

Geo-Environmental Investigation & Assessment

For a site at

Cheetham Hill Road, Manchester

Undertaken on behalf of

ZX Cheetham Hill Developments Ltd

Report Title:	Cheetham Hill Road, Manchester Geo-environmental Investigation and Assessment
Report Reference:	10638G-WML-XX-ZZ RP-G-0002-B
Client:	ZX Cheetham Hill Developments Ltd
Issue Date:	3rd October 2022
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Revision Status / History

Rev	Date	Issue / Purpose/ Comment	Prepared	Checked	Authorised
-	03/10/2022	Draft Issue	TPB	SCS	SCS
A	28/10/2022	Updated Geotechnical Results	TPB	SCS	SCS
B	21/11/2023	Updated Proposed Site Plan	TPB	SCS	SCS

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Executive Summary

Site Location	The site comprises land off Cheetham Hill Road in Manchester. It is centred on approximate Ordnance Survey National Grid Reference 384078E, 399401N with an indicative postcode of M4 4FT.
Development Proposals	The project involves construction of a new multi-storey 17-23 storey mixed retail and residential structure, with limited soft landscaping and hardstanding for access.
Ground Conditions	Ground conditions encountered during the intrusive investigation generally comprised made ground to depths of between 0.85m and 4.80mbgl, underlain by interbedded cohesive and granular glacial deposits to a maximum proven depth of 18.45mbgl.
Site Preparation	Site development will include the demolition of existing structures which should not proceed until an appropriate Asbestos survey of the existing building has been undertaken and any Asbestos Containing Materials (ACM) removed by an appropriately licensed contractor. Similarly, any demolition materials present on site and considered for re-use should be inspected with any ACM removed accordingly prior to crushing. Historical/existing foundations, ground floor slabs and other buried concrete/brick obstructions associated with existing structures will need to be broken out to suitable depths below formation levels where they are to impinge on the proposed buildings. Such materials removed as part of the clearance work, subject to appropriate screening and crushing, will be suitable for re-use as bulk fill beneath hard cover areas.
Underground Storage Tanks (UST's)	Anecdotal information has indicated that the historical underground hydrocarbon storage tanks (UST's) have been removed. However, this has not been confirmed at this stage. Therefore, care should be taken during the surface strip and a careful examination undertaken to ensure that these have been suitably remediated.
Foundations	The new structure will be supported on piles. Pile design should assume no side support (skin friction) for the pile sections surrounded by made ground and may need to be designed to withstand potentially negative skin friction effects within cohesive strata. Pile type, selection and design should to be undertaken in conjunction with a reputable, specialist piling contractor, ideally with experience of the local ground conditions.
Concrete Classification	The typical design sulphate (DS) class and "Aggressive Chemical Environment for Concrete" (ACEC) class for the site are DS-1 and AC-1 respectively.
Road Pavements	New road pavement design should be based on a California Bearing Ratio (CBR) value of no more than 2.5% in untreated made ground and natural cohesive strata.
Ground Contamination	The chemical analyses indicates that the site does not appear to have been impacted by significant and / or widespread contamination sources when compared to the relevant reference values associated with site end use. No evidence of remaining underground storage tanks (USTs) were encountered. However, if any suspected UST's and associated pipework are encountered they should be decommissioned and removed to facilitate redevelopment of the site and reduce the risk to human health and the environment. Following site development, there will be no mechanism for a direct contact pollution linkage with contaminated soil where surfaced with buildings and hardstanding. However, a direct contact pollution linkage is plausible in proposed soft landscaped areas and it is recommended that these should be capped with a geotextile membrane overlain by 450mm of clean sub-soil and 150mm of topsoil to provide a 600mm clean cover and thus remove any localised pollution linkages. Chemical analysis of samples of made ground have indicated slight exceedances of leachable copper and lead with slightly elevated concentrations of sulphate, copper, chromium and selenium within the groundwater, which are above the stringent assessment criteria. A sample of groundwater also indicated a slightly elevated concentration of C21-C35. Taking into consideration the low sensitivity of the underlying superficial aquifer and that the source of any historic hydrocarbon contamination (UST's, fuel pumps and associated

	pipework) appear to have been removed from the site, the concentrations recorded are not considered to represent a significant ongoing source of contamination. However, it cannot be discounted that further hydrocarbon contamination could be encountered during the groundworks phase of construction and such should be referred to an environmental consultant who will assess the requirement for further ground investigation and risk assessment at that stage. In consideration of the underlying principal Aquifer and requirement for a piled foundation, it is also considered that a piling risk assessment will be required prior to the commencement of the proposed redevelopment of the site.
Ground Gas	The results give a maximum Qhg value of 0.001l/hr and indicate the site to classify as Characteristic Situation (CS) 1 – Very Low Gas Risk’.
Waste Soils	It will be the responsibility of the waste producer to undertake additional testing and classification of any waste soils for disposal to an appropriately licenced landfill in accordance with current guidelines. For preliminary guidance based on the current information, it is likely that made ground, would be classified as ‘Non-hazardous’ with natural soils classified as ‘Inert’ for landfill disposal.

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1.0 INTRODUCTION

Appointment

- 1.1 WML Consulting has been commissioned by RPS, acting on behalf of ZX Cheetham Hill Developments Ltd, to undertake a Geo-environmental Investigation and Assessment of a site located at 33-41 Cheetham Hill Road, Manchester.

Proposed Development

- 1.2 The project involves construction of a new multi-storey 17-23 storey mixed retail and residential structure, with limited soft landscaping and hardstanding for access.
- 1.3 A location plan (subject site is shown with a dashed red line) is included within Appendix 01.

Objective

- 1.4 The objective of the ground investigation and assessment was to provide geotechnical recommendations for construction design purposes together with a geo-environmental risk assessment in terms of possible ground contamination.
- 1.5 To achieve the objective, the following tasks were undertaken:
- Review the existing desk study report for the site and design a Phase 2 Ground Investigation.
 - Characterise the ground conditions in terms of geology, soil geotechnical parameters and ground contamination from information provided by the ground investigation.
 - Provide recommendations regarding suitable foundations together with any other geotechnical considerations that could affect possible future development.
 - Determine a ground conceptual model for the site so as to undertake a ground contamination Generic Quantitative Risk Assessment (GQRA).

Scope

- 1.6 A Phase 1 Desk Study for the site area has been undertaken by ESI Environment Specialists and is presented in the following report which is included in Appendix 07:
- ESI Phase 1 Geoenvironmental Assessment Report, Reference 61519R1, dated May 2013.
- 1.7 This report includes the findings of a Phase 2 Ground Investigation designed on conclusions and recommendations within the Phase 1 Desk Study. For ease of reference, the findings of the Desk Study are summarised in the following sections. However, the two reports are not exclusive and should be read in conjunction.
- 1.8 The ground investigation comprised the formation of window sample probeholes and cable percussive boreholes undertaken with reference to BS5930:2015 + A1:2020 Code of Practice for Ground Investigation and BS10175:2011 together with A1:2013, "Investigation of Potentially Contaminated Sites - Code of Practice" except where superseded by EN ISO 22475-1 "Geotechnical Investigation and Assessment – Sampling by Drilling and Excavation and Groundwater Measurements".
- 1.9 Geotechnical soil testing was undertaken in general accordance with guidelines provided in BS1377:1990 – Parts 1-9, "Method of Test for Soils for Civil Engineering Purposes". Samples for chemical analysis were obtained and handled generally in accordance with the current guidelines (BS10175: 2011 and A1:2013).

2.0 SITE LOCATION AND DESCRIPTION

Site Location

- 2.1 The site comprises land off Cheetham Hill Road in Manchester. It is centred on approximate Ordnance Survey National Grid Reference 384078E, 399401N with an indicative postcode of M4 4FT.
- 2.2 The site is bounded to the north by Carnarvon Street with commercial properties beyond, to the west by Gibson Place with commercial properties beyond, to the east by Cheetham Hill Road with a Petrol Filling Station beyond and to the south by further commercial properties.

Site Description

- 2.3 At the time of the site investigation in August 2022 the site comprised a former petrol filling station that had more recently been used as a car wash.
- 2.4 The site was secured by fenced from public access and was no longer in use. A dilapidated structure, considered to be the former car-wash, was located in the north-eastern part and a canopy extending over the central part. An area of dense vegetation was located to the north and north-east of the structure.
- 2.5 The site was surfaced by a mixture of concrete and asphalt hardstanding.
- 2.6 No evidence of remaining underground storage tanks or associated pipework, such as a breather pipe, were visible at the time of the site investigation. Anecdotal information has indicated that these have previously been removed prior to use as a car wash, but this could not be confirmed.

Topography

- 2.7 A topographical survey of the site by Survey Operations, referenced 22F169/001, is presented in Appendix 01 and indicates the site to be roughly level between 44.47m and 4.79m Above Ordnance Datum (AOD).

3.0 SUMMARY OF ENVIRONMENTAL AND HISTORICAL SETTING

3.1 The following paragraphs summarise the most relevant findings of the Phase 1 desk study report.

Geology

3.2 The BGS plans indicate that the site is underlain by cohesive Glacial Till. The drift deposits are underlain by the Triassic Chester Formation, indicated to comprise sandstone.

Radon

3.3 The site is not in Radon Affected Area as defined by the UK Health Security Agency as less than 1% of properties are above the Action Level of exposure. Therefore, no radon protection measures are necessary for new structures as described in publication BR211 by the Building Research Establishment.

Mining and Subsidence

3.4 In consideration of the indicated geology, risks to the development from subsidence relating to shallow, unrecorded abandoned mine workings are considered low and can be discounted.

