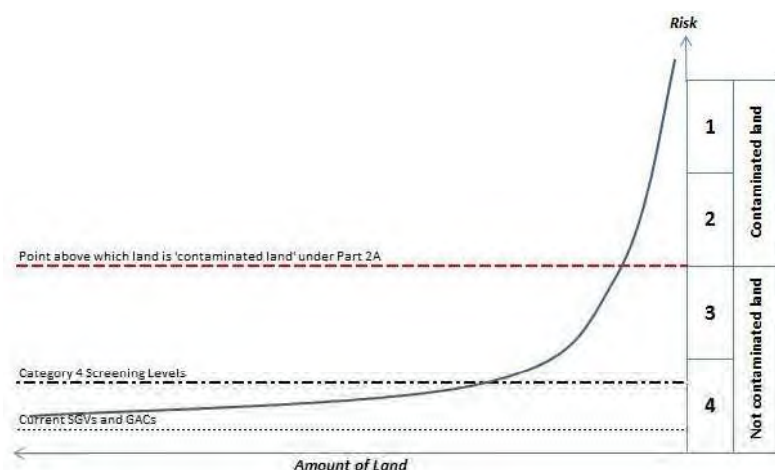
METHODOLOGY FOR THE DERIVATION OF GENERIC QUANTITATIVE ASSESSMENT CRITERIA TO EVALUATE RISKS TO HUMAN HEALTH FROM SOIL & GROUNDWATER CONTAMINATION

UK APPROACH

In the UK, the potential risks to human health from contamination in the ground are usually evaluated through a generic quantitative risk assessment (GQRA) approach. This allows generic and conservative exposure assumptions to be readily applied to risk assessments, and can be a useful tool for rapidly screening data and to identify those contaminants or scenarios that could benefit from further investigation and/or site-specific detailed quantitative risk assessment (DQRA). Current industry good practice is to use the approach presented in the Environment Agency (EA) publications SR2¹ and SR3². This approach allows the derivation of Generic Assessment Criteria (GACs), primarily for chronic exposure.

In April 2012, the Department of Environment, Food and Rural Affairs (Defra) published updated statutory guidance³ which introduced a four category approach to determining whether land in England and Wales is contaminated or not on the grounds of significant possibility of significant harm (SPOSH). **Figure 1** presents a graphical representation of the categories.

Figure 1: Four Categories for Determining if Land Represent a SPOSH



Cases classified as Category 1 are considered to be SPOSH based on actual evidence or an unacceptably high probability of harm existing. Category 4 cases are those where there is no risk, or a low risk of SPOSH.

¹ Environment Agency 'Human Health Toxicological Assessment of Contaminants in Soil', Report SC050021/SR2. January 2009.

² Environment Agency 'Updated Technical Background to the CLEA Model', Report SC050021/SR3. January 2009.

³ Defra 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance'. April 2012.

GACs represent a minimal risk level, well within Category 4. A 2014 publication by Contaminated Land: Applications in Real Environments (CL:AIRE), SP1010⁴ and endorsed by Defra⁵ provided an approach to determine Category 4 Screening Levels (C4SLs) which are higher than the GACs whilst being “more pragmatic but still strongly precautionary”. It also provided C4SLs for six contaminants of concern. Although the C4SLs were designed to support Part 2A assessments to determine ‘contaminated land’ they are specifically mentioned, along with reference to the Part 2A statutory guidance, by the Department for Communities and Local Government (DCLG) for use in a planning context⁶.

An updated version the Contaminated Land Exposure Assessment (CLEA) Workbook (v1.071) was released by the EA in September 2015 to take into account the publication of SP1010. The updates comprised: additional toxicity data for the six chemicals for which C4SLs were derived; two new public open space land use scenarios; updated exposure parameters; options to run the model using C4SL exposure assumptions; and increased functionality. There were no changes to algorithms, so it is still possible to replicate the withdrawn SGVs using the input parameters held within v1.071.

It should be noted that the four category approach has not been adopted in Scotland under Part 2A or the planning regime. The Part 2A statutory guidance applicable in Scotland (Paper SE/2006/44 dated May 2006) does not reflect the changes introduced by Defra in April 2012 which allow for the use of C4SLs within Part 2A risk assessments. Additionally, it is considered that the principal of ‘minimal risk’ should still apply under planning in Scotland, based on current guidance.

WSP APPROACH

Following the withdrawal of the SGVs, and in the absence of an industry-wide, accepted set of GACs it is down to individual practitioners to derive their own soil assessment criteria. WSP has used the approach provided within SR2, SR3, SP1010, CLEA Workbook v1.071 and SR4⁷ to produce a set of minimal risk GACs. The chemical-specific data within two key publications were considered during their production: CL:AIRE 2010⁸ and LQM 2015⁹. Both documents provide comprehensive sets of GACs for different contaminants of concern.

The LQM Suitable For Use Levels (S4ULs) have selected exposure parameters consistent with the C4SL exposure scenarios. This approach was rejected by WSP as not representing minimal risk. However, the LQM S4UL document was critically reviewed and the approach and chemical input parameters were utilised where considered to be appropriate.

An industry-led C4SL Working Group is in the process of deriving a larger set of C4SLs in the near future, for approximately 20 contaminants. This will include a critical review of the chemical input data for all selected substances, and may therefore lead to further amendments to the chemical input data used in the WSP in-house screening values. It is considered likely that the contaminant list will

⁴ CL:AIRE ‘Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination’ SP1010, Final Project Report (Revision 2). September 2014.

⁵ Defra ‘SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document’. December 2014.

⁶ DCLG Planning Practice Guidance ‘Land Affected by Contamination’, particularly Paragraphs 001 and 007. Ref IDs: 33-001-20140306 & 33-007-20140612.

⁷ Environment Agency ‘CLEA Software (Version 1.05) Handbook (and Software)’, Report SC050021/SR4. September 2009.

⁸ CL:AIRE ‘The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment’. ISBN 978-1-05046-20-1. January 2010.

⁹ Nathanail et al ‘The LQM/CIEH S4ULs for Human Health Risk Assessment’, Land Quality Press, ISBN 978-0-9931084-0-2. 2015.



crossover with the 2009 EIC/AGS/CL:AIRE GACs. As such, this document was not critically reviewed by WSP.

WSP's current approach to the assessment of risks to human health is to continue to evaluate minimal risk through the use of in-house derived GACs, and to use the published C4SLs as a secondary tier of assessment until such time as additional C4SLs are published and/or in-house values are derived.

EXPOSURE MODELS

LAND USES

WSP has largely adopted the exposure assumptions of the generic land use scenarios included within SR3, with two additional public open space scenarios included from within SP1010 and two bespoke exposure scenarios (highways):

- Residential with homegrown produce consumption;
- Residential without homegrown produce consumption;
- Allotments;
- Commercial;
- Public open space near residential housing (POS_{resi});
- Public park (POS_{park});
- Highways (surface soils); and
- Highways (subsurface soils).

Exceptions are described in the following Sections.

SOIL PROPERTIES

SR3 assumes a sandy loam soil with a pH of 7 and a Soil Organic Matter (SOM) content of 6% for its generic land uses, based on the geographical spread of topsoils in the UK. WSP has adopted these default values. In addition, GACs based on an SOM of 1% and 2.5% have been derived, based on common experience of the nature of Made Ground and lack of topsoil on many brownfield sites.

RECEPTOR CHARACTERISTICS AND BEHAVIOURS

SP1010 provides some updated exposure parameters for long-term inhalation rates¹⁰ and the consumption rates for homegrown produce¹¹ compared to those provided in SR3. This data was used to derived WSP's GACs.

The changes in inhalation rates do not apply to the allotment generic land use scenario, as these are based on the breathing rates for short-term exposure of light to moderate intensity activity which were derived from a study that was not updated in USEPA 2011, so the SR3 rates were retained.

¹⁰ USEPA, National Centre for Environmental Assessment 'Exposure Factors Handbook: 2011 Edition' EPA/600/R-09/052F. September 2011.

¹¹ National Diet and Nutrition Survey 2008/2009 to 2010/2011.

HIGHWAYS EXPOSURE SCENARIOS

Human health GAC for a Highways exposure scenario have been derived. The site area is defined by publicly accessible land adjacent to highways, comprising both hard and soft landscaped areas. Exposure is considered to be largely transitory.

There are no publicly available GAC for this exposure scenario. Consequently, WSP have derived GAC for the following exposure scenarios:

- Highways (surface soils); and
- Highways (sub-surface soils).

Surface soils GAC are for soil at ground level and within 300mm of the surface. Conversely, subsurface GAC are for soils at a depth exceeding 0.3m bgl. These GAC are not to be used as import criteria.

The critical receptor is a young female child, CLEA age classes 4-9. This is consistent with the critical receptor for the POS(resi) exposure scenario, and considered to be appropriate for a child potentially playing outside without direct adult supervision.

For all GAC, a sandy loam soil and a soil organic matter content of 1% is assumed. There is no building on site.

Exposure scenarios for surface and subsurface soils are detailed below. These are considered to be conservative estimates, due to the mostly transitory use of publically accessible lands adjacent to highways.

HIGHWAYS GAC (SURFACE SOILS)

The relevant exposure pathways include direct soil and dust ingestion, dermal contact (outdoors) and the inhalation of outdoor dust and vapour.

The exposure frequency is 170 days per annum, and the occupancy period outdoors is 1 hour per day (as per the POS (resi) exposure scenario). The soil and dust ingestion rate has been set at 50 mg/day, consistent with a POS(park) exposure scenario.

HIGHWAYS GAC (SUBSURFACE SOILS)

The single relevant exposure pathway is the inhalation of outdoor vapour. Direct exposure pathways are not viable due to the depth of the soils below ground level.

The exposure frequency is 170 days per annum, and the occupancy period outdoors is 1 hour per day (as per the POS (resi) exposure scenario). The soil and dust ingestion rate has been set to zero, as direct exposure pathways to soils at this depth are not viable.

CHEMICAL DATA

PHYSICO-CHEMICAL PARAMETERS

Physico-chemical properties for the contaminants for which GACs have been derived have been obtained following critical review of the following hierarchy of data sources:

1. Environment Agency/Defra SGV reports where available;
2. Environment Agency '*Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values*', Report SC050021/SR7, November 2008; and
3. Published fate and transport reviews within Nathanail et. al 2015 and CL:AIRE 2010.

Where appropriate, and where sufficient data is available, values were adjusted to reflect a UK soil temperature of 10°C (e.g. K_{aw}).

TOXICOLOGICAL DATA

Toxicological data for the derivation of minimal risk Health Criteria Values (HCV) for each contaminant was selected with due regard to the approach presented in SR2. Where appropriate, the following hierarchy of data sources was used:

1. UK toxicity reviews published by authoritative bodies including:
 - EA;
 - Public Health England (PHE);
 - Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT); and
 - Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment (COC).
2. Authoritative European sources such as European Food Standards Agency (EFSA)
3. International organisations including:
 - World Health Organisation (WHO); and
 - Joint FAO/WHO Expert Committee on Food Additives (JECFA).
4. Authoritative country-specific sources including:
 - United States Environmental Protection Agency (USEPA);
 - US Agency for Toxic Substances and Disease Registry (ATSDR);
 - US Integrated Risk Information System (IRIS); and
 - Netherlands National Institute for Public Health and the Environment (RIVM).

Factors such as the applicability of the data to human health (e.g. epidemiological vs. animal studies), the quality of the data, the level of uncertainty in the results and the age of the data were also taken into account in the final selection. Details for specific substances are available on request.

MEAN DAILY INTAKES

Estimations of background exposure for each threshold substance have been updated. In line with the SR2 approach, the exposure from non-threshold substances in the soil does not take into account exposure from other sources, and as such GACs were derived without consideration of the Mean Daily Intake (MDI) for those substances.

The data published by the EA in its series of TOX reports between 2002 and 2009 was evaluated to determine whether the values were considered to remain valid today. Values from these current UK published sources were not amended unless they were considered to be significantly different so that the GACs remained as comparable as possible with the revoked SGVs.

ORAL MEAN DAILY INTAKES

Oral MDI were generally estimated as the sum of exposure via the ingestion of food and drinking water using the default adult physiological parameters presented in Table 3.3 of SR2.

Data on the exposure of substances from food ingestion was generally obtained from UK Total Diet Studies (TDS) published by the Food Standards Agency (FSA) and its predecessor the Ministry of Agriculture, Fisheries and Food (MAFF) and from studies commissioned by COT. Where no UK-specific data was available, MDI were derived from the European Food Safety Authority (EFSA), Health Canada and US sources. This was a rare occurrence, and in these instances, the data was evaluated to determine its applicability to the UK.

Data on the concentrations of substances in tap water was obtained from a variety of sources. UK data was used where available, with preference given to Drinking Water Inspectorate (DWI) 2014 data from water company tap water testing (LOD, 1st and 99th percentile data is available). Where the substance was not included in tap water testing, other UK sources of information were considered including:

- DWI data from water company tap water testing from previous years;
- COT; and
- FSA.

Where UK data was not available, a number of other data sources were considered, largely WHO International Programme on Chemical Safety (IPCS) Concise International Chemical Assessment Documents (CICADs) and background documents for the development of Guidelines for Drinking Water Quality, using professional judgement on the relevance of the data to the UK. The final decision on the MDI from drinking water was made using professional judgement on the balance of relevance and probability, taking into account the detection limit where not detected, Koc and solubility, reduction in use of the substance, banned substances, tight controls (e.g. on explosives) and with due consideration to the SR2 instruction that “if no data or information in background exposure are available, background exposure should be assumed to be negligible and the MDI set to zero....”.

Data from other countries was generally not used because it was considered that the hydrogeology of these countries along with industrial practices were unlikely to be reflective of the UK.

INHALATION MEAN DAILY INTAKES

Inhalation MDIs were based on estimates of average daily exposure by the inhalation pathway and calculated using the default adult physiological parameters presented in Table 3.3 of SR2.

The inhalation MDIs were generally estimated using background exposure data from the UK, derived from Defra's UK-AIR: Air Information Resource¹², which provides ambient air quality data from a number of sites forming a UK-wide monitoring network. The MDIs for heavy metals were based on rolling annual average metal mass concentration data from Defra's UK Heavy Metals Monitoring Network from the period October 2009 to September 2010¹³.