3.5 The risk from non-coal mining activity at the site is also considered low.

Environmental Setting

3.6 The bedrock underlying the site is classified as a 'Principal Aquifer'. The superficial strata is classified as a Secondary (Undifferentiated) Aquifer'.

3.7 The site is not within an Environment Agency Source Protection Zone. The nearest surface water feature is the River Irk, located around 180m south of the site.

3.8 There are no active landfills located within 500m of the site or historic landfills located within 250m of the site.

Site History

3.9 The earliest map dated 1850 indicated the site to have already been developed with residential dwellings. In the 1970's the site was redeveloped as a petrol filling station and more recently modified for use as a hand car wash before falling into disuse. The ESI Phase 1 Report indicates that the underground storage tanks have been removed from the ground, although no further information is provided.

3.10 The area surrounding the site has historically comprised mixed residential and commercial developments, including a number of historic works in the immediate vicinity.

Preliminary Contamination Risk Assessment

3.11 The approach at the Phase 1 Desk Study stage was precautionary until such time as uncertainties in the conceptual model can be verified by appropriate site investigation.

3.12 However, based on the site history and the proposed development scenario, potential pollution linkages were considered likely with associated preliminary risks being generally assessed as medium to high.

3.13 Such uncertainties relate in the main to the level of contamination associated with the sites historic use as a petrol filling station, including the potential for leakage from any remaining underground storage tanks.

3.14 In addition the potential for ACM and asbestos fibres to be present within existing structures and shallow soils cannot be discounted.

4.0 SITE INVESTIGATION

Rationale

- 4.1 Intrusive investigations were undertaken primarily to provide geotechnical parameters for structural design purposes but also to verify the preliminary site conceptual model and clarify the environmental risk.
- 4.2 Window sample probeholes were undertaken to provide information on near surface deposits and to obtain samples for chemical analysis and geotechnical testing. Due to the small diameter of the probing equipment, the depth of penetration achieved is dependent on favourable ground conditions. As such, ground penetration may be restricted in circumstances where the ground is particularly strong or contains relatively large obstructions such as cobbles and/or boulders.
- 4.3 Cable percussive boreholes were undertaken to provide information on deeper deposits and to obtain samples for geotechnical testing and future pile design.
- 4.4 The investigation locations were chosen so as not to impact on the presence of known/suspected services beneath the site.
- 4.5 Monitoring standpipes have been installed in selected boreholes for the measurement of groundwater levels.
- 4.6 Chemical analysis of a general suite of contaminants was undertaken on selected samples of soil. This was to clarify the expected contamination risk.

Intrusive Works

- 4.7 The initial phase of ground investigations were undertaken by LOT Geotechnics Ltd on 16th August 2022. This comprised the formation of 4no window sample probeholes to a maximum depth of 5.00 metres below ground level (mbgl).
- 4.8 Two cable percussive boreholes were then formed between 20th and 23rd September 2022 by Paul Blackledge Drilling to a maximum depth of 18.45mbgl.
- 4.9 The exploratory hole records are presented in Appendix 02 of this report whilst the exploratory hole locations are shown on drawing 10638G-SK02 in Appendix 01.

Monitoring Standpipes

- 4.10 Monitoring wells for groundwater measurements were installed in 3 No. probeholes, namely WS01, WS02 and WS04 as indicated on the logs presented in Appendix 02.

Geotechnical and Chemical Testing

- 4.11 In-situ geotechnical testing was undertaken at regular intervals during the formation of the window samples and boreholes in the form of Standard Penetration Tests (SPT's). The results for this testing are presented on the descriptive logs in Appendix 02.
- 4.12 Geotechnical soils testing was undertaken on selected samples for the following:
- Natural moisture content
 - Liquid and Plastic limits.
 - Laboratory California Bearing Ratio tests.
 - Undrained Shear Strength in triaxial compression.
 - pH and sulphate (2:1 water soluble).
- 4.13 The results of the geotechnical testing are included within Appendix 03.

- 4.14 Chemical analysis was undertaken on selected soil samples for the following contaminants of concern:
- Total arsenic, boron, cadmium, chromium VI, copper, lead, mercury, nickel, selenium, vanadium, zinc.
 - Total cyanide, phenols, sulphur, sulphate.
 - Speciated USEPA polycyclic aromatic hydrocarbons (PAH).
 - Total petroleum hydrocarbons (TPHCWG).
 - BTEX & MTBE.
 - Asbestos screen and identification.
 - 2:1 water/soil sulphate extract, pH.
- 4.15 In order to assess the potential risk to controlled waters, selected samples of shallow soils from the site underwent leachate preparation for the following suite of contaminants:
- Total arsenic, boron, cadmium, chromium VI, copper, lead, mercury, nickel, selenium, vanadium, zinc.
 - Speciated (16) hydrocarbons (PAH).
 - Total phenols.
 - Sulphate extract.
- 4.16 Where encountered groundwater samples from the standpipes were submitted for testing for the following contaminants of concern (CoC):
- Total arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc.
 - Total petroleum hydrocarbons (TPH).
 - BTEX & MTBE.
- 4.17 Due to the limited volumes of groundwater within the exploratory holes, the testing was limited by sample volume. The results of the chemical analysis are presented in Appendix 04.
- Groundwater and Ground Gas Monitoring**
- 4.18 Monitoring of standpipes for groundwater levels and ground gas has been undertaken on 4no occasions to date between 7th September and 19th October 2022. The results are presented in Appendix 05.

5.0 GROUND CONDITIONS

General

- 5.1 Ground conditions encountered during the intrusive investigation generally comprised made ground to depths of between 0.85m and 4.80mbgl, underlain by interbedded cohesive and granular glacial deposits to a maximum proven depth of 18.45mbgl.

Made Ground

- 5.2 Made ground was encountered within all exploratory holes from ground level to a depths of between 0.85m and in 4.80mbgl. The deepest area of made ground were recorded within WS01 and BH02 in the south-western part of the site and may reflect areas where underground storage tanks were historically located.
- 5.3 The made ground generally comprised a surface horizon of asphalt extending to around 0.10mbgl, underlain by grey to brown, sandy gravel with a medium cobble content. Gravel sized fragments included brick, concrete, sandstone and locally ash, slate, ceramic and plastic. Cobble sized fragments generally comprised brick.
- 5.4 Window sample WS01 was terminated at a depth of 4.00mbgl, due to water ingress causing the hole to collapse.
- 5.5 SPT 'N' values within the made ground ranged between 6 and 46 indicating the variable nature of the strata due to loose compaction and the presence of brick and concrete cobbles respectively.

Glacial Deposits

- 5.6 Within all of the exploratory holes penetrating the made ground, soil considered to represent glacial deposits were encountered beneath the made ground at depths of between 1.00m and 4.80mbgl, extending to a maximum proven depth of 18.45mbgl.
- 5.7 These deposits generally comprised brown and locally grey mottled, slightly silty, slightly sandy, slightly gravelly clay.
- 5.8 However, within BH01 and BH02, at greater depths the clay was interbedded with granular glacial deposits below depths of between 5.90m and 9.40mbgl and comprised variably silty sand and gravel.
- 5.9 SPT 'N' values within the upper part of cohesive glacial deposits, extending from beneath the made ground to 8.00mbgl, ranged between 10 and 31 indicating a locally very generally firm to stiff consistency.
- 5.10 SPT 'N' values within the lower part of the cohesive glacial deposits, from 9.00mbgl, were generally in excess of 50 indicating a very stiff consistency.
- 5.11 SPT 'N' values within the granular glacial deposits were generally recorded in excess of 50 indicating a dense state of compaction. A single N value of 8 was recorded in BH01 at 6.00mbgl, indicating a locally loose state of compaction.

Geotechnical Testing

- 5.12 Geotechnical testing undertaken on selected samples are summarised in the following table :

Test	Made Ground	Cohesive Glacial Deposits
Natural Moisture Content	17 - 24%	15 – 22%
Liquid Limit	-	30 – 44%
Plasticity Index	-	14 – 23% (Modified to 13.6 - 22.5%)
Atterberg Classification	-	Low – Intermediate Plasticity
C.B.R Value	0.7 – 9.8 %	-
Undrained Triaxial Strength Testing	-	103 - 146kN/m ²
Bulk Density	2.02 - 2.06Mg/m ³	2.11 – 21.3Mg/m ³
Dry Density	1.63 - 1.78Mg/m ³	1.79 – 1.83 Mg/m ³

Visual/Olfactory Evidence of Contamination

- 5.13 A hydrocarbon stain and odour was noted towards the base of the made ground in WS03 (between 2.25m and 2.35mbgl) and in WS04 (between 1.80 and 2.25mbgl). A hydrocarbon odour was also noted towards the base of the made ground in BH02 between 3.40 and 4.80mbgl. Subsequently samples were submitted for hydrocarbon analyses.
- 5.14 No further visual and/or olfactory evidence of significant ground contamination was identified within the exploratory holes during the investigation.

Groundwater

- 5.15 Perched groundwater was encountered during the formation of WS01 at a depth of 3.00mbgl.
- 5.16 Groundwater monitoring has recorded water levels in standpipes ranging between 1.57m and 3.77mbgl. However, WS01 was noted to be dry.
- 5.17 It should be appreciated that the groundwater observations described above have been undertaken during a very short period of time. Significant variations in the long-term groundwater regime may occur at other times, particularly with prolonged, extreme weather conditions, and that no account can be taken of such in this report.

General

- 5.18 It should also be appreciated that ground conditions may vary between and away from the exploratory hole positions, and that no account can be taken in this report of such variations.

6.0 GEOTECHNICAL APPRAISAL

Site Preparation

- 6.1 Site development will include the demolition of existing structures which should not proceed until an appropriate Asbestos survey of the existing building has been undertaken and any Asbestos Containing Materials (ACM) removed by an appropriately licensed contractor. Similarly, any demolition materials present on site and considered for re-use should be inspected with any ACM removed accordingly prior to crushing.
- 6.2 Historical/existing foundations, ground floor slabs and other buried concrete/brick obstructions associated with existing structures will need to be broken out to suitable depths below formation levels where they are to impinge on the proposed buildings. Such materials removed as part of the clearance work, subject to appropriate screening and crushing, will be suitable for re-use as bulk fill beneath hard cover areas.
- 6.3 Due to the possibility of unforeseen ground contamination beneath the existing structure, it is recommended that excavations should be overseen by an environmental specialist who will provide appropriate advice where any suspected contamination such as hydrocarbons or ACM is encountered during site preparation and/or subsequent groundworks.
- 6.4 No significant quantities of topsoil have been encountered at the site, so it is anticipated that any topsoil required for capping to landscaped areas will need to be imported to site, subject to suitability testing.
- 6.5 Site enabling works will need to take account of the integrity of any existing/ adjacent services at the site.
- 6.6 No significant earthworks are anticipated to facilitate redevelopment of the site with the exception of localised re-grading.

Underground Storage Tanks - USTs

- 6.7 Anecdotal information has indicated that the historical underground hydrocarbon storage tanks (UST's) have been removed. However, this has not been confirmed at this stage. Therefore, care should be taken during the surface strip and a careful examination undertaken to ensure that these have been suitably remediated.
- 6.8 If / where such are encountered during redevelopment their location and any associated pipe work should be established. In the event that the tanks have not previously been removed, they would form an underground void which could prove a source of ground instability if they were to deteriorate and collapse over a long period of time.
- 6.9 Therefore, it cannot be wholly discounted that the tanks would need to be removed by a specialist and the resulting hollow infilled with well compacted granular fill.
- 6.10 It is also recommended that a watching brief be undertaken during the site enabling works with any significant contamination so identified, including any previously unidentified UST's or other structures, being subject to further assessment and, where subsequently deemed an unacceptable risk, being subject to additional ground investigation, with any identified contamination sources being subject to an agreed remediation strategy.

Foundations

- 6.11 Made ground and any soft / loose natural deposits should be considered unsuitable for the direct support of structural loads as they will be weak and compressible, leading to possibly unacceptable total and differential settlements.

- 6.12 In consideration of the depths to competent bearing strata and the anticipated structural loads from the proposed multi-storey building, conventional shallow spread foundations are not considered a suitable option.
- 6.13 Therefore, it is recommended that the new structure be supported on piles. Pile design should assume no side support (skin friction) for the pile sections surrounded by made ground and may need to be designed to withstand potentially negative skin friction effects within cohesive strata.
- 6.14 Pile type, selection and design should to be undertaken in conjunction with a reputable, specialist piling contractor, ideally with experience of the local ground conditions.
- 6.15 However, for preliminary considerations, a pre-cast driven concrete pile would minimise waste soil arisings but potential noise and vibration effects may render this option unsuitable. Therefore, a bored pile solution could be the most appropriate solution for the site.
- 6.16 Foundation construction will also need to take account of any remaining and/or new services and the adjacent road infrastructure, where they are in close proximity, may need to be taken down to beneath the lowest level of the service trench so that their structural integrity is maintained.

Floor Slabs

- 6.17 Ground bearing floor slabs for the new structures should be suspended unless underlain by fill which has been compacted to an appropriate specification.

Excavations and Groundwater

- 6.18 Excavations at the site will be feasible using conventional hydraulic plant. All excavations at the site and specifically requiring man-entry, will need adequate lateral support, or will need to be battering back to a safe angle to ensure their stability.
- 6.19 Conventional 'sump and pump' dewatering measures are likely to be adequate to keep excavations dry, although it cannot be discounted that groundwater exclusion measures such as interlocking sheet piles would be required to prevent excessive ingress of water during periods of prolonged rainfall.
- 6.20 Such support measures will also reduce the risk of conditions that could lead to loss of ground beneath any nearby adjacent structures or infrastructure.

External Pavements

- 6.21 In consideration of the near surface ground conditions, it is recommended that new road pavement design should be based on a California Bearing Ratio (CBR) value of no more than 2.5% in untreated made ground and natural cohesive strata.
- 6.22 The CBR will need to be reviewed and confirmed by site inspection and possibly suitable in-situ testing at formation levels following any earthwork operations and prior to pavement construction.
- 6.23 In any event, all formations should be proof-rolled with any soft, loose or otherwise unsuitable material being removed and replaced with compacted granular fill.

Concrete Design

- 6.24 Design/mix of buried concrete should be undertaken in accordance with the "Aggressive Chemical Environment for Concrete" (ACEC) classification, of BRE Special Digest 1:2005 (Concrete in Aggressive Ground). With reference to the site history, it is deemed appropriate to classify the site as "Brownfield", with respect to BRE Special Digest, assuming mobile groundwater conditions.
- 6.25 Values of 2:1 water/soil extract for sulphate range between 27mg/l and 180mg/l. Values of pH at range from 8.1 to 9.7 indicating alkali conditions.

- 6.26 On the basis of these results, the typical design sulphate (DS) class and "Aggressive Chemical Environment for Concrete" (ACEC) class for the site are DS-1 and AC-1 respectively.

Drainage and Soakaways

- 6.27 In consideration of the predominantly cohesive nature of the natural soils and the limited external site area, soakaways are not considered a feasible drainage option for the site.

7.0 GENERIC QUANTITATIVE RISK ASSESSMENT (GQRA)

General

- 7.1 A review of the readily available information has concluded that the potential for exposure to ground contamination is likely leading to a medium to high preliminary risk.
- 7.2 Therefore, it has been considered prudent to undertake chemical analysis of the sub-surface soils to confirm the low human health risk status of the site.

Human Health

- 7.3 Selected samples have been analysed for a general suite of contaminants of concern and compared against Screening Levels (SL's) for human health to determine the significance of the measured concentrations in relation to the site conceptual model. Thus, a Generic Quantitative Risk Assessment has been undertaken in line with guidelines provided in Land Contamination Risk Management, October 2020.
- 7.4 The criteria for a limited number of contaminants have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.
- 7.5 Within the document, Category 4 Screening Levels (C4SL's) are described as being more pragmatic than previous screening criteria and represent concentrations in soil that present an 'acceptable' level of risk within the context of Part 2A.
- 7.6 The National Planning Policy Framework states that 'after development, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990'. Therefore, by inference, the C4SL's are appropriate for use in the planning context.
- 7.7 Although the SP1010 document states that C4SL only apply for a 'sandy loam soil with 6% soil organic matter', it is generally accepted that assessment criteria for metals are not sensitive to changes in soil organic content (SOM). The C4SL's have therefore been adopted as assessment criteria in this report for the listed metals within the SP1010.
- 7.8 Subsequent to SP1010, LQM/CIEH have published a document entitled 'The LQM/CIEH S4ULs for Human Health Risk Assessment' 2015. In brief, the document provides updated assessment criteria which have been derived in accordance with UK legislation, national as well as EA policy and using a modified version of the CLEA software and available guidance. The new screening criteria, or Suitable 4 Use Levels (S4ULs), are intended to provide a complete and updated replacement to the previous LQM/CIEH GAC of 2009. As such they are considered appropriate for use in this assessment for other contaminants not covered by C4SL's and/or for organic contaminants assuming a worst-case Soil Organic Matter (SOM) of 1% as an initial conservative assessment.
- 7.9 For each contaminant, S4UL's and C4SL's have been calculated for six land use scenarios, namely:
- Residential with homegrown produce.
 - Residential without homegrown produce.
 - Allotments.
 - Commercial.
 - Public Open Space, near residential housing.
 - Public Parks, remote from residential housing.
- 7.10 In light of the proposed development, and in the first instance the SL's for a "Residential without homegrown produce" end-use. However it may be more appropriate to assess these against 'Public Open Space near Residential Housing' due to the nature of the development. Therefore, the appropriate tables of relevant SL's are provided in Appendix 05.

Controlled Waters

- 7.11 Generic criteria for the assessment of potential groundwater contamination have been derived from very conservative guidelines protective of drinking water and environmental quality, namely:
- UK Drinking Water Standards (DWS) as defined by The Water Supply (Water Quality) Regulations, 2016;
 - UK Environmental Quality Standards (EQS) for Freshwater, based on the United Utilities Hardness based on the postcode (M4 4FT) of soft; 0 – 50mg/l CaCO₃.
 - Petroleum Products in Drinking-water, Background document for development of WHO Guidelines for Drinking-water Quality, 2011.
- 7.12 A table of relevant SL's are provided in Appendix 05.

Soil Test Results

- 7.13 8no soil samples were analysed for a suite of Contaminants of Concern (CoC). In the first instance the majority of the concentrations were measured below the SL's for a "Residential without homegrown produce" end-use with the following exceptions.

Contaminant	Number of Exceedances	SL (mg/kg)	Recorded Concentrations (mg/kg)	Samples
Lead	1	310	670	WS04 – 0.20m
Benzo[a]pyrene	1	3.2	4.2	WS01 – 0.40m
Dibenz[a,h]Anthracene	1	0.31	0.38	WS01 – 0.40m

- 7.14 However, in consideration of the proposed nature of the development it may be more appropriate to assess the values against the reference values for 'Public Open Space near Residential Housing'. In this case only a single value of lead (670mg/kg - WS04 – 0.20m) is noted to very slight elevated above the reference values of 630mg/kg.
- 7.15 8no samples submitted for TPH compound analysis recorded the majority of concentrations below the relevant reference values for the required end-use with the following exception.