Information for some substances was obtained from UK sources including Environment Agency TOX reports and data from the UK Expert Panel on Air Quality Standards (EPAQS). Where recent UK data was not available, data was sourced from the International Programme on Chemical Safety (IPCS), the World Health Organisation (WHO), the Agency for Toxic Substances and Diseases Registry (ATSDR), Health Canada, and various other peer-reviewed sources summarised by LQM/CIEH¹⁴.

For other substances, where no data or information on background exposure was available, background exposure was assumed to be negligible and the MDI set at 0.5*TDI in accordance with guidance in SR2.

PLANT UPTAKE

Soil to plant concentration factors are available in CLEA v1.071 for arsenic, cadmium, hexavalent chromium, lead, mercury, nickel and selenium. For all remaining inorganic chemicals, concentration factors were obtained using the PRISM model. Substance-specific correction factors have been selected in accordance with the guidance established within SR3. This is consistent to the approach utilised in the derivation of the LQM S4UL and the EIC/AGS/CL:AIRE GAC.

Where there is a lack of appropriate data to enable the derivation of specific soil to plant concentrations factors for organic chemicals, plant uptake was modelled within CLEA v1.071 using the generic equations recommended within SR3, as follows:

- Green Vegetables – Ryan et al. (1988);
- Root Vegetables – Trapp (2002);
- Tuber Vegetables – Trapp et al. (2007); and
- Tree Fruit – Trapp et al. (2003).

There are no suitable models available for modelling uptake for herbaceous fruit or shrub fruit. Exposure is considered negligible.

¹² Crown 2016 copyright Defra via uk-air.defra.gov.uk, licenced under the Open Government Licence (OGL).

¹³ Defra, 2013 Spreadsheet of historic data for multiple years for the Metals network. Available online at: <http://uk-air.defra.gov.uk/data/metals-data>. [Accessed 13/03/2016].

¹⁴ LQM/CIEH, 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment.

SOIL SATURATION LIMITS

GACs are not limited to their theoretical soil saturation within CLEA, although where either the aqueous or the vapour-based saturation is exceeded, this is highlighted within the Workbook (compared with the lower of the two values). This affects pathways which depend on partitioning calculations so in reality this only affects the vapour pathways and is relevant to organic substances and other substances, such as elemental mercury, that have a significant volatile component. However, the Workbook highlights saturation for direct contact pathways to indicate to the user where further qualitative consideration of free phase contamination at the surface may be required.

Where the lower of the two saturation limits is exceeded and the vapour pathway is the only exposure route being considered, the chronic risks to human health are likely to be negligible. Further evaluation could be undertaken using an alternative model suitable for evaluating non-aqueous phase liquids (NAPLs), such as the Johnson & Ettinger (J&E) approach described in USEPA 2003. However, WSP considers that if NAPLs are suspected, given the known limitations and over-simplifications of J&E, soil vapour monitoring is a more accurate way of assessing potential risks.

Where the lower saturation limit is exceeded for the vapour pathway and a number of exposure routes are being considered, then the contribution from the NAPL via vapour inhalation to the overall exposure can be evaluated using the procedure provided in SR4. WSP would evaluate this as part of a DQRA process or through soil vapour monitoring on-site to determine site-specific soil vapour concentrations.

CHEMICAL SPECIFIC ASSUMPTIONS

CYANIDES

Cyanide has high acute toxicity, and short term exposure is an important consideration when assessing the risks from soils contaminated with cyanide. The primary risk to human receptors from free cyanide in soils is an acute risk.

There is no current UK guidance available for calculating acute risks from free cyanide. Consequently, GAC for acute exposure were derived using the algorithms presented in MADEP 1992¹⁵ and assuming a one-off ingestion of 10g of soil (this conservative value has been taken as an upper bound estimate for a one-off soil ingestion rate amongst children). Receptor body weights have been selected according to the critical receptor for each exposure scenario. The lowest of the chronic and acute GAC for each land use scenario were adopted by WSP.

LEAD

The SGV for lead was withdrawn by the EA in 2009, and in 2011 the EA withdrew their published TOX report in light of new scientific evidence. The C4SL for lead was derived using the latest scientific evidence from a large human dataset. As such, no chemical-specific margin was applied in the derivation of the C4SL for lead. It may be possible for WSP to derive a GAC for lead using the same dataset and applying a chemical-specific margin, but the value is likely to be lower than UK natural background concentrations. Therefore, WSP has adopted the toxicological data used to derive the C4SLs in deriving the GAC for lead until such time as alternative GACs are published by an authoritative body. The relative bioavailability was set at 100% in line with the approach taken for other GACs, whereas the C4SL assumes 60% for soil and 64% for airborne dust. Thus, the WSP GAC are lower than the C4SLs.

¹⁵ MADEP 'Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration' 1992. http://www.mass.gov/dep/toxics/cn_soil.htm

POLYCYCLIC AROMATIC HYDROCARBONS

WSP's approach to the assessment of polycyclic aromatic hydrocarbons (PAHs) uses the surrogate marker approach. BaP was used as a surrogate marker for all genotoxic PAHs in line with the Health Protection Agency 2010¹⁶ recommendations and SP1010. This assumes that the PAH profile of the data is similar to that of the coal tars used in the Culp *et al* oral carcinogenicity study from which the toxicity data for BaP was produced. In reality, this profile has been shown by HPA to be applicable on the majority of contaminated sites based on assessment of sites across the country.

The alternative is the Toxic Equivalency Factor (TEF) approach which uses a reference compound and assigns TEFs for other compounds based on estimates of potency. Key uncertainties with this approach include the assumption that all compounds have the same toxic mechanism of action within the body and that no compounds with a greater potency than the reference compound are present. It is considered by the HPA that the TEF approach is likely to under predict the true carcinogenicity of PAHs and therefore favours the surrogate marker approach.

For these reasons, WSP considers that the adoption of BaP as a surrogate marker for genotoxic PAHs, as opposed to the TEF approach, is reasonable. In rare cases where the PAH profile may differ from the wide definitions of the Culp *et al* study the user should discuss their project with an experienced risk assessor. In addition, WSP has derived a GAC for naphthalene, which is commonly a risk driver due to its high volatility, relative to other PAH compounds.

TRIMETHYLBENZENES

The GAC for trimethylbenzenes can be used for the assessment of any individual isomer (1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene or 1,3,5-trimethylbenzene), or a mixture of the three isomers.

CHEMICAL GROUPS

For a number of chemical groups, the available toxicity data is for combinations of chemicals. Given that the physico-chemical parameters may differ between the chemicals, the GACs for the chemicals within the groups have been calculated and then the lowest GAC selected to represent the entire group. This was the approach taken by the EA for m-, o- and p-xylenes, and has also been adopted by WSP for:

- 2-chlorophenol, 2,4-dichlorophenol, 2,4,6-trichlorophenol and 2,3,4,6-tetrachlorophenol;
- 2-, 3- and 4-methylphenol (total cresols);
- aldrin and dieldrin; and
- α - and β -endosulphan.

¹⁶ HPA Contaminated Land Information Sheet 'Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs) 2010

EXPOSURE TO VAPOURS

INHALATION OF MEASURED VAPOURS

WSP has derived a set of soil vapour GACs (GAC_{sv}) that allow for the assessment of measured site soil vapour concentrations, using J&E, in order to establish potential risks via indoor inhalation of vapours. This methodology enables a more robust assessment of exposure via the inhalation of soil vapours indoors than using CLEA-derived soil GAC, as it is based upon measured soil vapour concentrations beneath the site. It also allows for the assessment of vapours from all source terms (i.e. groundwater, soil or NAPL). Outdoor inhalation was not included. WSP considers that the indoor inhalation pathway is the significantly dominant risk-driver.

The generic land use scenarios within CLEA (residential and commercial) that were used to derive the soil GAC were used to define the receptor and building characteristics for the soil vapour GAC. Only residential and commercial generic land use scenarios include the indoor inhalation of vapours pathway.

The GAC_{sv} were derived for three different soil types; sand, sandy loam and clay, reflecting the importance of this parameter within the J&E model. A depth to contamination of 0.85 m below the base of the building foundation was assumed (i.e. 1 m below ground level). This differs from the depth assumed for the soil GAC (0.5 m bgl), but was selected by WSP as a reasonable worst case scenario.

It is acknowledged that the J&E commonly over-predicts indoor vapour concentrations. In particular, it will significantly over-predict vapour concentrations for suspended floor slabs, which many new builds are constructed with, it does not take into account lateral migration and assumes an infinite source of contamination at steady state conditions. In addition, it is common for soil gas/vapour wells to be installed with at least 1 m of plain riser at the surface and this equates to a total depth of 0.85 m below the building foundation plus a 0.15 m thick foundation, and so is more representative of the depth that samples will be taken from.

The TDSIs and IDs for each substance were converted from $\mu g kg^{-1} bw day^{-1}$ to $\mu g m^{-3}$ using the standard conversions quoted in Table 3.3 of SR2, thereby replacing the need to model C_{air} in the equation:

$$C_{air} = \alpha \cdot C_{vap} \cdot 1,000,000 cm^3 m^{-3}$$

Where:

C_{air} is the concentration of vapours within the building, $mg m^{-3}$

α is the steady state attenuation coefficient between soil and indoor air, dimensionless

C_{vap} is the soil vapour concentration, $mg cm^{-3}$

The target concentrations within indoor air for each substance (C_{air}) are a function of receptor inhalation rates and occupancy periods, as defined by the site conceptual exposure model (assuming standard CLEA occupancy periods and receptors).

The attenuation factor was calculated using J&E (Equation 10.4 in SR3) and the resulting C_{vap} is equivalent to the GAC_{sv} for the modelled exposure scenario.

Where reported soil vapour concentrations exceed the relevant saturated vapour concentration, free product may occur, and the user should discuss their project with an experienced risk assessor.



INHALATION OF GROUNDWATER-DERIVED VAPOURS

WSP has derived a set of groundwater GACs (GAC_{gw}) to evaluate the potential risks through the indoor inhalation of groundwater-derived vapours by first applying the approach described above for the derivation of the WSP GAC_{sv} to determine the acceptable concentration in soil vapour directly above the water table.

The depth to groundwater was assumed to be 1 m bgl (i.e. 0.85 m below the base of the building foundation). This depth was considered to be more representative of commonly encountered groundwater conditions than the 0.5 m below the base of the building foundation (i.e. 0.65 m bgl) that is used by CLEA for an unsaturated source present in the overlying soil.

The GAC_{gw} was then back-calculated from the GAC_{sv} using the air-water partition coefficient (K_{aw}) for each substance.

The WSP Groundwater Vapour GAC are protective against a dissolved phase contaminant source only. If the presence of NAPL is suspected, the risks from this source will need to be assessed. Where reported groundwater concentrations exceed the relevant solubility limit, free product may occur, and the user should discuss their project with an experienced risk assessor.

Appendix G

SOIL GQRA GAC SCREEN



[illegible]



Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



UFWH8-G5GPT-EZH4B

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in **pale yellow**.

Job name

Trinity Islands

Description/Comments

Site History: Waste incinerator, chemical works and depots

Current use: Asphalt covered car park

Lab used for soil analysis: DETS

Lab certificate number: 21-09486-1

Asbestos quantification was carried out on chrysotile bundles within BH112 at 1.0m bgl at a concentration of 0.046%. At this concentration, the sample it is considered to be below the hazardous waste threshold.

Despite a non-hazardous waste classification for BH106 at 0.15m bgl, there is no evidence of metal contaminant testing. Based on the ash content at this depth, there is a potential for high PAH and TPH and as such may require further testing to determine the correct classification.

This preliminary assessment is based on the available analytical data presented in the DETS certificates. Based on the stoichiometric ratios, several metal compounds were altered to more likely compounds based on the available data. It should be noted that any waste accepted into a landfill is at the landfill operator's discretion and further testing may be required.

Project

70082598

Site

Classified by

Name:
Billy Bradnum
Date:
07 Jul 2021 11:11 GMT
Telephone:
07823 445268

Company:
WSP

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

Course	Date
Hazardous Waste Classification	50% complete

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH101	0.2	Hazardous	HP 3(i), HP 7, HP 11	3
2	BH102	0.15	Hazardous	HP 3(i), HP 7, HP 11	6
3	BH102[2]	1	Hazardous	HP 7	9
4	BH103	0.5	Non Hazardous		11
5	BH104	0.2	Hazardous	HP 3(i), HP 7, HP 11	13
6	BH104[2]	0.5	Hazardous	HP 8	16
7	BH105	0.2	Hazardous	HP 3(i), HP 7, HP 11	18
8	WS101	0.2	Hazardous	HP 3(i), HP 7, HP 11	21
9	WS101[2]	0.5	Non Hazardous		24
10	WS101[3]	1	Non Hazardous		26
11	WS105	0.5	Non Hazardous		28
12	WS105[2]	2.8	Non Hazardous		30
13	WS102	0.5	Non Hazardous		32
14	WS102[2]	1	Non Hazardous		34
15	WS106	0.3	Hazardous	HP 3(i), HP 7, HP 11	36
16	WS107	0.5	Non Hazardous		39
17	WS107[2]	1.7	Non Hazardous		41
18	WS108	0.3	Hazardous	HP 7, HP 10, HP 14	43



#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
19	WS104A	0.3	Non Hazardous	HP 7	46
20	WS104A[2]	1.1	Hazardous		48
21	BH106	0.15	Non Hazardous		51
22	BH106[2]	0.5	Non Hazardous		53
23	BH109	0.5	Non Hazardous		55
24	BH112	0.2	Non Hazardous		57
25	BH112[2]	0.5	Non Hazardous		59
26	BH112[3]	1	Non Hazardous		61
27	BH108	1	Non Hazardous		63
28	BH107	0.5	Non Hazardous		65
29	BH110	1	Non Hazardous		67
30	BH103[3]	0.2	Non Hazardous		69

Related documents

#	Name	Description
1	WM3.1 Contaminated Soils Template with Asbestos	waste stream template used to create this Job

Report

Created by: Billy Bradnum

Created date: 07 Jul 2021 11:11 GMT

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	71
Appendix B: Rationale for selection of metal species	72
Appendix C: Version	73



Classification of sample: BH101

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
BH101	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.2 m	Entry:
	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.25%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.25%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.25%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				8.4 mg/kg	1.32	11.091 mg/kg	0.00111 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.4 mg/kg	1.631	0.652 mg/kg	0.0000652 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	20.462 mg/kg	0.00205 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				120 mg/kg	1.126	135.107 mg/kg	0.0135 %			
	029-002-00-X	215-270-7	1317-39-1								



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	470	mg/kg		470	mg/kg	0.047 %		
	082-001-00-6											
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.49	mg/kg		0.49	mg/kg	0.000049 %		
	080-002-00-6											
8	nickel { nickel sulfate }				24	mg/kg	2.637	63.28	mg/kg	0.00633 %		
	028-009-00-5	232-104-9	7786-81-4									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
10	zinc { zinc sulphate }				110	mg/kg	2.469	271.623	mg/kg	0.0272 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
11	TPH (C6 to C40) petroleum group				2500	mg/kg		2500	mg/kg	0.25 %		
			TPH									
12	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
13	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
14	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
15	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
16	pH				9.1	pH		9.1	pH	9.1 pH		
			PH									
17	naphthalene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
	601-052-00-2	202-049-5	91-20-3									
18	acenaphthylene				0.34	mg/kg		0.34	mg/kg	0.000034 %		
		205-917-1	208-96-8									
19	acenaphthene				0.39	mg/kg		0.39	mg/kg	0.000039 %		
		201-469-6	83-32-9									
20	fluorene				0.28	mg/kg		0.28	mg/kg	0.000028 %		
		201-695-5	86-73-7									
21	phenanthrene				3.2	mg/kg		3.2	mg/kg	0.00032 %		
		201-581-5	85-01-8									
22	anthracene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
		204-371-1	120-12-7									
23	fluoranthene				6.6	mg/kg		6.6	mg/kg	0.00066 %		
		205-912-4	206-44-0									
24	pyrene				6.5	mg/kg		6.5	mg/kg	0.00065 %		
		204-927-3	129-00-0									
25	benzo[a]anthracene				3	mg/kg		3	mg/kg	0.0003 %		
	601-033-00-9	200-280-6	56-55-3									
26	chrysene				2.6	mg/kg		2.6	mg/kg	0.00026 %		
	601-048-00-0	205-923-4	218-01-9									
27	benzo[b]fluoranthene				11	mg/kg		11	mg/kg	0.0011 %		
	601-034-00-4	205-911-9	205-99-2									
28	benzo[k]fluoranthene				3.4	mg/kg		3.4	mg/kg	0.00034 %		
	601-036-00-5	205-916-6	207-08-9									
29	benzo[a]pyrene; benzo[def]chrysene				12	mg/kg		12	mg/kg	0.0012 %		
	601-032-00-3	200-028-5	50-32-8									
30	indeno[123-cd]pyrene				7.5	mg/kg		7.5	mg/kg	0.00075 %		
		205-893-2	193-39-5									
31	dibenz[a,h]anthracene				2.2	mg/kg		2.2	mg/kg	0.00022 %		
	601-041-00-2	200-181-8	53-70-3									



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
32	benzo[ghi]perylene				12 mg/kg		12 mg/kg	0.0012 %		
		205-883-8	191-24-2							
Total:								0.355 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: BH102

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
BH102	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.15 m	Entry:
	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.42%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.42%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.42%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				6 mg/kg	1.32	7.922 mg/kg	0.000792 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				1 mg/kg	1.631	1.631 mg/kg	0.000163 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				6.1 mg/kg	1.462	8.915 mg/kg	0.000892 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	14.637 mg/kg	0.00146 %			
	029-002-00-X	215-270-7	1317-39-1								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	64 mg/kg		64 mg/kg	0.0064 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.78 mg/kg		0.78 mg/kg	0.000078 %			
	080-002-00-6										
8	nickel { nickel sulfate }				5.9 mg/kg	2.637	15.556 mg/kg	0.00156 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				53 mg/kg	2.469	130.873 mg/kg	0.0131 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				4200 mg/kg		4200 mg/kg	0.42 %			
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
16	pH				9.2 pH		9.2 pH	9.2 pH			
			PH								
17	naphthalene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
18	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		205-917-1	208-96-8								
19	acenaphthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		201-469-6	83-32-9								
20	fluorene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		201-695-5	86-73-7								
21	phenanthrene				0.32 mg/kg		0.32 mg/kg	0.000032 %			
		201-581-5	85-01-8								
22	anthracene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		204-371-1	120-12-7								
23	fluoranthene				0.21 mg/kg		0.21 mg/kg	0.000021 %			
		205-912-4	206-44-0								
24	pyrene				0.35 mg/kg		0.35 mg/kg	0.000035 %			
		204-927-3	129-00-0								
25	benzo[a]anthracene				0.33 mg/kg		0.33 mg/kg	0.000033 %			
	601-033-00-9	200-280-6	56-55-3								
26	chrysene				0.21 mg/kg		0.21 mg/kg	0.000021 %			
	601-048-00-0	205-923-4	218-01-9								
27	benzo[b]fluoranthene				0.47 mg/kg		0.47 mg/kg	0.000047 %			
	601-034-00-4	205-911-9	205-99-2								
28	benzo[k]fluoranthene				0.11 mg/kg		0.11 mg/kg	0.000011 %			
	601-036-00-5	205-916-6	207-08-9								
29	benzo[a]pyrene; benzo[def]chrysene				0.46 mg/kg		0.46 mg/kg	0.000046 %			
	601-032-00-3	200-028-5	50-32-8								
30	indeno[123-cd]pyrene				0.04 mg/kg		0.04 mg/kg	0.000004 %			
		205-893-2	193-39-5								
31	dibenz[a,h]anthracene				0.03 mg/kg		0.03 mg/kg	0.000003 %			
	601-041-00-2	200-181-8	53-70-3								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
32		benzo[ghi]perylene			0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-883-8	191-24-2							
Total:								0.445 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: BH102[2]

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
BH102[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
1 m	

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.1%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				17 mg/kg	1.32	22.446	mg/kg	0.00224 %		
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.2 mg/kg	1.631	0.326	mg/kg	0.0000326 %		
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	20.462	mg/kg	0.00205 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				58 mg/kg	1.126	65.302	mg/kg	0.00653 %		
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	1000 mg/kg		1000	mg/kg	0.1 %		
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	080-002-00-6										
8	nickel { nickel sulfate }				18 mg/kg	2.637	47.46	mg/kg	0.00475 %		
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				65 mg/kg	2.469	160.504	mg/kg	0.0161 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10	mg/kg	<0.001 %		<LOD
12	benzene				<0.01 mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
13	toluene 601-021-00-3	203-625-9	108-88-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
14	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
15	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
16	pH		PH		7.8 pH		7.8 pH	7.8 pH			
17	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
18	acenaphthylene 205-917-1	208-96-8			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
19	acenaphthene 201-469-6	83-32-9			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
20	fluorene 201-695-5	86-73-7			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
21	phenanthrene 201-581-5	85-01-8			0.12 mg/kg		0.12 mg/kg	0.000012 %			
22	anthracene 204-371-1	120-12-7			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
23	fluoranthene 205-912-4	206-44-0			0.15 mg/kg		0.15 mg/kg	0.000015 %			
24	pyrene 204-927-3	129-00-0			0.17 mg/kg		0.17 mg/kg	0.000017 %			
25	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.1 mg/kg		0.1 mg/kg	0.00001 %			
26	chrysene 601-048-00-0	205-923-4	218-01-9		0.05 mg/kg		0.05 mg/kg	0.000005 %			
27	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.07 mg/kg		0.07 mg/kg	0.000007 %			
28	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
29	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.06 mg/kg		0.06 mg/kg	0.000006 %			
30	indeno[123-cd]pyrene 205-893-2	193-39-5			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
31	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
32	benzo[ghi]perylene 205-883-8	191-24-2			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
Total:									0.133 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Hazardous result
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification



Classification of sample: BH103

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH103	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				54 mg/kg	1.32	71.298 mg/kg	0.00713 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.6 mg/kg	1.631	0.978 mg/kg	0.0000978 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21 mg/kg	1.462	30.693 mg/kg	0.00307 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				190 mg/kg	1.126	213.919 mg/kg	0.0214 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	800 mg/kg		800 mg/kg	0.08 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	080-002-00-6										
8	nickel { nickel sulfate }				56 mg/kg	2.637	147.654 mg/kg	0.0148 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				300 mg/kg	2.469	740.789 mg/kg	0.0741 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]								
16	pH				6.9 pH		6.9 pH	6.9 pH			
17	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
18	acenaphthylene		205-917-1	208-96-8	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
19	acenaphthene		201-469-6	83-32-9	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
20	fluorene		201-695-5	86-73-7	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
21	phenanthrene		201-581-5	85-01-8	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
22	anthracene		204-371-1	120-12-7	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
23	fluoranthene		205-912-4	206-44-0	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
24	pyrene		204-927-3	129-00-0	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
26	chrysene	601-048-00-0	205-923-4	218-01-9	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
30	indeno[123-cd]pyrene		205-893-2	193-39-5	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
32	benzo[ghi]perylene		205-883-8	191-24-2	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
Total:									0.202 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: BH104

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
BH104	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
0.2 m	

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.38%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.38%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.38%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				1.7 mg/kg	1.32	2.245 mg/kg	0.000224 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.5 mg/kg	1.631	0.815 mg/kg	0.0000815 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				4.1 mg/kg	1.462	5.992 mg/kg	0.000599 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				9.9 mg/kg	1.126	11.146 mg/kg	0.00111 %			
	029-002-00-X	215-270-7	1317-39-1								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6		1	15 mg/kg		15 mg/kg	0.0015 %			
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6		1	0.14 mg/kg		0.14 mg/kg	0.000014 %			
8	nickel { nickel sulfate }	028-009-00-5	232-104-9		5.2 mg/kg	2.637	13.711 mg/kg	0.00137 %			
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8			<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]		22 mg/kg	2.469	54.325 mg/kg	0.00543 %			
11	TPH (C6 to C40) petroleum group		TPH		3800 mg/kg		3800 mg/kg	0.38 %			
12	benzene	601-020-00-8	200-753-7		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
13	toluene	601-021-00-3	203-625-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
14	ethylbenzene	601-023-00-4	202-849-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
15	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
16	pH		PH		9.2 pH		9.2 pH	9.2 pH			
17	naphthalene	601-052-00-2	202-049-5		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
18	acenaphthylene		205-917-1		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
19	acenaphthene		201-469-6		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
20	fluorene		201-695-5		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
21	phenanthrene		201-581-5		0.11 mg/kg		0.11 mg/kg	0.000011 %			
22	anthracene		204-371-1		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
23	fluoranthene		205-912-4		0.37 mg/kg		0.37 mg/kg	0.000037 %			
24	pyrene		204-927-3		0.59 mg/kg		0.59 mg/kg	0.000059 %			
25	benzo[a]anthracene	601-033-00-9	200-280-6		0.54 mg/kg		0.54 mg/kg	0.000054 %			
26	chrysene	601-048-00-0	205-923-4		0.26 mg/kg		0.26 mg/kg	0.000026 %			
27	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.75 mg/kg		0.75 mg/kg	0.000075 %			
28	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.17 mg/kg		0.17 mg/kg	0.000017 %			
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.65 mg/kg		0.65 mg/kg	0.000065 %			
30	indeno[123-cd]pyrene		205-893-2		0.1 mg/kg		0.1 mg/kg	0.00001 %			
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.06 mg/kg		0.06 mg/kg	0.000006 %			



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
32	benzo[ghi]perylene				0.18 mg/kg		0.18	mg/kg	0.000018 %		
		205-883-8	191-24-2								
Total:									0.391 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: BH104[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name: **BH104[2]** LoW Code: Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **0.5 m** Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 8: Corrosive "waste which on application can cause skin corrosion"

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 11.7 pH)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	4.3 mg/kg	1.32	5.677 mg/kg	0.000568 %			
2	cadmium { cadmium chloride }	048-008-00-3	233-296-7	10108-64-2	0.2 mg/kg	1.631	0.326 mg/kg	0.0000326 %			
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		7.9 mg/kg	1.462	11.546 mg/kg	0.00115 %			
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	15 mg/kg	1.126	16.888 mg/kg	0.00169 %			
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			30 mg/kg		30 mg/kg	0.003 %			
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			0.14 mg/kg		0.14 mg/kg	0.000014 %			
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4	7.6 mg/kg	2.637	20.039 mg/kg	0.002 %			
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8			<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]	29 mg/kg	2.469	71.61 mg/kg	0.00716 %			
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	benzene	601-020-00-8	200-753-7	71-43-2	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
13	toluene	601-021-00-3	203-625-9	108-88-3	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
16	pH				11.7 pH		11.7 pH	11.7 pH			
			PH								
17	naphthalene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
18	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		205-917-1	208-96-8								
19	acenaphthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		201-469-6	83-32-9								
20	fluorene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		201-695-5	86-73-7								
21	phenanthrene				0.08 mg/kg		0.08 mg/kg	0.000008 %			
		201-581-5	85-01-8								
22	anthracene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		204-371-1	120-12-7								
23	fluoranthene				0.23 mg/kg		0.23 mg/kg	0.000023 %			
		205-912-4	206-44-0								
24	pyrene				0.24 mg/kg		0.24 mg/kg	0.000024 %			
		204-927-3	129-00-0								
25	benzo[a]anthracene				0.15 mg/kg		0.15 mg/kg	0.000015 %			
	601-033-00-9	200-280-6	56-55-3								
26	chrysene				0.08 mg/kg		0.08 mg/kg	0.000008 %			
	601-048-00-0	205-923-4	218-01-9								
27	benzo[b]fluoranthene				0.15 mg/kg		0.15 mg/kg	0.000015 %			
	601-034-00-4	205-911-9	205-99-2								
28	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-036-00-5	205-916-6	207-08-9								
29	benzo[a]pyrene; benzo[def]chrysene				0.12 mg/kg		0.12 mg/kg	0.000012 %			
	601-032-00-3	200-028-5	50-32-8								
30	indeno[123-cd]pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		205-893-2	193-39-5								
31	dibenz[a,h]anthracene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
32	benzo[ghi]perylene				0.04 mg/kg		0.04 mg/kg	0.000004 %			
		205-883-8	191-24-2								
Total:									0.017 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: BH105

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
BH105	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
0.2 m	