Contaminant	Number of Exceedances	SL (mg/kg)	Recorded Concentrations (mg/kg)	Samples
TPH Aromatic C10-C12	1	250	340	WS04 – 1.85m

- 7.16 When compared against the reference values for 'Public Open Space near Residential Housing' all of the concentrations of TPH were below the relevant reference values.
- 7.17 A sample of asphalt from WS01 was analysed to determine the concentration of BaP, which, if the concentration exceeds 50mg/kg, may indicate that the asphalt is likely to contain coal tar at sufficient concentrations as to deem it hazardous waste. The analysis recorded a concentration of BaP of 2.3mg/kg, therefore suggesting that the asphalt does not contain coal tar at hazardous concentrations for disposal purposes.
- 7.18 Asbestos was also detected in 2no of the samples analysed (WS02 – 0.30m & WS02 – 0.60m) in the form of Amosite / Chrysotile fibres or clumps. Subsequent quantification indicated these comprised between 0.031% (WS02 – 0.60m) and 0.17% (WS02 – 0.30m) of the samples analysed.

Leachate Testing

- 7.19 4no samples of made ground were submitted for leachate preparation and testing for a range of contaminants of concern.
- 7.20 The majority of results were below the assessment criteria when compared to stringent drinking water and environmental standards (EQS with a water hardness of 0-50mg/l) with the following exceptions.

Contaminant	Ref Value ug/l		Concentration Exceedances ug/l		Sample
	EQS	UKDWS	EQS	UKDWS	
Copper	0.5	2000	2.6 – 4.5	-	WS01 - 1.20m WS02 – 0.35m WS04 – 1.50m
Lead	4	10	7.1 - 84	84	WS02 – 0.35m WS04 – 1.50m
pH	9	-	9.2 – 11.1	-	WS01 - 1.20m WS02 – 0.35m WS02 – 1.30m

Groundwater Analysis

- 7.21 1no sample of groundwater from WS02 was submitted for analysis for a range of metals, semi-metals and hydrocarbons. The majority of the concentrations measured were below the generic assessment criteria when compared to environmental standards (EQS with a water hardness of 0-50mg/l) and the more stringent drinking water standards with the following exceptions.

Contaminant	Ref Value ug/l			Exceedances in Groundwater ug/l			Sample
	EQS	UKDWS	WHO	EQS	UKDWS	WHO	
Sulphate	400	250	-	-	340	-	WS02
Copper	0.5	2000	-	5	-	-	WS02
Chromium	2	50	-	12	-	-	WS02
Selenium	-	10	-	-	11	-	WS02
TPH Aliphatic C21 - C35	-	-	300	-	-	365	WS02

- 7.22 The WHO Guideline Values for petroleum products in drinking water have been applied in the absence of current TPH water quality standards. However, for the aromatic TPH bandings of C6-C7, C7-C8 and C8-C10, the more conservative UK specific WQS for benzene, toluene and ethylbenzene have been used. For the aliphatic ranges C16-C21 and C21-C35, the guideline values for the aliphatic C8-C10 through to C12-C16 ranges of 300µg/l have been used. These are however considered conservative due to the increased stability and lower volatility of the longer chain aliphatics.

Discussion and Conclusions

Human Health

- 7.23 The test indicate that localised shallow made ground beneath the site contains levels of certain contaminants that are slightly elevated above their respective SL's. This relates to elevated concentrations of Lead and PAH Compounds recorded within a 2no samples of made ground at depths

of less than 0.40mbgl. Also when compared to a more appropriate reference values for 'Public Open Space near Residential Housing' only a single elevated concentration of lead was recorded.

- 7.24 A hydrocarbon stain and odour was encountered within WS03 between depths of 2.25m and 2.35mbgl, WS04 between depths of 1.80m and 2.25mbgl and BH02 between 3.40m and 4.80mbgl. A sample from WS04 at 1.85mbgl recorded slightly elevated concentrations of TPH within the lighter aromatic C10-C12 range. Samples of hydrocarbon impacted soils from BH02 were also submitted for TPH analyses, the results of which indicated no concentrations above their respective SL's.
- 7.25 No evidence of remaining underground storage tanks (USTs) were encountered. Made ground was recorded to a depth of 4.80mbgl in BH02 and in excess of 4.00mbgl in WS01 located in the south-western part of the site which may suggest their most likely historic location. However, it cannot be wholly discounted that further USTs or unidentified contamination sources could be encountered during site enabling works.
- 7.26 If any suspected UST's and associated pipework are encountered they should be delineated, decommissioned and removed to facilitate redevelopment of the site and reduce the risk to human health and the environment. On removal of the tanks, the ground should be inspected by an environmental specialist with any associated ground and/groundwater contamination being removed under the approved Remediation Strategy, which will include subsequent sampling and testing of the ground and groundwater beneath such areas to confirm that contamination risks have been reduced to acceptable levels.
- 7.27 Following site development, there will be no mechanism for a direct contact pollution linkage with contaminated soil where surfaced with buildings and hardstanding. However, a direct contact pollution linkage is plausible in proposed soft landscaped areas and it is recommended that these should be capped with a geotextile membrane overlain by 450mm of clean sub-soil and 150mm of topsoil to provide a 600mm clean cover and thus remove any localised pollution linkages.

Controlled Waters

- 7.28 Chemical analysis of samples of made ground have indicated slight exceedances of leachable copper and lead with slightly elevated concentrations of sulphate, copper, chromium and selenium within the groundwater, which are above the stringent assessment criteria.
- 7.29 Analysis of a sample of soil from WS04, noted to have hydrocarbon staining and odour, confirmed the presence of slight a slight exceedance within the aromatic TPH C10-C12 carbon bands. Although a suitable volume of groundwater could not be obtained from WS04 for analyses, an adjacent water sample from WS03 indicated a slightly elevated concentration of C21-C35 in the aliphatic range.
- 7.30 Although the bedrock underlying the site is classified as a 'Principal Aquifer' the overlying superficial deposits are predominantly cohesive and therefore relatively impermeable in nature, limiting the potential for downward migration of any localised mobile contamination sources.
- 7.31 Taking into consideration the low sensitivity of the underlying superficial aquifer and that the source of any historic hydrocarbon contamination (UST's, fuel pumps and associated pipework) appear to have been removed from the site, the concentrations recorded are not considered to represent a significant ongoing source of contamination.
- 7.32 Notwithstanding this, all UST's and associated pipework are to be removed and any further visual or olfactory signs of significant ground contamination encountered during the site clearance and groundworks phase of construction should be referred to an environmental consultant who will assess the requirement for further ground investigation and risk assessment at that stage.

- 7.33 In consideration of the underlying principal Aquifer and requirement for a piled foundation, it is also considered that a piling risk assessment will be required prior to the commencement of the proposed redevelopment of the site.

8.0 GROUND GAS RISK ASSESSMENT

Methodology

- 8.1 Current guidance for the assessment of risk associated with the presence of hazardous ground gases (principally methane and carbon dioxide) is provided in two key documents, namely:
- Code of practice for the Characterisation and remediation from Ground Gas in Affected Developments. British Standard Institution (BS 8485: 2015 & A1:2019); and
 - Assessing Risks posed by Hazardous Ground Gases to Buildings CIRIA (C665, 2007).
- 8.2 The assessment presented herein is primarily based on the BS8485 document.
- 8.3 Hazardous ground gas qualitative risk assessment is based on a conceptual model similar to that used for soil and groundwater contamination sources (i.e., source-pathway-receptor pollutant linkages). A semi-quantitative estimate of risk can be assessed based on knowledge of the conceptual model and a measure of hazardous gas concentration and gas flow at the site within monitoring standpipes.
- 8.4 Based on the measured flow rates and hazardous gas concentrations, individual "hazardous gas flow rates" (Q_{hg}) can be derived for each monitoring point, from which the "site characteristic hazardous gas flow rate" (Q_{hgs}), and then the "Characteristic Situation" (CS) can be determined.
- 8.5 BS8485 provides guidance on the level of gas protection requirements based upon the characteristic situation and the proposed development based on building type as outlined in Table 3.

Table 3 - Building Types

	Type A	Type B	Type C	Type D
Ownership	Private	Private or commercial/ Public, possible multiple	Commercial / Public	Commercial / Industrial
Control (Change of use)	None	Some but not all	Full	Full
Room Sizes	Small	Small/ medium	Small to Large	Large Industrial/ Retail Park

- 8.6 The proposed development therefore is indicated to comprise the construction of Type B buildings which include private or commercial structures with small to medium room sizes.

Ground Gas Conceptual Model

- 8.7 The property is not in a radon affected area as defined by the BGS/UK Health Security Agency, as less than 1% of properties are above the action level of exposure. Therefore, no radon protection measures are necessary for new structures as described in publication BR211 by the Building Research Establishment.
- 8.8 There are no active or historic landfill sites recorded within 250m of the site.
- 8.9 The intrusive site investigation found made ground within all exploratory holes to depths of between 0.85 and 4.80 mbgl the deepest area of made ground being likely to be associated with historic underground fuel storage tanks. The made ground typically comprised a surface horizon of asphalt extending to around 0.10m bgl, underlain by grey to brown sandy gravel with a medium cobble content and significant proportion of demolition materials. No significant visual or olfactory observations of hydrocarbon contamination of soils or groundwater were recorded.

- 8.10 The made ground was underlain by Glacial deposits to proven depths of up to 18.45 mbgl. The glacial deposits typically comprised brown and locally grey mottled, slightly silty slightly sandy slightly gravelly clay. This was interbedded with variably silty sand and gravel deposits below depths of between 5.90 and 9.40 mbgl.
- 8.11 With reference to Figure 6 of BS8576:2013, Guidance on investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOCs) the made ground and any remaining relict topsoil beneath the site are therefore considered to present a 'Low' ground gas generation potential.
- 8.12 In consideration of the above, the preliminary risk to the development from ground gas has been initially assessed as low, however the potential for ground gases originating from degraded fuel hydrocarbons could not be discounted. It was therefore considered prudent to confirm the ground gas regime by undertaking limited ground gas monitoring, primarily for methane and carbon dioxide, with associated flow rates, on six occasions between 7th September and 24th November 2022.

Results and Recommendations

- 8.13 The results indicate the concentrations of peak and steady state methane to be below instrument detection limit (0.1% by volume in air (v/v)) in all monitoring wells on all six monitoring rounds.
- 8.14 Peak carbon dioxide concentrations ranged from <0.1 to 1.6% v/v across the six monitoring rounds, with steady-state concentrations similar at <0.1 to 1.6%.
- 8.15 No detectable gas flow rates were recorded in any exploratory hole on any of the monitoring visits.
- 8.16 No positive concentrations of carbon monoxide or H₂S were detected during any of the monitoring visits.
- 8.17 The results of the monitoring visits have been used to derive a Characteristic Gas Situation which provides a maximum Q_{hg} of 0.001 l/hr. Guidance document BS8485:2015 + A1 2019 recommends that the site should be considered to fall under Characteristic Situation (CS) 1 – 'Very Low Gas Risk'.
- 8.18 On the basis of the available data, gas protection measures are not considered to be required for the proposed development.
- 8.19 This should be confirmed with the local authority Environmental Health / Building Control Officer prior to any building design being finalised.

9.0 OTHER POTENTIAL DEVELOPMENT CONSIDERATIONS

Excavated Soils

- 9.1 Excavation works undertaken during the development are likely to produce waste soils for which appropriate waste management will be required. In line with current sustainability principals, any waste soils should firstly be considered for re-use where possible by incorporation into the development.
- 9.2 However, due to the extent of the proposed redevelopment, it is envisaged that such excavated soil will, in the main, need to be removed from site under appropriate duty of care.
- 9.3 It should be noted that the chemical analysis results for disposal classification are assessed against different assessment criteria to those relating to contamination risk assessment. Soils that are deemed suitable for use in terms of risk to human health and the environment may not necessary be uncontaminated and could be classified as Non-Hazardous or even Hazardous for disposal purposes.
- 9.4 It will be the responsibility of the waste producer to undertake additional testing and classification of any waste soils for disposal to an appropriately licenced landfill in accordance with current guidelines.
- 9.5 For preliminary guidance based on the current information, it is likely that made ground, would be classified as 'Non-hazardous' with natural soils classified as 'Inert' for landfill disposal.
- 9.6 However, excavated soils which are contaminated with TPH compounds may classify as 'Hazardous' if disposed to landfill. Any soils containing ACM or significant asbestos fibres may also classify as 'Hazardous' following further quantification analysis.
- 9.7 A sample of asphalt recorded a concentration of BaP of 2.3mg/kg, suggesting that the asphalt does not contain coal tar in hazardous concentrations. However, where asphalt materials are to be removed from site as waste, further analysis should be undertaken to fully categorise the material for disposal at landfill.
- 9.8 In addition, for Inert and Hazardous waste disposal, allowance will need to be made for adequate Waste Acceptance Criteria (WAC) testing with appropriate consideration of the additional time and cost associated with this.
- 9.9 It will be the responsibility of the waste producer to undertake further testing and classification of any waste soils for disposal to an appropriately licenced landfill in accordance with current guidelines and Duty of Care requirements.

Imported Fill

- 9.10 Imported fill will be subject to specific quality requirements and should be accompanied by appropriate certification to confirm its suitability. Allowance should also be made for testing imported fill materials prior to placement to ensure suitability.

Water Supply Pipes

- 9.11 The relevant water supply provider will need to be consulted with regards the selection of suitable water supply pipe materials for the development. In consideration of the localised hydrocarbon contamination, it cannot be discounted at this stage that specific materials and measures to protect the water supply from ground contamination would be required. This will need to be confirmed once the development proposals have been finalised.

APPENDIX 01

Drawings

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No implied licence exists. This drawing should not be used to calculate areas for the purposes of valuation. Do not scale this drawing. All dimensions to be checked on the site by the contractor and such dimensions to be their responsibility. All work must comply with relevant British Standards and Building Regulations requirements. Drawing errors and omissions to be reported to the architect. To be read in conjunction with Architect's specification and other consultant information.

Rev	Description	Date
P01	Preliminary Issue	07.07.2023

26-28 Hilton Street
Manchester M1 2EH

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hawkinsbrown.com

Hawkins\Brown

Project
33-41 Cheetham Hill Road
33-41 Cheetham Hill Road,
Manchester,
M4 4FT

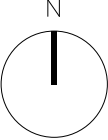
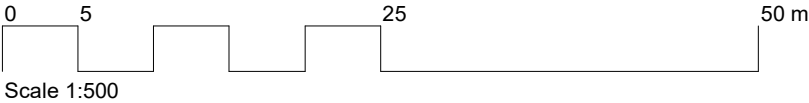
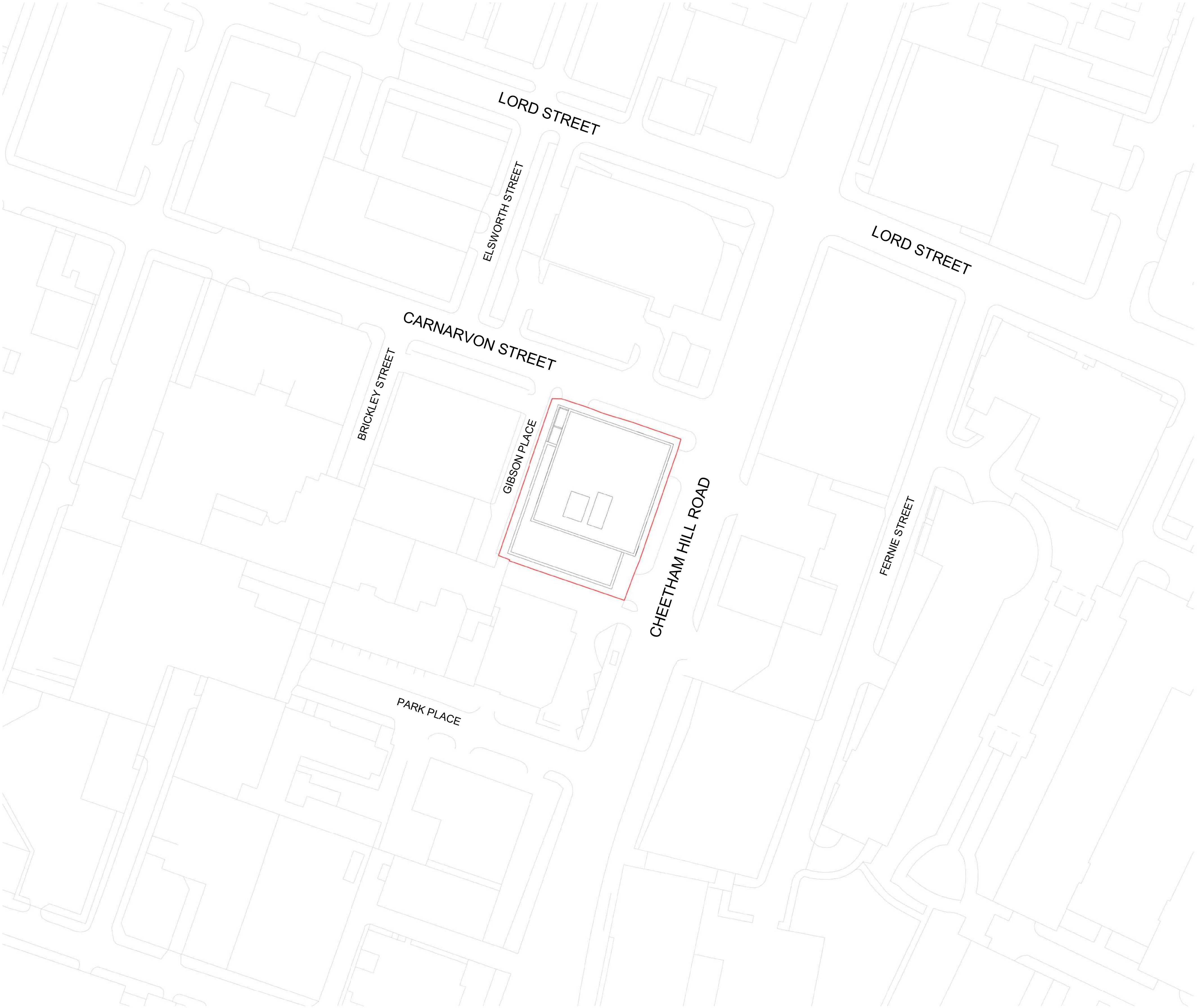
Drawing
Location Plan