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.25%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.25%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.25%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				16 mg/kg	1.32	21.125 mg/kg		0.00211 %		
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.9 mg/kg	1.631	1.468 mg/kg		0.000147 %		
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				8.4 mg/kg	1.462	12.277 mg/kg		0.00123 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg		<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				32 mg/kg	1.126	36.028 mg/kg		0.0036 %		
	029-002-00-X	215-270-7	1317-39-1								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	69 mg/kg		69 mg/kg	0.0069 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.18 mg/kg		0.18 mg/kg	0.000018 %			
	080-002-00-6										
8	nickel { nickel sulfate }				9.5 mg/kg	2.637	25.049 mg/kg	0.0025 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				59 mg/kg	2.469	145.688 mg/kg	0.0146 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				2500 mg/kg		2500 mg/kg	0.25 %			
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
16	pH				9.5 pH		9.5 pH	9.5 pH			
			PH								
17	naphthalene				0.06 mg/kg		0.06 mg/kg	0.000006 %			
	601-052-00-2	202-049-5	91-20-3								
18	acenaphthylene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		205-917-1	208-96-8								
19	acenaphthene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		201-469-6	83-32-9								
20	fluorene				0.06 mg/kg		0.06 mg/kg	0.000006 %			
		201-695-5	86-73-7								
21	phenanthrene				0.5 mg/kg		0.5 mg/kg	0.00005 %			
		201-581-5	85-01-8								
22	anthracene				0.11 mg/kg		0.11 mg/kg	0.000011 %			
		204-371-1	120-12-7								
23	fluoranthene				1 mg/kg		1 mg/kg	0.0001 %			
		205-912-4	206-44-0								
24	pyrene				1.3 mg/kg		1.3 mg/kg	0.00013 %			
		204-927-3	129-00-0								
25	benzo[a]anthracene				0.78 mg/kg		0.78 mg/kg	0.000078 %			
	601-033-00-9	200-280-6	56-55-3								
26	chrysene				0.28 mg/kg		0.28 mg/kg	0.000028 %			
	601-048-00-0	205-923-4	218-01-9								
27	benzo[b]fluoranthene				0.98 mg/kg		0.98 mg/kg	0.000098 %			
	601-034-00-4	205-911-9	205-99-2								
28	benzo[k]fluoranthene				0.23 mg/kg		0.23 mg/kg	0.000023 %			
	601-036-00-5	205-916-6	207-08-9								
29	benzo[a]pyrene; benzo[def]chrysene				0.84 mg/kg		0.84 mg/kg	0.000084 %			
	601-032-00-3	200-028-5	50-32-8								
30	indeno[123-cd]pyrene				0.11 mg/kg		0.11 mg/kg	0.000011 %			
		205-893-2	193-39-5								
31	dibenz[a,h]anthracene				0.04 mg/kg		0.04 mg/kg	0.000004 %			
	601-041-00-2	200-181-8	53-70-3								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
32	benzo[ghi]perylene				0.17 mg/kg		0.17 mg/kg		0.000017 %		
		205-883-8	191-24-2								
Total:									0.282 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS101

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
WS101	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
0.2 m	

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.24%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.24%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.24%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				8.1 mg/kg	1.32	10.695 mg/kg	0.00107 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.6 mg/kg	1.631	0.978 mg/kg	0.0000978 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				9 mg/kg	1.462	13.154 mg/kg	0.00132 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				35 mg/kg	1.126	39.406 mg/kg	0.00394 %			
	029-002-00-X	215-270-7	1317-39-1								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6		1	130 mg/kg		130 mg/kg	0.013 %			
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6		1	0.42 mg/kg		0.42 mg/kg	0.000042 %			
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4	19 mg/kg	2.637	50.097 mg/kg	0.00501 %			
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8			<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]	72 mg/kg	2.469	177.789 mg/kg	0.0178 %			
11	TPH (C6 to C40) petroleum group		TPH		2400 mg/kg		2400 mg/kg	0.24 %			
12	benzene	601-020-00-8	200-753-7	71-43-2	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
13	toluene	601-021-00-3	203-625-9	108-88-3	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
14	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
15	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
16	pH		PH		8.9 pH		8.9 pH	8.9 pH			
17	naphthalene	601-052-00-2	202-049-5	91-20-3	7.1 mg/kg		7.1 mg/kg	0.00071 %			
18	acenaphthylene		205-917-1	208-96-8	19 mg/kg		19 mg/kg	0.0019 %			
19	acenaphthene		201-469-6	83-32-9	15 mg/kg		15 mg/kg	0.0015 %			
20	fluorene		201-695-5	86-73-7	8.9 mg/kg		8.9 mg/kg	0.00089 %			
21	phenanthrene		201-581-5	85-01-8	45 mg/kg		45 mg/kg	0.0045 %			
22	anthracene		204-371-1	120-12-7	12 mg/kg		12 mg/kg	0.0012 %			
23	fluoranthene		205-912-4	206-44-0	56 mg/kg		56 mg/kg	0.0056 %			
24	pyrene		204-927-3	129-00-0	47 mg/kg		47 mg/kg	0.0047 %			
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	21 mg/kg		21 mg/kg	0.0021 %			
26	chrysene	601-048-00-0	205-923-4	218-01-9	14 mg/kg		14 mg/kg	0.0014 %			
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	18 mg/kg		18 mg/kg	0.0018 %			
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	6.7 mg/kg		6.7 mg/kg	0.00067 %			
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	14 mg/kg		14 mg/kg	0.0014 %			
30	indeno[123-cd]pyrene		205-893-2	193-39-5	4.7 mg/kg		4.7 mg/kg	0.00047 %			
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	1.3 mg/kg		1.3 mg/kg	0.00013 %			



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
32	benzo[ghi]perylene				5.1 mg/kg		5.1 mg/kg	0.00051 %		
		205-883-8	191-24-2							
Total:								0.312 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS101[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: **WS101[2]** LoW Code: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **0.5 m** Chapter: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				94 mg/kg	1.32	124.111 mg/kg	0.0124 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.6 mg/kg	1.631	0.978 mg/kg	0.0000978 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21 mg/kg	1.462	30.693 mg/kg	0.00307 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				280 mg/kg	1.126	315.249 mg/kg	0.0315 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	520 mg/kg		520 mg/kg	0.052 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.37 mg/kg		0.37 mg/kg	0.000037 %			
	080-002-00-6										
8	nickel { nickel sulfate }				63 mg/kg	2.637	166.111 mg/kg	0.0166 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.7 mg/kg	1.405	0.983 mg/kg	0.0000983 %			
	034-002-00-8										
10	zinc { zinc sulphate }				200 mg/kg	2.469	493.859 mg/kg	0.0494 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group		TPH		240 mg/kg		240 mg/kg	0.024 %			
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
16	pH		PH		7.3 pH		7.3 pH	7.3 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	0.98 mg/kg		0.98 mg/kg	0.000098 %		
18	acenaphthylene		205-917-1	208-96-8	3.2 mg/kg		3.2 mg/kg	0.00032 %		
19	acenaphthene		201-469-6	83-32-9	3.5 mg/kg		3.5 mg/kg	0.00035 %		
20	fluorene		201-695-5	86-73-7	2.5 mg/kg		2.5 mg/kg	0.00025 %		
21	phenanthrene		201-581-5	85-01-8	15 mg/kg		15 mg/kg	0.0015 %		
22	anthracene		204-371-1	120-12-7	0.19 mg/kg		0.19 mg/kg	0.000019 %		
23	fluoranthene		205-912-4	206-44-0	14 mg/kg		14 mg/kg	0.0014 %		
24	pyrene		204-927-3	129-00-0	14 mg/kg		14 mg/kg	0.0014 %		
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	5.7 mg/kg		5.7 mg/kg	0.00057 %		
26	chrysene	601-048-00-0	205-923-4	218-01-9	3.8 mg/kg		3.8 mg/kg	0.00038 %		
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	5 mg/kg		5 mg/kg	0.0005 %		
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.7 mg/kg		1.7 mg/kg	0.00017 %		
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	3.9 mg/kg		3.9 mg/kg	0.00039 %		
30	indeno[123-cd]pyrene		205-893-2	193-39-5	1 mg/kg		1 mg/kg	0.0001 %		
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.32 mg/kg		0.32 mg/kg	0.000032 %		
32	benzo[ghi]perylene		205-883-8	191-24-2	1.2 mg/kg		1.2 mg/kg	0.00012 %		
Total:								0.197 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.024%)



Classification of sample: WS101[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: **WS101[3]** LoW Code: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **1 m** Chapter: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				85 mg/kg	1.32	112.228 mg/kg	0.0112 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.6 mg/kg	1.631	0.978 mg/kg	0.0000978 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18 mg/kg	1.462	26.308 mg/kg	0.00263 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				260 mg/kg	1.126	292.731 mg/kg	0.0293 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	320 mg/kg		320 mg/kg	0.032 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.26 mg/kg		0.26 mg/kg	0.000026 %			
	080-002-00-6										
8	nickel { nickel sulfate }				54 mg/kg	2.637	142.381 mg/kg	0.0142 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				170 mg/kg	2.469	419.78 mg/kg	0.042 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group		TPH		620 mg/kg		620 mg/kg	0.062 %			
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
16	pH		PH		7.2	pH		7.2	pH	7.2 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	0.67	mg/kg		0.67	mg/kg	0.000067 %		
18	acenaphthylene		205-917-1	208-96-8	3.3	mg/kg		3.3	mg/kg	0.00033 %		
19	acenaphthene		201-469-6	83-32-9	3.5	mg/kg		3.5	mg/kg	0.00035 %		
20	fluorene		201-695-5	86-73-7	2.9	mg/kg		2.9	mg/kg	0.00029 %		
21	phenanthrene		201-581-5	85-01-8	20	mg/kg		20	mg/kg	0.002 %		
22	anthracene		204-371-1	120-12-7	4.3	mg/kg		4.3	mg/kg	0.00043 %		
23	fluoranthene		205-912-4	206-44-0	13	mg/kg		13	mg/kg	0.0013 %		
24	pyrene		204-927-3	129-00-0	11	mg/kg		11	mg/kg	0.0011 %		
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	6	mg/kg		6	mg/kg	0.0006 %		
26	chrysene	601-048-00-0	205-923-4	218-01-9	4	mg/kg		4	mg/kg	0.0004 %		
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	5.2	mg/kg		5.2	mg/kg	0.00052 %		
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.7	mg/kg		1.7	mg/kg	0.00017 %		
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	4.1	mg/kg		4.1	mg/kg	0.00041 %		
30	indeno[123-cd]pyrene		205-893-2	193-39-5	1.2	mg/kg		1.2	mg/kg	0.00012 %		
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.38	mg/kg		0.38	mg/kg	0.000038 %		
32	benzo[ghi]perylene		205-883-8	191-24-2	1.4	mg/kg		1.4	mg/kg	0.00014 %		
Total:										0.202 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.062%)



Classification of sample: WS105

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: **WS105** LoW Code: Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **0.5 m** Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				22 mg/kg	1.32	29.047 mg/kg	0.0029 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				5.5 mg/kg	1.631	8.969 mg/kg	0.000897 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	23.385 mg/kg	0.00234 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				180 mg/kg	1.126	202.66 mg/kg	0.0203 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	190 mg/kg		190 mg/kg	0.019 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.14 mg/kg		0.14 mg/kg	0.000014 %			
	080-002-00-6										
8	nickel { nickel sulfate }				40 mg/kg	2.637	105.467 mg/kg	0.0105 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				720 mg/kg	2.469	1777.893 mg/kg	0.178 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group		TPH		200 mg/kg		200 mg/kg	0.02 %			
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
16	pH		PH		10.4	pH		10.4	pH	10.4 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	0.11	mg/kg		0.11	mg/kg	0.000011 %		
18	acenaphthylene		205-917-1	208-96-8	0.31	mg/kg		0.31	mg/kg	0.000031 %		
19	acenaphthene		201-469-6	83-32-9	0.32	mg/kg		0.32	mg/kg	0.000032 %		
20	fluorene		201-695-5	86-73-7	0.24	mg/kg		0.24	mg/kg	0.000024 %		
21	phenanthrene		201-581-5	85-01-8	2.9	mg/kg		2.9	mg/kg	0.00029 %		
22	anthracene		204-371-1	120-12-7	0.62	mg/kg		0.62	mg/kg	0.000062 %		
23	fluoranthene		205-912-4	206-44-0	5.8	mg/kg		5.8	mg/kg	0.00058 %		
24	pyrene		204-927-3	129-00-0	6.4	mg/kg		6.4	mg/kg	0.00064 %		
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	2.8	mg/kg		2.8	mg/kg	0.00028 %		
26	chrysene	601-048-00-0	205-923-4	218-01-9	2	mg/kg		2	mg/kg	0.0002 %		
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	3.1	mg/kg		3.1	mg/kg	0.00031 %		
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.93	mg/kg		0.93	mg/kg	0.000093 %		
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	2.6	mg/kg		2.6	mg/kg	0.00026 %		
30	indeno[123-cd]pyrene		205-893-2	193-39-5	0.86	mg/kg		0.86	mg/kg	0.000086 %		
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.28	mg/kg		0.28	mg/kg	0.000028 %		
32	benzo[ghi]perylene		205-883-8	191-24-2	1.2	mg/kg		1.2	mg/kg	0.00012 %		
Total:										0.257 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.02%)



Classification of sample: WS105[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: **WS105[2]** LoW Code: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **2.8 m** Chapter: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				27 mg/kg	1.32	35.649 mg/kg	0.00356 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.3 mg/kg	1.631	0.489 mg/kg	0.0000489 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				25 mg/kg	1.462	36.539 mg/kg	0.00365 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				90 mg/kg	1.126	101.33 mg/kg	0.0101 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	280 mg/kg		280 mg/kg	0.028 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.43 mg/kg		0.43 mg/kg	0.000043 %			
	080-002-00-6										
8	nickel { nickel sulfate }				24 mg/kg	2.637	63.28 mg/kg	0.00633 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				93 mg/kg	2.469	229.645 mg/kg	0.023 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group		TPH		420 mg/kg		420 mg/kg	0.042 %			
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
16	pH		PH		7.5 pH		7.5 pH	7.5 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	3.4 mg/kg		3.4 mg/kg	0.00034 %		
18	acenaphthylene		205-917-1	208-96-8	4 mg/kg		4 mg/kg	0.0004 %		
19	acenaphthene		201-469-6	83-32-9	3.9 mg/kg		3.9 mg/kg	0.00039 %		
20	fluorene		201-695-5	86-73-7	5.5 mg/kg		5.5 mg/kg	0.00055 %		
21	phenanthrene		201-581-5	85-01-8	18 mg/kg		18 mg/kg	0.0018 %		
22	anthracene		204-371-1	120-12-7	7.9 mg/kg		7.9 mg/kg	0.00079 %		
23	fluoranthene		205-912-4	206-44-0	14 mg/kg		14 mg/kg	0.0014 %		
24	pyrene		204-927-3	129-00-0	15 mg/kg		15 mg/kg	0.0015 %		
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	4.4 mg/kg		4.4 mg/kg	0.00044 %		
26	chrysene	601-048-00-0	205-923-4	218-01-9	3.2 mg/kg		3.2 mg/kg	0.00032 %		
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	2.3 mg/kg		2.3 mg/kg	0.00023 %		
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.72 mg/kg		0.72 mg/kg	0.000072 %		
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	2 mg/kg		2 mg/kg	0.0002 %		
30	indeno[123-cd]pyrene		205-893-2	193-39-5	0.5 mg/kg		0.5 mg/kg	0.00005 %		
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.17 mg/kg		0.17 mg/kg	0.000017 %		
32	benzo[ghi]perylene		205-883-8	191-24-2	0.71 mg/kg		0.71 mg/kg	0.000071 %		
Total:								0.126 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.042%)