Scale @ 1 : 500	Date 06/07/23
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Drawn By HG	Checked By NT
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Job Number 230069	Status S1	Purpose of Issue For Information
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Drawing No. CHR-HBA-ZZ-SW-DR-A-00-0001	Rev P01
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Rev	Description	Date
P01	Work in progress issue to design team	17.05.23
P02	Initial Stage 2 Costing Pack	21.06.23
P03	Work in progress issue to design team	05.07.23
P04	Work in progress issue to design team	21.07.23
P05	Issued for Design Team Coordination	18.08.23
P06	Issued for Design Team Coordination	13.10.23

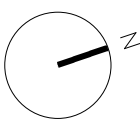
mail@hawkinsbrown.com
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Project
33-41 Cheetham Hill Road
33-41 Cheetham Hill Road,
Manchester,
M4 4FT

Drawing No.	Rev
CHR-HBA-ZZ-00-DR-A-00-0100	P06



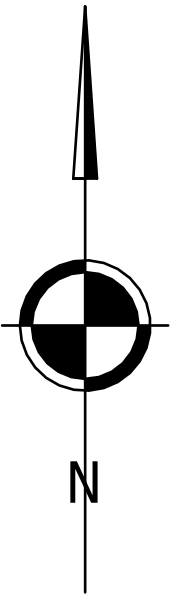
CHEETHAM HILL RD



SURVEY STATIONS			
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LB2	384061.72	399398.62	44.81
LB3	384072.97	399424.72	44.58
LB4	384098.93	399414.09	44.80
LB5	384085.66	399378.18	43.96
LB6	384050.88	399390.41	44.14
LB7	384060.06	399418.00	44.57

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Note:

The survey is plotted on a plane local Grid. Orientation to National Grid.

All levels relate to Ordnance Datum, achieved using the

OS National GPS Network.

Survey Control Markers established for Mapping purposes only and should not be used for Construction without the written approval of Survey Operations Ltd.



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Client

RPS Group

Drawing Title

Topographical Survey of Land at:
31-44 Cheetham Hill

Manchester

Scale(s) 1:200

Surveyor LB

Date AUG 22

Drawn CD

Job Number 22F169

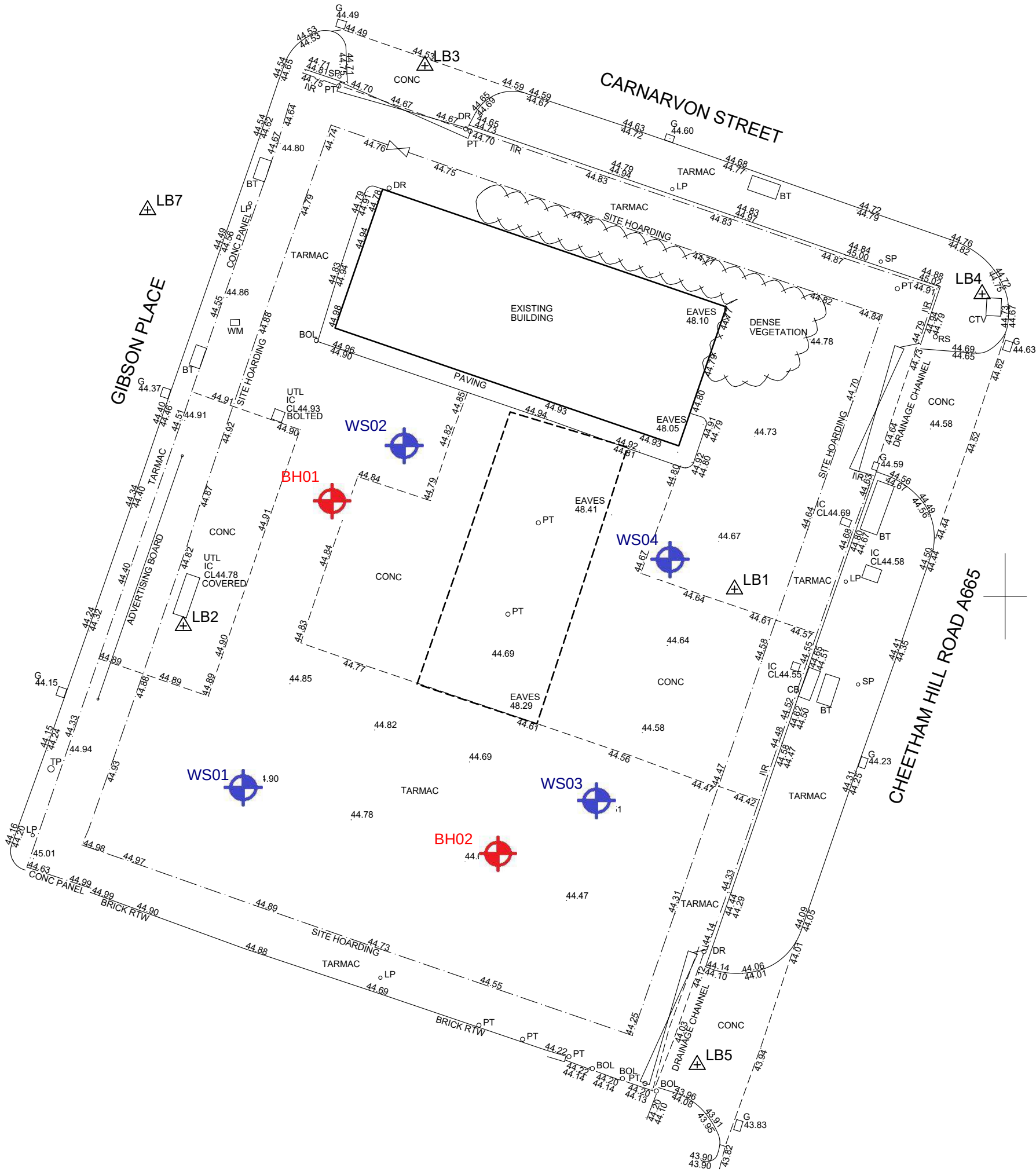
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Sheet Size & Drg Number & Revision

A2 22F169/001

WMLCONSULTING

Project: Cheetham Hill Rd
Drg Title: WS Location Plan
Job No: 10638G By: TPB
Drg No: SK-02 Rev: -
Date: 18/08/22 Scale: N.T.S.



APPENDIX 02

Exploratory Hole Records

		Project Title: Cheetham Hill Rd				WS01	
		Project Number: 10638G		Client: Urban Village			
		GL (mAOD):		N Coord: 0		E Coord: 0	
Date: 16/08/2022		Method: Window Sample		Driller: LOT Geotechnics Ltd		Logged By: TPB	

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
0.05	J	N=46			0.10	Asphalt (MADE GROUND)		
0.30	E				0.30	Red brown, gravelly SAND. Gravel is subangular, fine to coarse, including sandstone. (MADE GROUND)		
0.40	E				1.00	Brownish grey, sandy, subangular, fine to coarse GRAVEL including sandstone, brick and concrete. Medium cobble content. Cobbles subangular, including brick. Occasional clayey pockets. (MADE GROUND)		
1.20	E	N=17			2.00			
2.90	J	N=46			3.00			
		N=21			4.00			
					5.00			
					6.00			
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								
								

KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level		REMARKS Hole collapsing to 2mbgl. 	Water Strikes <table border="1"> <thead> <tr> <th>Date</th> <th>Strike</th> <th>Level</th> <th>Minutes</th> <th>Casing</th> <th>Sealed</th> </tr> </thead> <tbody> <tr> <td>18/08/2022</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Date	Strike	Level	Minutes	Casing	Sealed	18/08/2022	3																											
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18/08/2022	3																																					
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Date	Casing	Water	From	To	Hours																																	

		Project Title: Cheetham Hill Rd				WS02	
		Project Number: 10638G		Client: Urban Village			
		GL (mAOD):		N Coord: 0		E Coord: 0	
Date: 16/08/2022		Method: Window Sample		Driller: LOT Geotechnics Ltd		Logged By: TPB	

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
0.05	J	N=14			0.10	Asphalt (MADE GROUND) Grey, sandy, subangular, fine to coarse GRAVEL including sandstone. (MADE GROUND) Dark brownish grey, sandy, angular to subangular, fine to coarse GRAVEL including brick, sandstone, slate and ash. (MADE GROUND) Brown, clayey, sandy, subangular, fine to coarse GRAVEL including brick and sandstone. Medium cobble content. Cobbles are subangular, of brick. (MADE GROUND) Firm to stiff, brown and locally grey mottled, slightly silty, slightly sandy, slightly gravelly CLAY. Gravel is subangular, fine to coarse, of mixed lithologies. (GLACIAL TILL)		
0.30	E				0.20			
0.40	E				0.40			
1.20	E	N=25			1.00	End Of Borehole At 5.00 m		
					2.00			
					3.00			
					4.00			
					5.00			
2.90	J	N=21						
								
								
								
								
		N=19						
								
		N=19						
								
								

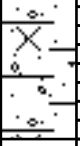
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				<table border="1"> <thead> <tr> <th>Date</th> <th>Strike</th> <th>Level</th> <th>Minutes</th> <th>Casing</th> <th>Sealed</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>						Date	Strike	Level	Minutes	Casing	Sealed																				
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Date	Casing	Water	From	To	Hours																														

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		Project Number: 10638G		Client: Urban Village			
		GL (mAOD):		N Coord: 0		E Coord: 0	
Date: 16/08/2022		Method: Window Sample		Driller: LOT Geotechnics Ltd		Logged By: TPB	