Classification of sample: WS102

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: **WS102** LoW Code: Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **0.5 m** Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				81 mg/kg	1.32	106.946 mg/kg	0.0107 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.6 mg/kg	1.631	0.978 mg/kg	0.0000978 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22 mg/kg	1.462	32.154 mg/kg	0.00322 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				250 mg/kg	1.126	281.472 mg/kg	0.0281 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	450 mg/kg		450 mg/kg	0.045 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	3.7 mg/kg		3.7 mg/kg	0.00037 %			
	080-002-00-6										
8	nickel { nickel sulfate }				39 mg/kg	2.637	102.831 mg/kg	0.0103 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1.1 mg/kg	1.405	1.546 mg/kg	0.000155 %			
	034-002-00-8										
10	zinc { zinc sulphate }				160 mg/kg	2.469	395.087 mg/kg	0.0395 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]								
16	pH		PH		7.5 pH		7.5 pH	7.5 pH			
17	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
18	acenaphthylene		205-917-1	208-96-8	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
19	acenaphthene		201-469-6	83-32-9	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
20	fluorene		201-695-5	86-73-7	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
21	phenanthrene		201-581-5	85-01-8	0.17 mg/kg		0.17 mg/kg	0.000017 %			
22	anthracene		204-371-1	120-12-7	0.04 mg/kg		0.04 mg/kg	0.000004 %			
23	fluoranthene		205-912-4	206-44-0	0.87 mg/kg		0.87 mg/kg	0.000087 %			
24	pyrene		204-927-3	129-00-0	1.1 mg/kg		1.1 mg/kg	0.00011 %			
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.77 mg/kg		0.77 mg/kg	0.000077 %			
26	chrysene	601-048-00-0	205-923-4	218-01-9	0.46 mg/kg		0.46 mg/kg	0.000046 %			
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.84 mg/kg		0.84 mg/kg	0.000084 %			
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.26 mg/kg		0.26 mg/kg	0.000026 %			
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.59 mg/kg		0.59 mg/kg	0.000059 %			
30	indeno[123-cd]pyrene		205-893-2	193-39-5	0.19 mg/kg		0.19 mg/kg	0.000019 %			
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.06 mg/kg		0.06 mg/kg	0.000006 %			
32	benzo[ghi]perylene		205-883-8	191-24-2	0.24 mg/kg		0.24 mg/kg	0.000024 %			
Total:									0.139 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS102[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: **WS102[2]** LoW Code: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **1 m** Chapter: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				9.2	mg/kg	1.32	12.147	mg/kg	0.00121 %		
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium chloride }				<0.1	mg/kg	1.631	<0.163	mg/kg	<0.0000163 %		<LOD
	048-008-00-3	233-296-7	10108-64-2									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17	mg/kg	1.462	24.846	mg/kg	0.00248 %		
		215-160-9	1308-38-9									
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
5	copper { dicopper oxide; copper (I) oxide }				26	mg/kg	1.126	29.273	mg/kg	0.00293 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	30	mg/kg		30	mg/kg	0.003 %		
	082-001-00-6											
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.18	mg/kg		0.18	mg/kg	0.000018 %		
	080-002-00-6											
8	nickel { nickel sulfate }				14	mg/kg	2.637	36.914	mg/kg	0.00369 %		
	028-009-00-5	232-104-9	7786-81-4									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
10	zinc { zinc sulphate }				54	mg/kg	2.469	133.342	mg/kg	0.0133 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
11	TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
12	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
13	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
14	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
15	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]								
16	pH		PH		7.4 pH		7.4 pH		7.4 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
18	acenaphthylene		205-917-1	208-96-8	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
19	acenaphthene		201-469-6	83-32-9	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
20	fluorene		201-695-5	86-73-7	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
21	phenanthrene		201-581-5	85-01-8	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
22	anthracene		204-371-1	120-12-7	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
23	fluoranthene		205-912-4	206-44-0	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
24	pyrene		204-927-3	129-00-0	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
26	chrysene	601-048-00-0	205-923-4	218-01-9	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
30	indeno[123-cd]pyrene		205-893-2	193-39-5	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
32	benzo[ghi]perylene		205-883-8	191-24-2	<0.03 mg/kg		<0.03 mg/kg		<0.000003 %		<LOD
Total:									0.028 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS106

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
WS106	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
0.3 m	

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.12%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.12%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.12%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				25 mg/kg	1.32	33.008 mg/kg	0.0033 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.3 mg/kg	1.631	0.489 mg/kg	0.0000489 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				20 mg/kg	1.462	29.231 mg/kg	0.00292 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				130 mg/kg	1.126	146.365 mg/kg	0.0146 %			
	029-002-00-X	215-270-7	1317-39-1								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	320 mg/kg		320 mg/kg	0.032 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	2.8 mg/kg		2.8 mg/kg	0.00028 %			
	080-002-00-6										
8	nickel { nickel sulfate }				38 mg/kg	2.637	100.194 mg/kg	0.01 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulposelenide and those specified elsewhere in this Annex }				0.6 mg/kg	1.405	0.843 mg/kg	0.0000843 %			
	034-002-00-8										
10	zinc { zinc sulphate }				72 mg/kg	2.469	177.789 mg/kg	0.0178 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				1200 mg/kg		1200 mg/kg	0.12 %			
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
16	pH				7.4 pH		7.4 pH	7.4 pH			
			PH								
17	naphthalene				17 mg/kg		17 mg/kg	0.0017 %			
	601-052-00-2	202-049-5	91-20-3								
18	acenaphthylene				15 mg/kg		15 mg/kg	0.0015 %			
		205-917-1	208-96-8								
19	acenaphthene				13 mg/kg		13 mg/kg	0.0013 %			
		201-469-6	83-32-9								
20	fluorene				13 mg/kg		13 mg/kg	0.0013 %			
		201-695-5	86-73-7								
21	phenanthrene				69 mg/kg		69 mg/kg	0.0069 %			
		201-581-5	85-01-8								
22	anthracene				19 mg/kg		19 mg/kg	0.0019 %			
		204-371-1	120-12-7								
23	fluoranthene				50 mg/kg		50 mg/kg	0.005 %			
		205-912-4	206-44-0								
24	pyrene				57 mg/kg		57 mg/kg	0.0057 %			
		204-927-3	129-00-0								
25	benzo[a]anthracene				20 mg/kg		20 mg/kg	0.002 %			
	601-033-00-9	200-280-6	56-55-3								
26	chrysene				15 mg/kg		15 mg/kg	0.0015 %			
	601-048-00-0	205-923-4	218-01-9								
27	benzo[b]fluoranthene				11 mg/kg		11 mg/kg	0.0011 %			
	601-034-00-4	205-911-9	205-99-2								
28	benzo[k]fluoranthene				3.7 mg/kg		3.7 mg/kg	0.00037 %			
	601-036-00-5	205-916-6	207-08-9								
29	benzo[a]pyrene; benzo[def]chrysene				8.8 mg/kg		8.8 mg/kg	0.00088 %			
	601-032-00-3	200-028-5	50-32-8								
30	indeno[123-cd]pyrene				2.6 mg/kg		2.6 mg/kg	0.00026 %			
		205-893-2	193-39-5								
31	dibenz[a,h]anthracene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
32		benzo[ghi]perylene			2.8 mg/kg		2.8 mg/kg	0.00028 %		
		205-883-8	191-24-2							
Total:								0.233 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS107

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	WS107	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.5 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				34 mg/kg	1.32	44.891 mg/kg		0.00449 %		
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.8 mg/kg	1.631	1.305 mg/kg		0.00013 %		
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	23.385 mg/kg		0.00234 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg		<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				140 mg/kg	1.126	157.624 mg/kg		0.0158 %		
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	230 mg/kg		230 mg/kg		0.023 %		
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.4 mg/kg		0.4 mg/kg		0.00004 %		
	080-002-00-6										
8	nickel { nickel sulfate }				22 mg/kg	2.637	58.007 mg/kg		0.0058 %		
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg		<0.0000703 %		<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				530 mg/kg	2.469	1308.727 mg/kg		0.131 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg		<0.001 %		<LOD
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg		<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg		<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg		<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg		<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
16	pH				8 pH		8 pH	8pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	0.06 mg/kg		0.06 mg/kg	0.000006 %		
18	acenaphthylene		205-917-1	208-96-8	0.12 mg/kg		0.12 mg/kg	0.000012 %		
19	acenaphthene		201-469-6	83-32-9	0.11 mg/kg		0.11 mg/kg	0.000011 %		
20	fluorene		201-695-5	86-73-7	0.11 mg/kg		0.11 mg/kg	0.000011 %		
21	phenanthrene		201-581-5	85-01-8	0.88 mg/kg		0.88 mg/kg	0.000088 %		
22	anthracene		204-371-1	120-12-7	0.23 mg/kg		0.23 mg/kg	0.000023 %		
23	fluoranthene		205-912-4	206-44-0	0.77 mg/kg		0.77 mg/kg	0.000077 %		
24	pyrene		204-927-3	129-00-0	0.82 mg/kg		0.82 mg/kg	0.000082 %		
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.41 mg/kg		0.41 mg/kg	0.000041 %		
26	chrysene	601-048-00-0	205-923-4	218-01-9	0.26 mg/kg		0.26 mg/kg	0.000026 %		
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.36 mg/kg		0.36 mg/kg	0.000036 %		
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.14 mg/kg		0.14 mg/kg	0.000014 %		
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.32 mg/kg		0.32 mg/kg	0.000032 %		
30	indeno[123-cd]pyrene		205-893-2	193-39-5	0.1 mg/kg		0.1 mg/kg	0.00001 %		
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.03 mg/kg		0.03 mg/kg	0.000003 %		
32	benzo[ghi]perylene		205-883-8	191-24-2	0.13 mg/kg		0.13 mg/kg	0.000013 %		
Total:								0.184 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS107[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
WS107[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.7 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				13 mg/kg	1.32	17.164 mg/kg	0.00172 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.3 mg/kg	1.631	0.489 mg/kg	0.0000489 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				9.3 mg/kg	1.462	13.592 mg/kg	0.00136 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				22 mg/kg	1.126	24.77 mg/kg	0.00248 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	22 mg/kg		22 mg/kg	0.0022 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.2 mg/kg		0.2 mg/kg	0.00002 %			
	080-002-00-6										
8	nickel { nickel sulfate }				14 mg/kg	2.637	36.914 mg/kg	0.00369 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				46 mg/kg	2.469	113.588 mg/kg	0.0114 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
16	pH				8.1	pH		8.1	pH	8.1 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
18	acenaphthylene		205-917-1	208-96-8	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
19	acenaphthene		201-469-6	83-32-9	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
20	fluorene		201-695-5	86-73-7	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21	phenanthrene		201-581-5	85-01-8	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
22	anthracene		204-371-1	120-12-7	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
23	fluoranthene		205-912-4	206-44-0	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
24	pyrene		204-927-3	129-00-0	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
26	chrysene	601-048-00-0	205-923-4	218-01-9	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
30	indeno[123-cd]pyrene		205-893-2	193-39-5	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
32	benzo[ghi]perylene		205-883-8	191-24-2	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
Total:										0.0242 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS108

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
WS108	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
0.3 m	

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.84%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 1A; H360Df "May damage the unborn child. Suspected of damaging fertility."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.84%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.84%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				19 mg/kg	1.32	25.086 mg/kg	0.00251 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.7 mg/kg	1.631	1.142 mg/kg	0.000114 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				8.8 mg/kg	1.462	12.862 mg/kg	0.00129 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				130 mg/kg	1.126	146.365 mg/kg	0.0146 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	8400 mg/kg		8400 mg/kg	0.84 %			
	082-001-00-6										



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.5	mg/kg		0.5	mg/kg	0.00005 %		
	080-002-00-6											
8	nickel { nickel sulfate }				19	mg/kg	2.637	50.097	mg/kg	0.00501 %		
	028-009-00-5	232-104-9	7786-81-4									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
10	zinc { zinc sulphate }				400	mg/kg	2.469	987.719	mg/kg	0.0988 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
11	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
12	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
13	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
14	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
15	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
16	pH				7.8	pH		7.8	pH	7.8 pH		
			PH									
17	naphthalene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
	601-052-00-2	202-049-5	91-20-3									
18	acenaphthylene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
		205-917-1	208-96-8									
19	acenaphthene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		201-469-6	83-32-9									
20	fluorene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		201-695-5	86-73-7									
21	phenanthrene				0.57	mg/kg		0.57	mg/kg	0.000057 %		
		201-581-5	85-01-8									
22	anthracene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		204-371-1	120-12-7									
23	fluoranthene				0.88	mg/kg		0.88	mg/kg	0.000088 %		
		205-912-4	206-44-0									
24	pyrene				0.99	mg/kg		0.99	mg/kg	0.000099 %		
		204-927-3	129-00-0									
25	benzo[a]anthracene				0.55	mg/kg		0.55	mg/kg	0.000055 %		
	601-033-00-9	200-280-6	56-55-3									
26	chrysene				0.37	mg/kg		0.37	mg/kg	0.000037 %		
	601-048-00-0	205-923-4	218-01-9									
27	benzo[b]fluoranthene				0.53	mg/kg		0.53	mg/kg	0.000053 %		
	601-034-00-4	205-911-9	205-99-2									
28	benzo[k]fluoranthene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
	601-036-00-5	205-916-6	207-08-9									
29	benzo[a]pyrene; benzo[def]chrysene				0.43	mg/kg		0.43	mg/kg	0.000043 %		
	601-032-00-3	200-028-5	50-32-8									
30	indeno[123-cd]pyrene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
		205-893-2	193-39-5									
31	dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3									
32	benzo[ghi]perylene				0.19	mg/kg		0.19	mg/kg	0.000019 %		
		205-883-8	191-24-2									
Total:										0.964 %		



Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS104A

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: **WS104A** LoW Code: Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **0.3 m** Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				120 mg/kg	1.32	158.439 mg/kg	0.0158 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.3 mg/kg	1.631	0.489 mg/kg	0.0000489 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27 mg/kg	1.462	39.462 mg/kg	0.00395 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				70 mg/kg	1.126	78.812 mg/kg	0.00788 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	38 mg/kg		38 mg/kg	0.0038 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	080-002-00-6										
8	nickel { nickel sulfate }				31 mg/kg	2.637	81.737 mg/kg	0.00817 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				54 mg/kg	2.469	133.342 mg/kg	0.0133 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]								
16	pH		PH		8.9 pH		8.9 pH	8.9 pH			
17	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
18	acenaphthylene		205-917-1	208-96-8	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
19	acenaphthene		201-469-6	83-32-9	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
20	fluorene		201-695-5	86-73-7	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
21	phenanthrene		201-581-5	85-01-8	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
22	anthracene		204-371-1	120-12-7	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
23	fluoranthene		205-912-4	206-44-0	0.06 mg/kg		0.06 mg/kg	0.000006 %			
24	pyrene		204-927-3	129-00-0	0.07 mg/kg		0.07 mg/kg	0.000007 %			
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.09 mg/kg		0.09 mg/kg	0.000009 %			
26	chrysene	601-048-00-0	205-923-4	218-01-9	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.04 mg/kg		0.04 mg/kg	0.000004 %			
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.04 mg/kg		0.04 mg/kg	0.000004 %			
30	indeno[123-cd]pyrene		205-893-2	193-39-5	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
32	benzo[ghi]perylene		205-883-8	191-24-2	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
Total:									0.0544 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: WS104A[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name: **WS104A[2]** LoW Code: Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **1.1 m** Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.1%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	93	mg/kg	1.32	122.79	mg/kg	0.0123 %		
2	cadmium { cadmium chloride }	048-008-00-3	233-296-7	10108-64-2	2.3	mg/kg	1.631	3.751	mg/kg	0.000375 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		100	mg/kg	1.462	146.156	mg/kg	0.0146 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	430	mg/kg	1.126	484.132	mg/kg	0.0484 %		
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	1000	mg/kg	1000	mg/kg	0.1 %		
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	0.44	mg/kg	0.44	mg/kg	0.000044 %		
8	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4	36	mg/kg	2.637	94.921	mg/kg	0.00949 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8			<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]	550	mg/kg	2.469	1358.113	mg/kg	0.136 %		
11	TPH (C6 to C40) petroleum group		TPH		150	mg/kg		150	mg/kg	0.015 %		
12	benzene	601-020-00-8	200-753-7	71-43-2	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
16	pH				10.8 pH		10.8 pH	10.8 pH			
			PH								
17	naphthalene				0.03 mg/kg		0.03 mg/kg	0.000003 %			
	601-052-00-2	202-049-5	91-20-3								
18	acenaphthylene				0.08 mg/kg		0.08 mg/kg	0.000008 %			
		205-917-1	208-96-8								
19	acenaphthene				0.06 mg/kg		0.06 mg/kg	0.000006 %			
		201-469-6	83-32-9								
20	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		201-695-5	86-73-7								
21	phenanthrene				0.53 mg/kg		0.53 mg/kg	0.000053 %			
		201-581-5	85-01-8								
22	anthracene				0.11 mg/kg		0.11 mg/kg	0.000011 %			
		204-371-1	120-12-7								
23	fluoranthene				0.95 mg/kg		0.95 mg/kg	0.000095 %			
		205-912-4	206-44-0								
24	pyrene				0.96 mg/kg		0.96 mg/kg	0.000096 %			
		204-927-3	129-00-0								
25	benzo[a]anthracene				0.46 mg/kg		0.46 mg/kg	0.000046 %			
	601-033-00-9	200-280-6	56-55-3								
26	chrysene				0.31 mg/kg		0.31 mg/kg	0.000031 %			
	601-048-00-0	205-923-4	218-01-9								
27	benzo[b]fluoranthene				0.45 mg/kg		0.45 mg/kg	0.000045 %			
	601-034-00-4	205-911-9	205-99-2								
28	benzo[k]fluoranthene				0.13 mg/kg		0.13 mg/kg	0.000013 %			
	601-036-00-5	205-916-6	207-08-9								
29	benzo[a]pyrene; benzo[def]chrysene				0.33 mg/kg		0.33 mg/kg	0.000033 %			
	601-032-00-3	200-028-5	50-32-8								
30	indeno[123-cd]pyrene				0.12 mg/kg		0.12 mg/kg	0.000012 %			
		205-893-2	193-39-5								
31	dibenz[a,h]anthracene				0.04 mg/kg		0.04 mg/kg	0.000004 %			
	601-041-00-2	200-181-8	53-70-3								
32	benzo[ghi]perylene				0.14 mg/kg		0.14 mg/kg	0.000014 %			
		205-883-8	191-24-2								
Total:									0.337 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"



Force this Hazardous property to non hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.015%)



Classification of sample: BH106

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: **BH106** LoW Code: Chapter: **17: Construction and Demolition Wastes (including excavated soil from contaminated sites)**
Sample Depth: **0.15 m** Entry: **17 05 04 (Soil and stones other than those mentioned in 17 05 03)**

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	naphthalene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
2	acenaphthylene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		205-917-1	208-96-8								
3	acenaphthene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		201-469-6	83-32-9								
4	fluorene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		201-695-5	86-73-7								
5	phenanthrene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		201-581-5	85-01-8								
6	anthracene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		204-371-1	120-12-7								
7	fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		205-912-4	206-44-0								
8	pyrene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		204-927-3	129-00-0								
9	benzo[a]anthracene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
10	chrysene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
11	benzo[b]fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
12	benzo[k]fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
13	benzo[a]pyrene; benzo[def]chrysene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
14	indeno[123-cd]pyrene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		205-893-2	193-39-5								
15	dibenz[a,h]anthracene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
16	benzo[ghi]perylene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		205-883-8	191-24-2								
Total:									0.0016 %		



Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
<LOD	Below limit of detection
ND	Not detected



Classification of sample: BH106[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH106[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				74 mg/kg	1.32	97.704 mg/kg	0.00977 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.6 mg/kg	1.631	0.978 mg/kg	0.0000978 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22 mg/kg	1.462	32.154 mg/kg	0.00322 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				590 mg/kg	1.126	664.274 mg/kg	0.0664 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	530 mg/kg		530 mg/kg	0.053 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.73 mg/kg		0.73 mg/kg	0.000073 %			
	080-002-00-6										
8	nickel { nickel sulfate }				60 mg/kg	2.637	158.201 mg/kg	0.0158 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				270 mg/kg	2.469	666.71 mg/kg	0.0667 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				650 mg/kg		650 mg/kg	0.065 %			
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
16	pH				8 pH		8 pH	8pH		
17	naphthalene				2.4 mg/kg		2.4 mg/kg	0.00024 %		
	601-052-00-2	202-049-5	91-20-3							
18	acenaphthylene				5.6 mg/kg		5.6 mg/kg	0.00056 %		
		205-917-1	208-96-8							
19	acenaphthene				5 mg/kg		5 mg/kg	0.0005 %		
		201-469-6	83-32-9							
20	fluorene				3.4 mg/kg		3.4 mg/kg	0.00034 %		
		201-695-5	86-73-7							
21	phenanthrene				18 mg/kg		18 mg/kg	0.0018 %		
		201-581-5	85-01-8							
22	anthracene				4.8 mg/kg		4.8 mg/kg	0.00048 %		
		204-371-1	120-12-7							
23	fluoranthene				21 mg/kg		21 mg/kg	0.0021 %		
		205-912-4	206-44-0							
24	pyrene				24 mg/kg		24 mg/kg	0.0024 %		
		204-927-3	129-00-0							
25	benzo[a]anthracene				9.1 mg/kg		9.1 mg/kg	0.00091 %		
	601-033-00-9	200-280-6	56-55-3							
26	chrysene				6 mg/kg		6 mg/kg	0.0006 %		
	601-048-00-0	205-923-4	218-01-9							
27	benzo[b]fluoranthene				6.8 mg/kg		6.8 mg/kg	0.00068 %		
	601-034-00-4	205-911-9	205-99-2							
28	benzo[k]fluoranthene				2.2 mg/kg		2.2 mg/kg	0.00022 %		
	601-036-00-5	205-916-6	207-08-9							
29	benzo[a]pyrene; benzo[def]chrysene				4.9 mg/kg		4.9 mg/kg	0.00049 %		
	601-032-00-3	200-028-5	50-32-8							
30	indeno[123-cd]pyrene				1.8 mg/kg		1.8 mg/kg	0.00018 %		
		205-893-2	193-39-5							
31	dibenz[a,h]anthracene				0.41 mg/kg		0.41 mg/kg	0.000041 %		
	601-041-00-2	200-181-8	53-70-3							
32	benzo[ghi]perylene				2.1 mg/kg		2.1 mg/kg	0.00021 %		
		205-883-8	191-24-2							
Total:								0.292 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.065%)



Classification of sample: BH109

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH109	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				24 mg/kg	1.32	31.688 mg/kg	0.00317 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.6 mg/kg	1.631	0.978 mg/kg	0.0000978 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	23.385 mg/kg	0.00234 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				160 mg/kg	1.126	180.142 mg/kg	0.018 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	290 mg/kg		290 mg/kg	0.029 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.63 mg/kg		0.63 mg/kg	0.000063 %			
	080-002-00-6										
8	nickel { nickel sulfate }				35 mg/kg	2.637	92.284 mg/kg	0.00923 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				140 mg/kg	2.469	345.701 mg/kg	0.0346 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				88 mg/kg		88 mg/kg	0.0088 %			
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
16	pH				7.8	pH		7.8	pH	7.8 pH		
17	naphthalene				0.54	mg/kg		0.54	mg/kg	0.000054 %		
	601-052-00-2	202-049-5	91-20-3									
18	acenaphthylene				1.1	mg/kg		1.1	mg/kg	0.00011 %		
		205-917-1	208-96-8									
19	acenaphthene				1	mg/kg		1	mg/kg	0.0001 %		
		201-469-6	83-32-9									
20	fluorene				0.88	mg/kg		0.88	mg/kg	0.000088 %		
		201-695-5	86-73-7									
21	phenanthrene				8.1	mg/kg		8.1	mg/kg	0.00081 %		
		201-581-5	85-01-8									
22	anthracene				1.4	mg/kg		1.4	mg/kg	0.00014 %		
		204-371-1	120-12-7									
23	fluoranthene				7.1	mg/kg		7.1	mg/kg	0.00071 %		
		205-912-4	206-44-0									
24	pyrene				7.1	mg/kg		7.1	mg/kg	0.00071 %		
		204-927-3	129-00-0									
25	benzo[a]anthracene				2.8	mg/kg		2.8	mg/kg	0.00028 %		
	601-033-00-9	200-280-6	56-55-3									
26	chrysene				2	mg/kg		2	mg/kg	0.0002 %		
	601-048-00-0	205-923-4	218-01-9									
27	benzo[b]fluoranthene				2.7	mg/kg		2.7	mg/kg	0.00027 %		
	601-034-00-4	205-911-9	205-99-2									
28	benzo[k]fluoranthene				0.83	mg/kg		0.83	mg/kg	0.000083 %		
	601-036-00-5	205-916-6	207-08-9									
29	benzo[a]pyrene; benzo[def]chrysene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
	601-032-00-3	200-028-5	50-32-8									
30	indeno[123-cd]pyrene				0.73	mg/kg		0.73	mg/kg	0.000073 %		
		205-893-2	193-39-5									
31	dibenz[a,h]anthracene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
	601-041-00-2	200-181-8	53-70-3									
32	benzo[ghi]perylene				0.9	mg/kg		0.9	mg/kg	0.00009 %		
		205-883-8	191-24-2									
Total:										0.109 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0088%)



Classification of sample: BH112

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH112	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				3.5 mg/kg	1.32	4.621 mg/kg	0.000462 %		
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium chloride }				0.8 mg/kg	1.631	1.305 mg/kg	0.00013 %		
	048-008-00-3	233-296-7	10108-64-2							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				3.6 mg/kg	1.462	5.262 mg/kg	0.000526 %		
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
5	copper { dicopper oxide; copper (I) oxide }				32 mg/kg	1.126	36.028 mg/kg	0.0036 %		
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	45 mg/kg		45 mg/kg	0.0045 %		
	082-001-00-6									
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.06 mg/kg		0.06 mg/kg	0.000006 %		
	080-002-00-6									
8	nickel { nickel sulfate }				5.9 mg/kg	2.637	15.556 mg/kg	0.00156 %		
	028-009-00-5	232-104-9	7786-81-4							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %		<LOD
	034-002-00-8									
10	zinc { zinc sulphate }				32 mg/kg	2.469	79.017 mg/kg	0.0079 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
11	TPH (C6 to C40) petroleum group				380 mg/kg		380 mg/kg	0.038 %		
			TPH							
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]							



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
16	pH				8.6	pH		8.6	pH	8.6 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	0.05	mg/kg		0.05	mg/kg	0.000005 %		
18	acenaphthylene		205-917-1	208-96-8	0.08	mg/kg		0.08	mg/kg	0.000008 %		
19	acenaphthene		201-469-6	83-32-9	0.08	mg/kg		0.08	mg/kg	0.000008 %		
20	fluorene		201-695-5	86-73-7	0.09	mg/kg		0.09	mg/kg	0.000009 %		
21	phenanthrene		201-581-5	85-01-8	0.73	mg/kg		0.73	mg/kg	0.000073 %		
22	anthracene		204-371-1	120-12-7	0.15	mg/kg		0.15	mg/kg	0.000015 %		
23	fluoranthene		205-912-4	206-44-0	1.4	mg/kg		1.4	mg/kg	0.00014 %		
24	pyrene		204-927-3	129-00-0	1.5	mg/kg		1.5	mg/kg	0.00015 %		
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.88	mg/kg		0.88	mg/kg	0.000088 %		
26	chrysene	601-048-00-0	205-923-4	218-01-9	0.53	mg/kg		0.53	mg/kg	0.000053 %		
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.74	mg/kg		0.74	mg/kg	0.000074 %		
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.26	mg/kg		0.26	mg/kg	0.000026 %		
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.65	mg/kg		0.65	mg/kg	0.000065 %		
30	indeno[123-cd]pyrene		205-893-2	193-39-5	0.17	mg/kg		0.17	mg/kg	0.000017 %		
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.04	mg/kg		0.04	mg/kg	0.000004 %		
32	benzo[ghi]perylene		205-883-8	191-24-2	0.22	mg/kg		0.22	mg/kg	0.000022 %		
Total:										0.0577 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.038%)