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
0.30	E	N=2			0.20	Asphalt (MADE GROUND)		
0.60	E							
		N=10			1.00	Brownish grey, sandy, angular to subangular, fine to coarse GRAVEL including brick, sandstone and asphalt. (MADE GROUND)		
					2.00			
2.20	E J				2.35	2.25 - 2.35 Hydrocarbon stain & aroma.		
2.30								
		N=25			3.00	Firm to stiff, brown and locally grey mottled, slightly silty, slightly sandy, slightly gravelly CLAY. Gravel is subangular, fine to coarse, of mixed lithologies. (GLACIAL TILL)		
						End Of Borehole At 3.00 m		
					4.00			
					5.00			
					6.00			

KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa - Groundwater Strike - Groundwater Level	REMARKS No Groundwater Encountered Hole collapsing to 1mbgl. Strata damp between 2.10 and 2.35mbgl. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6">Water Strikes</th> </tr> <tr> <th>Date</th> <th>Strike</th> <th>Level</th> <th>Minutes</th> <th>Casing</th> <th>Sealed</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">Daily Log Of Depths</th> <th colspan="3">Chiselling</th> </tr> <tr> <th>Date</th> <th>Casing</th> <th>Water</th> <th>From</th> <th>To</th> <th>Hours</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>	Water Strikes						Date	Strike	Level	Minutes	Casing	Sealed																			Daily Log Of Depths			Chiselling			Date	Casing	Water	From	To	Hours												
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Daily Log Of Depths			Chiselling																																																					
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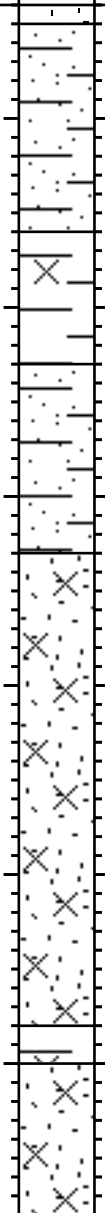
		Project Title: Cheetham Hill Rd				WS04	
		Project Number: 10638G		Client: Urban Village			
		GL (mAOD):		N Coord: 0		E Coord: 0	
Date: 16/08/2022		Method: Window Sample		Driller: LOT Geotechnics Ltd		Logged By: TPB	

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
0.20	E	N=2			0.30	Asphalt (MADE GROUND)		
0.50	E				1.00	Brownish grey, sandy, angular to subangular, fine to coarse GRAVEL, including sandstone, brick, slate, ceramic and plastic. (MADE GROUND)		
1.50	E	N=21			2.00	Greyish brown, sandy, subangular, fine to coarse GRAVEL including brick and sandstone. Medium cobble content. Cobbles are subangular, of brick. (MADE GROUND)		
1.85	J				2.25	0.30 - 1.20 Brick wall in east side of pit.		
2.10	J				3.00	1.80 - 2.25 Hydrocarbon stain & aroma.		
						Firm to stiff, brown and locally grey mottled, slightly silty, slightly sandy, slightly gravelly CLAY. Gravel is subangular, fine to coarse, of mixed lithologies. (GLACIAL TILL)		
						End Of Borehole At 3.00 m		
					4.00			
					5.00			
					6.00			

KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level		REMARKS No Groundwater Encountered Strata damp between 2.00 and 2.25mbgl. 	Water Strikes					
			Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths				Chiselling	
Date	Casing	Water	From	To	Hours

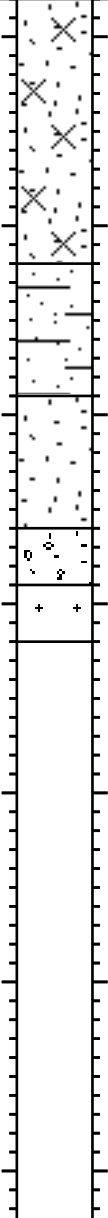
			Project Title: Cheetham Hill Rd				BH01																																																	
			Project Number: 10638G		Client: Urban Village					Sheet 1 Of 3																																														
			GL (mAOD):		N Coord: 0		E Coord: 0																																																	
Date: 22/09/2022-23/09/2022			Method: Cable Percussion		Driller: PB Drilling		Logged By: RH (PBD)																																																	
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe																																																
0.30 - 0.80	B	N=15			0.15 0.30	Asphalt. (MADE GROUND)																																																		
0.80 - 1.20	B				0.85 1.00	Roadstone. (MADE GROUND)																																																		
1.20 - 1.65	D					Brick, concrete & stone. (MADE GROUND)																																																		
2.00 - 2.45	U	N=14			2.00	Silty, sandy boulder CLAY. (GLACIAL TILL)																																																		
2.50	D																																																							
3.00 - 3.45	SPT				3.00																																																			
4.00 - 4.45	U	N=10			4.00	Very silty, sandy CLAY. (GLACIAL TILL)																																																		
4.50	D				4.30																																																			
5.00 - 5.45	SPT				5.00																																																			
6.00 - 6.45	SPT	N=8			5.90 6.00	Silty SAND. (GLACIAL DEPOSITS)																																																		
						Borehole Continues																																																		
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level			REMARKS No Groundwater Encountered 			Water Strikes <table border="1"> <thead> <tr> <th>Date</th> <th>Strike</th> <th>Level</th> <th>Minutes</th> <th>Casing</th> <th>Sealed</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="3">Daily Log Of Depths</th> <th colspan="3">Chiselling</th> </tr> <tr> <th>Date</th> <th>Casing</th> <th>Water</th> <th>From</th> <th>To</th> <th>Hours</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>			Date	Strike	Level	Minutes	Casing	Sealed																			Daily Log Of Depths			Chiselling			Date	Casing	Water	From	To	Hours												
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Date	Casing	Water	From	To	Hours																																																			
			Scale: 1:40																																																					

			Project Title: Cheetham Hill Rd				BH01				
			Project Number: 10638G		Client: Urban Village					Sheet 2 Of 3	
			GL (mAOD):		N Coord: 0		E Coord: 0				
Date: 22/09/2022-23/09/2022			Method: Cable Percussion		Driller: PB Drilling		Logged By: RH (PBD)				
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe			
6.50	D	N=31			6.50	Silty SAND. (GLACIAL DEPOSITS)					
7.50 - 7.95	SPT				7.60	Brown, sandy, boulder CLAY. (GLACIAL TILL)					
8.50	D	pp 50/125mm			8.30	Red brown, sandy, boulder CLAY. (GLACIAL TILL)					
9.00 - 9.45	SPT				9.30	Brown, sandy, boulder CLAY. (GLACIAL TILL)					
10.00	D	pp 50/95mm			11.80	Medium dense, silty SAND. (GLACIAL DEPOSITS)					
10.50 - 10.95	SPT				11.80	Brown, silty CLAY. (GLACIAL TILL)					
11.50	D	pp 50/100mm				Brown, silty SAND. (GLACIAL DEPOSITS)					
11.80	D										
12.00 - 12.45	SPT					Borehole Continues					
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level 			REMARKS No Groundwater Encountered Scale: 1:40			Water Strikes					
						Date	Strike	Level	Minutes	Casing	Sealed
						Daily Log Of Depths			Chiselling		
						Date	Casing	Water	From	To	Hours

WML CONSULTING			Project Title: Cheetham Hill Rd				BH01																												
			Project Number: 10638G		Client: Urban Village					Sheet 3 Of 3																									
			GL (mAOD):		N Coord: 0		E Coord: 0																												
Date: 22/09/2022-23/09/2022			Method: Cable Percussion		Driller: PB Drilling		Logged By: RH (PBD)																												
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe																											
13.00	D	pp 50/115mm				Brown, silty SAND. (GLACIAL DEPOSITS)																													
13.50 - 13.95	SPT																																		
14.50	D																																		
14.80	D	pp 50/240mm			14.80	Slightly claybound SAND. (GLACIAL DEPOSITS) Brown, very sandy, boulder CLAY. (GLACIAL TILL) Coarse orange SAND. (GLACIAL DEPOSITS)																													
15.00 - 15.45	SPT				15.40																														
16.50 - 16.95	SPT		pp 50/90mm				16.60																												
17.00	D	pp 50/145mm				Coarse orange SAND with silty clay lenses. (GLACIAL DEPOSITS)																													
18.00 - 18.45	SPT					Gravel with siltstone boulders. (GLACIAL DEPOSITS)																													
						Brown, sandy, boudler CLAY with sand lenses. (GLACIAL TILL)																													
					18.45	End Of Borehole At 18.45 m																													
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa ▽ - Groundwater Strike ▼ - Groundwater Level 			REMARKS No Groundwater Encountered Hole refused at 18.45mbgl.			Water Strikes <table><tr><th>Date</th><th>Strike</th><th>Level</th><th>Minutes</th><th>Casing</th><th>Sealed</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>						Date	Strike	Level	Minutes	Casing	Sealed																		
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Date	Casing	Water	From	To	Hours																														
From	To	Hours																																	

			Project Title: Cheetham Hill Rd				BH02																									
			Project Number: 10638G		Client: Urban Village					Sheet 1 Of 3																						
			GL (mAOD):		N Coord: 0		E Coord: 0																									
Date: 20/09/2022-21/09/2022			Method: Cable Percussion		Driller: PB Drilling		Logged By: RH (PBD)																									
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe																								
0.40 - 1.20	B	N=6			0.10	Asphalt. (MADE GROUND)																										
					0.40	Coarse red sand with stone. (MADE GROUND)																										
1.20 - 1.65	D				1.00	Sand, concrete and brick. Hydrocarbon aroma between 3.40 and 4.80mbgl. (MADE GROUND)																										
2.00 - 2.45	D	N=8			2.00																											
3.00 - 3.45	J	N=17			3.00																											
4.00 - 4.45	E	N=15			4.00																											
4.80	E	N=20			4.80	Brown, silty boulder CLAY. (GLACIAL TILL)																										
5.00 - 5.45	SPT				5.00																											
6.00 - 6.45	SPT	N=16			6.00																											
						Borehole Continues																										
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level			REMARKS 			Water Strikes <table border="1"> <tr> <th>Date</th> <th>Strike</th> <th>Level</th> <th>Minutes</th> <th>Casing</th> <th>Sealed</th> </tr> <tr> <td>29/09/2022</td> <td>2.5</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>			Date	Strike	Level	Minutes	Casing	Sealed	29/09/2022	2.5																
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29/09/2022	2.5																															
			Scale: 1:40			Daily Log Of Depths																										
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Date	Casing	Water	From	To	Hours																											