Classification of sample: BH112[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH112[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				20 mg/kg	1.32	26.407 mg/kg	0.00264 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.4 mg/kg	1.631	0.652 mg/kg	0.0000652 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13 mg/kg	1.462	19 mg/kg	0.0019 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				150 mg/kg	1.126	168.883 mg/kg	0.0169 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	290 mg/kg		290 mg/kg	0.029 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.14 mg/kg		0.14 mg/kg	0.000014 %			
	080-002-00-6										
8	nickel { nickel sulfate }				50 mg/kg	2.637	131.834 mg/kg	0.0132 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				110 mg/kg	2.469	271.623 mg/kg	0.0272 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				270 mg/kg		270 mg/kg	0.027 %			
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
16	pH				7.5	pH		7.5	pH	7.5 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	0.13	mg/kg		0.13	mg/kg	0.000013 %		
18	acenaphthylene		205-917-1	208-96-8	0.2	mg/kg		0.2	mg/kg	0.00002 %		
19	acenaphthene		201-469-6	83-32-9	0.2	mg/kg		0.2	mg/kg	0.00002 %		
20	fluorene		201-695-5	86-73-7	0.14	mg/kg		0.14	mg/kg	0.000014 %		
21	phenanthrene		201-581-5	85-01-8	1.7	mg/kg		1.7	mg/kg	0.00017 %		
22	anthracene		204-371-1	120-12-7	0.31	mg/kg		0.31	mg/kg	0.000031 %		
23	fluoranthene		205-912-4	206-44-0	2.4	mg/kg		2.4	mg/kg	0.00024 %		
24	pyrene		204-927-3	129-00-0	2.6	mg/kg		2.6	mg/kg	0.00026 %		
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	1.3	mg/kg		1.3	mg/kg	0.00013 %		
26	chrysene	601-048-00-0	205-923-4	218-01-9	0.77	mg/kg		0.77	mg/kg	0.000077 %		
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	1.2	mg/kg		1.2	mg/kg	0.00012 %		
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.36	mg/kg		0.36	mg/kg	0.000036 %		
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.9	mg/kg		0.9	mg/kg	0.00009 %		
30	indeno[123-cd]pyrene		205-893-2	193-39-5	0.25	mg/kg		0.25	mg/kg	0.000025 %		
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.08	mg/kg		0.08	mg/kg	0.000008 %		
32	benzo[ghi]perylene		205-883-8	191-24-2	0.31	mg/kg		0.31	mg/kg	0.000031 %		
Total:										0.119 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Unlikely to be hazardous given the soil matrix and absence of a free draining liquid phase

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.027%)



Classification of sample: BH112[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH112[3]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				28 mg/kg	1.32	36.969 mg/kg	0.0037 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.5 mg/kg	1.631	0.815 mg/kg	0.0000815 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12 mg/kg	1.462	17.539 mg/kg	0.00175 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				180 mg/kg	1.126	202.66 mg/kg	0.0203 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	240 mg/kg		240 mg/kg	0.024 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.27 mg/kg		0.27 mg/kg	0.000027 %			
	080-002-00-6										
8	nickel { nickel sulfate }				50 mg/kg	2.637	131.834 mg/kg	0.0132 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				120 mg/kg	2.469	296.316 mg/kg	0.0296 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
16	pH				7.7	pH		7.7	pH	7.7 pH		
17	naphthalene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-052-00-2	202-049-5	91-20-3									
18	acenaphthylene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		205-917-1	208-96-8									
19	acenaphthene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		201-469-6	83-32-9									
20	fluorene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7									
21	phenanthrene				1.3	mg/kg		1.3	mg/kg	0.00013 %		
		201-581-5	85-01-8									
22	anthracene				0.25	mg/kg		0.25	mg/kg	0.000025 %		
		204-371-1	120-12-7									
23	fluoranthene				2.1	mg/kg		2.1	mg/kg	0.00021 %		
		205-912-4	206-44-0									
24	pyrene				2.2	mg/kg		2.2	mg/kg	0.00022 %		
		204-927-3	129-00-0									
25	benzo[a]anthracene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
	601-033-00-9	200-280-6	56-55-3									
26	chrysene				0.68	mg/kg		0.68	mg/kg	0.000068 %		
	601-048-00-0	205-923-4	218-01-9									
27	benzo[b]fluoranthene				1	mg/kg		1	mg/kg	0.0001 %		
	601-034-00-4	205-911-9	205-99-2									
28	benzo[k]fluoranthene				0.35	mg/kg		0.35	mg/kg	0.000035 %		
	601-036-00-5	205-916-6	207-08-9									
29	benzo[a]pyrene; benzo[def]chrysene				0.81	mg/kg		0.81	mg/kg	0.000081 %		
	601-032-00-3	200-028-5	50-32-8									
30	indeno[123-cd]pyrene				0.21	mg/kg		0.21	mg/kg	0.000021 %		
		205-893-2	193-39-5									
31	dibenz[a,h]anthracene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
	601-041-00-2	200-181-8	53-70-3									
32	benzo[ghi]perylene				0.28	mg/kg		0.28	mg/kg	0.000028 %		
		205-883-8	191-24-2									
33	asbestos				460	mg/kg		460	mg/kg	0.046 %		
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
Total:										0.141 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification



Classification of sample: BH108

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH108	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				5.3	mg/kg	1.32	6.998	mg/kg	0.0007 %		
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium chloride }				0.2	mg/kg	1.631	0.326	mg/kg	0.0000326 %		
	048-008-00-3	233-296-7	10108-64-2									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				8.7	mg/kg	1.462	12.716	mg/kg	0.00127 %		
		215-160-9	1308-38-9									
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
5	copper { dicopper oxide; copper (I) oxide }				11	mg/kg	1.126	12.385	mg/kg	0.00124 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	20	mg/kg		20	mg/kg	0.002 %		
	082-001-00-6											
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	080-002-00-6											
8	nickel { nickel sulfate }				6.9	mg/kg	2.637	18.193	mg/kg	0.00182 %		
	028-009-00-5	232-104-9	7786-81-4									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
10	zinc { zinc sulphate }				24	mg/kg	2.469	59.263	mg/kg	0.00593 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
11	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
12	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
13	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
14	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
15	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
16	pH				8.2 pH		8.2 pH	8.2 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	0.03 mg/kg		0.03 mg/kg	0.000003 %		
18	acenaphthylene		205-917-1	208-96-8	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
19	acenaphthene		201-469-6	83-32-9	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
20	fluorene		201-695-5	86-73-7	0.04 mg/kg		0.04 mg/kg	0.000004 %		
21	phenanthrene		201-581-5	85-01-8	0.2 mg/kg		0.2 mg/kg	0.00002 %		
22	anthracene		204-371-1	120-12-7	0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	fluoranthene		205-912-4	206-44-0	0.27 mg/kg		0.27 mg/kg	0.000027 %		
24	pyrene		204-927-3	129-00-0	0.29 mg/kg		0.29 mg/kg	0.000029 %		
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.17 mg/kg		0.17 mg/kg	0.000017 %		
26	chrysene	601-048-00-0	205-923-4	218-01-9	0.08 mg/kg		0.08 mg/kg	0.000008 %		
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.13 mg/kg		0.13 mg/kg	0.000013 %		
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.12 mg/kg		0.12 mg/kg	0.000012 %		
30	indeno[123-cd]pyrene		205-893-2	193-39-5	0.03 mg/kg		0.03 mg/kg	0.000003 %		
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
32	benzo[ghi]perylene		205-883-8	191-24-2	0.05 mg/kg		0.05 mg/kg	0.000005 %		
Total:								0.0144 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: BH107

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH107	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				26 mg/kg	1.32	34.328 mg/kg	0.00343 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.7 mg/kg	1.631	1.142 mg/kg	0.000114 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12 mg/kg	1.462	17.539 mg/kg	0.00175 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				95 mg/kg	1.126	106.959 mg/kg	0.0107 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	140 mg/kg		140 mg/kg	0.014 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.54 mg/kg		0.54 mg/kg	0.000054 %			
	080-002-00-6										
8	nickel { nickel sulfate }				35 mg/kg	2.637	92.284 mg/kg	0.00923 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				99 mg/kg	2.469	244.46 mg/kg	0.0244 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
16	pH				7.8 pH		7.8 pH	7.8 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	1.9 mg/kg		1.9 mg/kg	0.00019 %		
18	acenaphthylene		205-917-1	208-96-8	5.4 mg/kg		5.4 mg/kg	0.00054 %		
19	acenaphthene		201-469-6	83-32-9	4.3 mg/kg		4.3 mg/kg	0.00043 %		
20	fluorene		201-695-5	86-73-7	3.9 mg/kg		3.9 mg/kg	0.00039 %		
21	phenanthrene		201-581-5	85-01-8	19 mg/kg		19 mg/kg	0.0019 %		
22	anthracene		204-371-1	120-12-7	5.8 mg/kg		5.8 mg/kg	0.00058 %		
23	fluoranthene		205-912-4	206-44-0	31 mg/kg		31 mg/kg	0.0031 %		
24	pyrene		204-927-3	129-00-0	31 mg/kg		31 mg/kg	0.0031 %		
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	16 mg/kg		16 mg/kg	0.0016 %		
26	chrysene	601-048-00-0	205-923-4	218-01-9	11 mg/kg		11 mg/kg	0.0011 %		
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	12 mg/kg		12 mg/kg	0.0012 %		
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	3.7 mg/kg		3.7 mg/kg	0.00037 %		
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	8.8 mg/kg		8.8 mg/kg	0.00088 %		
30	indeno[123-cd]pyrene		205-893-2	193-39-5	4.3 mg/kg		4.3 mg/kg	0.00043 %		
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	1.6 mg/kg		1.6 mg/kg	0.00016 %		
32	benzo[ghi]perylene		205-883-8	191-24-2	5.1 mg/kg		5.1 mg/kg	0.00051 %		
Total:								0.0815 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification



Classification of sample: BH110

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH110	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				22 mg/kg	1.32	29.047 mg/kg	0.0029 %			
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium chloride }				0.3 mg/kg	1.631	0.489 mg/kg	0.0000489 %			
	048-008-00-3	233-296-7	10108-64-2								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				31 mg/kg	1.462	45.308 mg/kg	0.00453 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
5	copper { dicopper oxide; copper (I) oxide }				100 mg/kg	1.126	112.589 mg/kg	0.0113 %			
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	370 mg/kg		370 mg/kg	0.037 %			
	082-001-00-6										
7	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.8 mg/kg		0.8 mg/kg	0.00008 %			
	080-002-00-6										
8	nickel { nickel sulfate }				29 mg/kg	2.637	76.464 mg/kg	0.00765 %			
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %			<LOD
	034-002-00-8										
10	zinc { zinc sulphate }				82 mg/kg	2.469	202.482 mg/kg	0.0202 %			
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
12	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
16	pH				8.1 pH		8.1 pH	8.1 pH		
17	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
18	acenaphthylene		205-917-1	208-96-8	0.04 mg/kg		0.04 mg/kg	0.000004 %		
19	acenaphthene		201-469-6	83-32-9	0.04 mg/kg		0.04 mg/kg	0.000004 %		
20	fluorene		201-695-5	86-73-7	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
21	phenanthrene		201-581-5	85-01-8	0.23 mg/kg		0.23 mg/kg	0.000023 %		
22	anthracene		204-371-1	120-12-7	0.05 mg/kg		0.05 mg/kg	0.000005 %		
23	fluoranthene		205-912-4	206-44-0	0.35 mg/kg		0.35 mg/kg	0.000035 %		
24	pyrene		204-927-3	129-00-0	0.36 mg/kg		0.36 mg/kg	0.000036 %		
25	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.17 mg/kg		0.17 mg/kg	0.000017 %		
26	chrysene	601-048-00-0	205-923-4	218-01-9	0.11 mg/kg		0.11 mg/kg	0.000011 %		
27	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.14 mg/kg		0.14 mg/kg	0.000014 %		
28	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.05 mg/kg		0.05 mg/kg	0.000005 %		
29	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.11 mg/kg		0.11 mg/kg	0.000011 %		
30	indeno[123-cd]pyrene		205-893-2	193-39-5	0.03 mg/kg		0.03 mg/kg	0.000003 %		
31	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
32	benzo[ghi]perylene		205-883-8	191-24-2	0.04 mg/kg		0.04 mg/kg	0.000004 %		
Total:								0.0852 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- ND** Not detected
- CLP: Note 1 Only the metal concentration has been used for classification



Classification of sample: BH103[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name: **BH103[3]** LoW Code: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **0.2 m** Chapter: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH		PH		<0.03	pH		<0.03	pH	<0.03 pH		<LOD
2	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
3	acenaphthylene		205-917-1	208-96-8	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
4	acenaphthene		201-469-6	83-32-9	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
5	fluorene		201-695-5	86-73-7	0.05	mg/kg		0.05	mg/kg	0.000005 %		
6	phenanthrene		201-581-5	85-01-8	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
7	anthracene		204-371-1	120-12-7	0.1	mg/kg		0.1	mg/kg	0.00001 %		
8	fluoranthene		205-912-4	206-44-0	0.13	mg/kg		0.13	mg/kg	0.000013 %		
9	pyrene		204-927-3	129-00-0	0.13	mg/kg		0.13	mg/kg	0.000013 %		
10	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.07	mg/kg		0.07	mg/kg	0.000007 %		
11	chrysene	601-048-00-0	205-923-4	218-01-9	0.14	mg/kg		0.14	mg/kg	0.000014 %		
12	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.04	mg/kg		0.04	mg/kg	0.000004 %		
13	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.12	mg/kg		0.12	mg/kg	0.000012 %		
14	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.06	mg/kg		0.06	mg/kg	0.000006 %		
15	indeno[123-cd]pyrene		205-893-2	193-39-5	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
16	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.08	mg/kg		0.08	mg/kg	0.000008 %		
17	benzo[ghi]perylene		205-883-8	191-24-2	0.92	mg/kg		0.92	mg/kg	0.000092 %		
18	phenol	604-001-00-2	203-632-7	108-95-2	<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
Total:										0.00024 %		



Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
<LOD	Below limit of detection
ND	Not detected



Appendix A: Classifier defined and non CLP determinands

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4 H332, Acute Tox. 4 H302, Eye Irrit. 2 H319, STOT SE 3 H335, Skin Irrit. 2 H315, Resp. Sens. 1 H334, Skin Sens. 1 H317, Repr. 1B H360FD, Aquatic Acute 1 H400, Aquatic Chronic 1 H410

lead compounds with the exception of those specified elsewhere in this Annex (worst case)

CLP index number: 082-001-00-6

Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A

Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)

Additional Hazard Statement(s): Carc. 1A H350

Reason for additional Hazards Statement(s):

03 Jun 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3 H226, Asp. Tox. 1 H304, STOT RE 2 H373, Muta. 1B H340, Carc. 1B H350, Repr. 2 H361d, Aquatic Chronic 2 H411

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4

Description/Comments:

Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)

Additional Hazard Statement(s): Carc. 2 H351

Reason for additional Hazards Statement(s):

03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

pH (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4 H302, Acute Tox. 1 H330, Acute Tox. 1 H310, Eye Irrit. 2 H319, STOT SE 3 H335, Skin Irrit. 2 H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2 H319, STOT SE 3 H335, Skin Irrit. 2 H315, Aquatic Acute 1 H400, Aquatic Chronic 1 H410, Aquatic Chronic 2 H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1 H400, Aquatic Chronic 1 H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4 H302, Eye Irrit. 2 H319, STOT SE 3 H335, Carc. 2 H351, Skin Sens. 1 H317, Aquatic Acute 1 H400, Aquatic Chronic 1 H410, Skin Irrit. 2 H315



anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4 H302 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2 H315 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2 H351

benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds

cadmium {cadmium chloride}

Reasonable case CLP species based on hazard statements. Cadmium chloride potentially expected as or compound's industrial usage related to site history (dye works)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Reasonable case CLP species based on hazard statements/molecular weight, potential historical wastes from refuse destructors and smelting from industrial works

mercury {inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex}

Reasonable case CLP species based on hazard statements/molecular weight

nickel {nickel sulfate}

Reasonable case CLP species based on hazard statements/molecular weight

selenium {selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium selenosulfide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.



zinc {zinc sulphate}

Reasonable case CLP species based on hazard statements/molecular weight

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018

HazWasteOnline Classification Engine Version: 2021.187.4816.9162 (06 Jul 2021)

HazWasteOnline Database: 2021.187.4816.9162 (06 Jul 2021)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2019 - UK: 2019 No. 720 of 27th March 2019

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

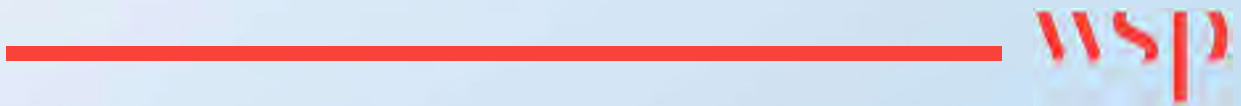
Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020

POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

Appendix H

GROUNDWATER GQRA GAC SCREEN



				Plot D						Plot C						
Test	EQS	DWS	LOD	Sample ID Sampling Date	BH101	BH102	BH103	BH104	BH105	BH106	BH107	BH108	BH109	BH110	BH111	BH112
					02/06/2021	02/06/2021	02/06/2021	02/06/2021	02/06/2021	02/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021
Metals																
Antimony, Dissolved	-	5	0.17	ug/l	NT	NT	NT	NT	NT	NT	0.62	1.1	0.42	0.38	0.31	0.28
Arsenic, Dissolved	50	10	0.16	ug/l	0.21	1	< 0.16	0.25	0.26	0.39	0.77	2	0.55	0.8	0.49	0.47
Barium, Dissolved	-	700	0.26	ug/l	NT	NT	NT	NT	NT	NT	57	100	61	180	84	110
Beryllium, Dissolved	-	12	0.1	ug/l	NT	NT	NT	NT	NT	NT	0.2	0.2	0.1	0.1	< 0.1	< 0.1
Boron, Dissolved	-	1000	12	ug/l	68	< 12	17	210	120	180	63	290	120	140	120	120
Cadmium, Dissolved	0.08	5	0.03	ug/l	< 0.03	< 0.03	< 0.03	0.04	0.12	0.34	NT	NT	NT	NT	NT	NT
Calcium, Dissolved	-	-	0.09	mg/l	NT	NT	NT	NT	NT	NT	64	140	110	200	170	240
Chromium, Dissolved	4.7	50	0.25	ug/l	0.34	0.44	0.26	0.47	0.58	0.52	2.6	2.4	1.4	1.9	0.93	0.65
Chromium III, Dissolved	4.7	50	1	ug/l	NT	NT	NT	NT	NT	NT	2.6	2.4	1.4	1.9	< 1.0	< 1.0
Chromium, Hexavalent	3.4	-	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	1	2000	0.4	ug/l	0.5	0.4	< 0.4	0.6	0.9	1.8	2.7	4.2	1.8	1.6	0.9	1.2
Iron, Dissolved	1000	200	5.5	ug/l	NT	NT	NT	NT	NT	NT	110	140	57	87	110	57
Lead, Dissolved	1.2	10	0.09	ug/l	0.17	0.21	< 0.09	0.16	< 0.09	< 0.09	2.2	4.7	1.3	1.4	0.75	0.48
Magnesium, Dissolved	-	-	0.02	mg/l	NT	NT	NT	NT	NT	NT	7.5	46	11	60	57	61
Manganese, Dissolved	123	50	0.22	ug/l	NT	NT	NT	NT	NT	NT	63	1700	1200	600	4700	84
Mercury, Dissolved	0.07	1	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	NT	NT	NT	NT	NT	NT
Molybdenum, Dissolved	-	70	1.1	ug/l	NT	NT	NT	NT	NT	NT	3.7	4.1	4.6	2.3	< 1.1	< 1.1
Nickel, Dissolved	4	20	0.5	ug/l	0.6	< 0.5	< 0.5	1.3	1	1.9	3.5	5.7	3.4	4	5.4	5.3
Selenium, Dissolved	-	10	0.25	ug/l	0.32	0.45	0.68	1.1	0.97	0.99	1.5	1.5	0.93	0.93	0.61	0.83
Vanadium, Dissolved	-	-	0.6	ug/l	NT	NT	NT	NT	NT	NT	2.2	3	1.2	1.4	0.6	< 0.6
Zinc, Dissolved	6.8	-	1.3	ug/l	2.7	< 1.3	< 1.3	< 1.3	6.1	4	3.7	19	5	4.5	8.2	7.3
Inorganics																
pH	-	-		pH	7.4	7.3	7.1	7.5	7.1	7.1	7.4	7.2	7.2	7.1	7	7.1
Sulphate as SO4	-	250000	0.1	mg/l	99	17	20	110	82	130	43	290	67	82	200	230
Cyanide, Total	-	50	40	ug/l	NT	NT	NT	NT	NT	NT	< 40	< 40	< 40	< 40	< 40	< 40
Cyanide, Free	1	-	20	ug/l	NT	NT	NT	NT	NT	NT	< 20	< 20	< 20	< 20	< 20	< 20
Total Hardness as CaCO3	-	-	0.1	mg/l	NT	NT	NT	NT	NT	NT	190	530	326	743	666	844
Ammoniacal Nitrogen as N	600	389	0.015	mg/l	NT	NT	NT	NT	NT	NT	0.073	10	0.6	7.1	0.067	0.61
Chloride	2	250000	0.1	mg/l	NT	NT	NT	NT	NT	NT	28	150	58	47	480	740
Fluoride	-	1500	0.1	mg/l	NT	NT	NT	NT	NT	NT	< 0.10	< 0.10	< 0.10	0.11	< 0.10	< 0.10
Sulphide	-	-	10	ug/l	NT	NT	NT	NT	NT	NT	18	16	22	< 10	13	14
Petroleum Hydrocarbons																
Aliphatic C5-C6	-	15000	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	-	15000	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	-	300	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	-	300	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	-	300	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.4	2.8
Aliphatic C16-C21	-	-	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	23	7.9
Aliphatic C21-C35	-	-	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	36	< 1.0
Aliphatic C5-C35	-	-	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	63	11
Aromatic C5-C7	10	700	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	74	300	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	20	300	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	2	90	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.7
Aromatic C12-C16	2	90	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	8.6
Aromatic C16-C21	0.1	90	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	22
Aromatic C21-C35	0.00017	90	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	39
Aromatic C5-C35	-	-	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	76
TPH Ali/Aro Total C5-C35	-	-	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	63	11
PAHs																
Naphthalene	2	-	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	-	-	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	-	-	0.01	ug/l	0.08	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.08	0.02	0.09	< 0.01	< 0.01	< 0.01
Fluorene	-	-	0.01	ug/l	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03	< 0.01	0.02	< 0.01	< 0.01	< 0.01
Phenanthrene	-	-	0.01	ug/l	0.04	< 0.01	< 0.01	0.01	0.02	0.08	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	0.1	-	0.01	ug/l	0.06	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	0.0063	-	0.01	ug/l	0.06	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.1	0.03	0.11	< 0.01	< 0.01	< 0.01
Pyrene	-	-	0.01	ug/l	0.05	< 0.01	< 0.01	< 0.01	0.01	0.1	0.07	0.13	< 0.01	< 0.01	0.01	< 0.01
Benzo(a)anthracene	-	-	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	-	-	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03	< 0.01	0.02	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	-	-	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	-	-	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	0.00017	0.01	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	-	-	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	-	-	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	-	-	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.01	< 0.01	< 0.01	< 0.01
PAH Total	-	-	0.2	ug/l	0.37	< 0.20	< 0.20	< 0.20	< 0.20	0.58	< 0.20	0.45	< 0.20	< 0.20	< 0.20	< 0.20
PCBs																
PCB 28 + PCB 31	-	-	0.3	ug/l	< 0.3					< 0.3	< 0.3			< 0.3		< 0.3
PCB 52	-	-	0.2	ug/l	< 0.2					< 0.2	< 0.2			< 0.2		< 0.2
PCB 101	-	-	0.3	ug/l	< 0.3					< 0.3	< 0.3			< 0.3		< 0.3
PCB 118 + PCB 123	-	-	0.6	ug/l	< 0.6					< 0.6	< 0.6			< 0.6		< 0.6
PCB 138	-	-	0.2	ug/l	< 0.2					< 0.2	< 0.2			< 0.2		< 0.2
PCB 153	-	-	0.2	ug/l	< 0.2					< 0.2	< 0.2			< 0.2		< 0.2
PCB 180	-	-	0.2	ug/l	< 0.2		</									

Appendix I

CIRIA C552



RISK APPRAISAL

RISK APPRAISAL METHODOLOGY

The CSM identifies potential contaminants, receptors and exposure pathways that may be present based on the selected end use (i.e. Residential, Commercial or Public Open Space etc).

The identification of potential “contaminant linkages” is a key aspect of the evaluation of potentially contaminated land. An approach based on the UK CIRIA report C552 (Contaminated Land Risk Assessment: A Guide to Good Practice, 2001) has been adopted within this report. For each of the contaminant linkages, an estimate is made of;

- The potential severity of the risk; and
- The likelihood of the risk occurring.

Table 1 presents the classification of the severity of the risk:

TABLE 1 SEVERITY OF RISK

Severe	Acute risks to human health; Major pollution of controlled waters (watercourses or groundwater)
Medium	Chronic (long-term) risk to human health; Pollution of sensitive controlled waters (surface waters or aquifers)
Mild	Pollution of non-sensitive water resources.
Minor	Requirement for protective equipment during site works to mitigate health effects; Damage to non-sensitive ecosystems or species

The probability of the risk occurring is classified by criteria given in Table 2.

TABLE 2 PROBABILITY OF RISK OCCURRING

High Likelihood	Contaminant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor.
Likely	Contaminant linkage may be present, and it is probable that the risk will occur over the long term.
Low Likelihood	Contaminant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Unlikely	Contaminant linkage may be present but the circumstances under which harm would occur are improbable.

An overall evaluation of the level of risk is gained from a comparison of the severity and probability as presented in Table 3.

TABLE 3 COMPARISON OF SEVERITY AND PROBABILITY

		Severity			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very high risk	High risk	Moderate risk	Moderate / low risk
	Likely	High risk	Moderate risk	Moderate/ low risk	Low risk
	Low Likelihood	Moderate risk	Moderate/ low risk	Low risk	Very low risk
	Unlikely	Moderate / low risk	Low risk	Very low risk	Very low risk

Table 4 then provides a description of the typical consequences and potential actions required following each risk definition.

TABLE 4 QUALITATIVE RISK ASSESSMENT - CLASSIFICATION OF CONSEQUENCE

Classification	Definition
Very High Risk	Severe harm to a receptor may already be occurring, or a high likelihood severe harm will arise to a receptor, unless immediate remedial works / mitigation measures are undertaken.
High Risk	Harm is likely to arise to a receptor, and is likely to be severe, unless appropriate remedial actions / mitigation measures are undertaken. Remedial works may be required in the short-term, but likely to be required over the long-term.
Moderate Risk	Possible that harm could arise to a receptor, but low likelihood that such harm would be severe. Harm is likely to be mild. Some remedial works may be required in the long-term.
Moderate / Low Risk	Possible that harm could arise to a receptor, but where a combination of likelihood and consequence results in a risk that is above low, but is not of sufficient concern to be classified as mild. Limited further investigation may be required to clarify the risk. If necessary, remediation works are likely to be limited in extent.
Low Risk	Possible that harm could arise to a receptor. Such harm, at worst, would normally be mild.
Very Low Risk	Low likelihood that harm could arise to a receptor. Such harm is unlikely to be any worse than mild.

It should be noted that the identification of potential contaminant linkages does not indicate that they are significant. The risk to ground workers during any redevelopment has not been assessed as part of these works. It is recommended that a task specific risk assessment, which may include stipulations with regards to appropriate work control procedures and personal protective equipment (PPE), is completed prior to any future construction works.



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