WML CONSULTING			Project Title: Cheetham Hill Rd				BH02					
			Project Number: 10638G		Client: Urban Village					Sheet 2 Of 3		
			GL (mAOD):		N Coord: 0		E Coord: 0					
Date: 20/09/2022-21/09/2022			Method: Cable Percussion		Driller: PB Drilling		Logged By: RH (PBD)					
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe				
7.00	D	N=22				Brown, silty boulder CLAY. (GLACIAL TILL)						
7.50 - 7.95	SPT											
8.00	D											
8.40	D	pp 50/125mm			8.40	Red brown boulder CLAY. (GLACIAL TILL)						
9.00 - 9.45	SPT											
9.40	D											
10.00	D	pp 50/65mm				Brown, sandy boulder CLAY. (GLACIAL TILL)						
10.50 - 10.95	SPT											
11.50	D											
12.00 - 12.45	SPT	pp 50/60mm				SAND. (GLACIAL DEPOSITS)						
12.50	D											
						Silty SAND. (GLACIAL DEPOSITS) Borehole Continues						
KEY			REMARKS			Water Strikes						
D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa - Groundwater Strike - Groundwater Level Scale: 1:40						Date	Strike	Level	Minutes	Casing	Sealed	
						29/09/2022	2.5					
						Daily Log Of Depths			Chiselling			
						Date	Casing	Water	From	To	Hours	

			Project Title: Cheetham Hill Rd				BH02																																																	
			Project Number: 10638G		Client: Urban Village					Sheet 3 Of 3																																														
			GL (mAOD):		N Coord: 0		E Coord: 0																																																	
Date: 20/09/2022-21/09/2022			Method: Cable Percussion		Driller: PB Drilling		Logged By: RH (PBD)																																																	
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe																																																
13.50 - 13.95	SPT	pp 50/190mm				Silty SAND. (GLACIAL DEPOSITS)																																																		
14.20	D				14.20	Reddish brown, sandy boulder CLAY. (GLACIAL TILL)																																																		
15.00 - 15.45	SPT	pp 50/145mm			14.90	Coarse, orange SAND. (GLACIAL DEPOSITS)																																																		
15.60	D				15.60	SAND & GRAVEL. (GLACIAL DEPOSITS)																																																		
16.20 - 16.65	SPT	pp 50/65mm			15.90	Gravel and boulders of SANDSTONE. (CHESTER FORMATION)																																																		
					16.20	End Of Borehole At 16.20 m																																																		
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level 			REMARKS Scale: 1:40			Water Strikes <table border="1"> <tr> <th>Date</th> <th>Strike</th> <th>Level</th> <th>Minutes</th> <th>Casing</th> <th>Sealed</th> </tr> <tr> <td>29/09/2022</td> <td>2.5</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <table border="1"> <tr> <th colspan="3">Daily Log Of Depths</th> <th colspan="3">Chiselling</th> </tr> <tr> <th>Date</th> <th>Casing</th> <th>Water</th> <th>From</th> <th>To</th> <th>Hours</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>			Date	Strike	Level	Minutes	Casing	Sealed	29/09/2022	2.5																	Daily Log Of Depths			Chiselling			Date	Casing	Water	From	To	Hours												
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Daily Log Of Depths			Chiselling																																																					
Date	Casing	Water	From	To	Hours																																																			

APPENDIX 03

Geotechnical Testing Results



LABORATORY REPORT



4043

Contract Number: PSL22/6418

Report Date: 18 October 2022
Client's Reference: 10638G
Client Name: WML Consultants
No 8 Oak Green Earl Road
Stanley Green Business Park
Cheadle Hulme
Cheshire
SK8 6QL

For the attention of: Tom Booth

Contract Title: Cheetham Hill
Date Received: 4/10/2022
Date Commenced: 4/10/2022
Date Completed: 18/10/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)

S Eyre
(Senior Technician)

T Watkins
(Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: rgunson@prosoils.co.uk
awatkins@prosoils.co.uk

Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
BH01		B	0.30	0.80	MADE GROUND brown very gravelly very sandy clay.
BH01		B	0.80	1.20	MADE GROUND brown slightly gravelly very sandy CLAY.
BH01		D	1.20	1.65	Brown mottled grey slightly gravelly very sandy CLAY.
BH01		U	2.00	2.45	Very stiff brown slightly gravelly sandy CLAY.
BH01		D	2.50		Brown slightly gravelly sandy CLAY.
BH01		U	4.00	4.45	Stiff brown slightly gravelly very sandy CLAY.
BH01		D	4.50		Brown slightly gravelly very sandy CLAY.
BH01		D	8.50		Brown very sandy CLAY.
BH02		B	0.40	1.20	MADE GROUND brown very sandy clayey GRAVEL.
BH02		S	6.00	6.45	Brown very sandy CLAY.
BH02		D	8.00		Brown mottled grey slightly gravelly sandy CLAY.



4043

PSL

Professional Soils Laboratory

Cheetham Hill

Contract No:

PSL22/6418

Client Ref:

10638G

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

[illegible]

SYMBOLS : NP : Non Plastic

*** : Liquid Limit and Plastic Limit Wet Sieved.**



4043

PSL

Professional Soils Laboratory

Cheetham Hill

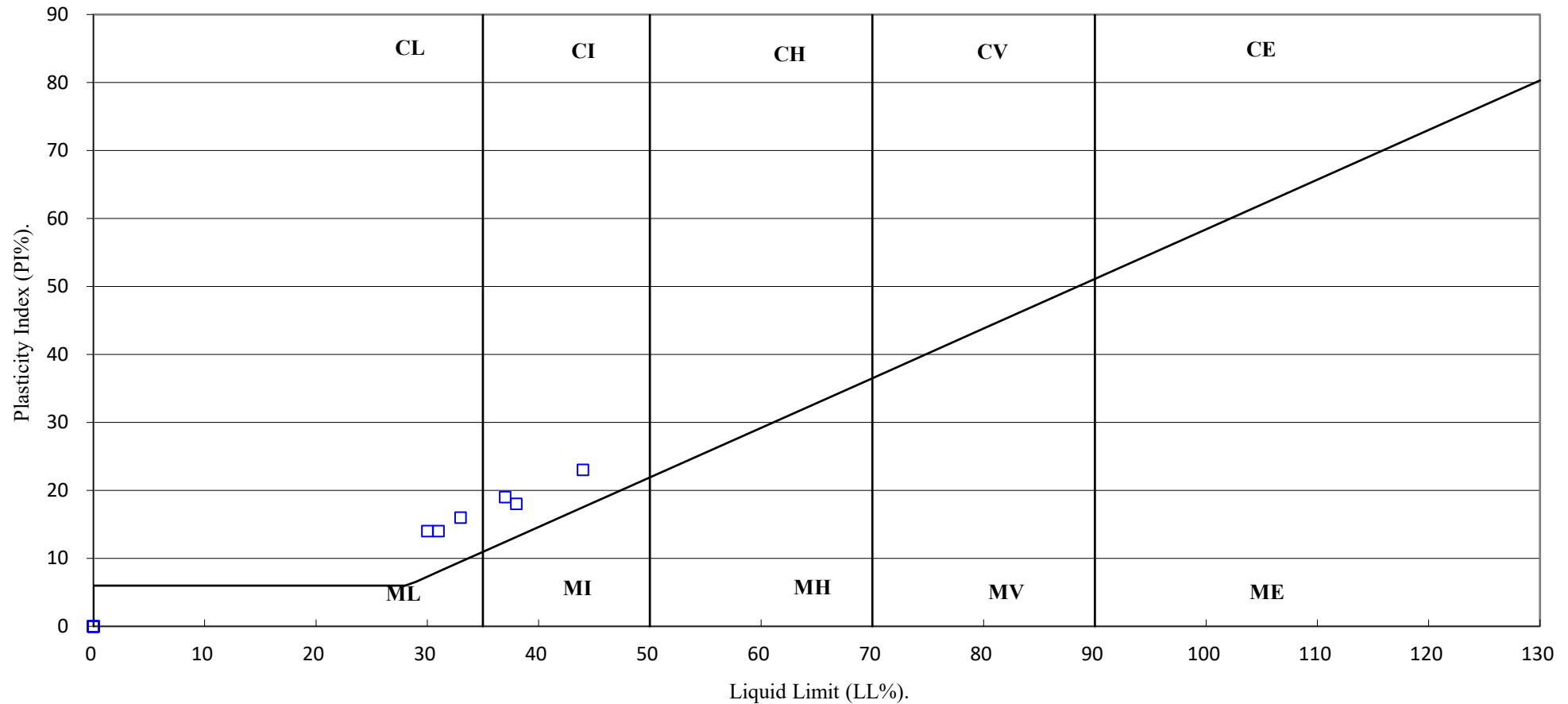
Contract No:

PSL22/6418

Client Ref:

10638G

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



4043

PSL

Professional Soils Laboratory

Cheetham Hill

Contract No:

PSL22/6418

Client Ref:

10638G

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

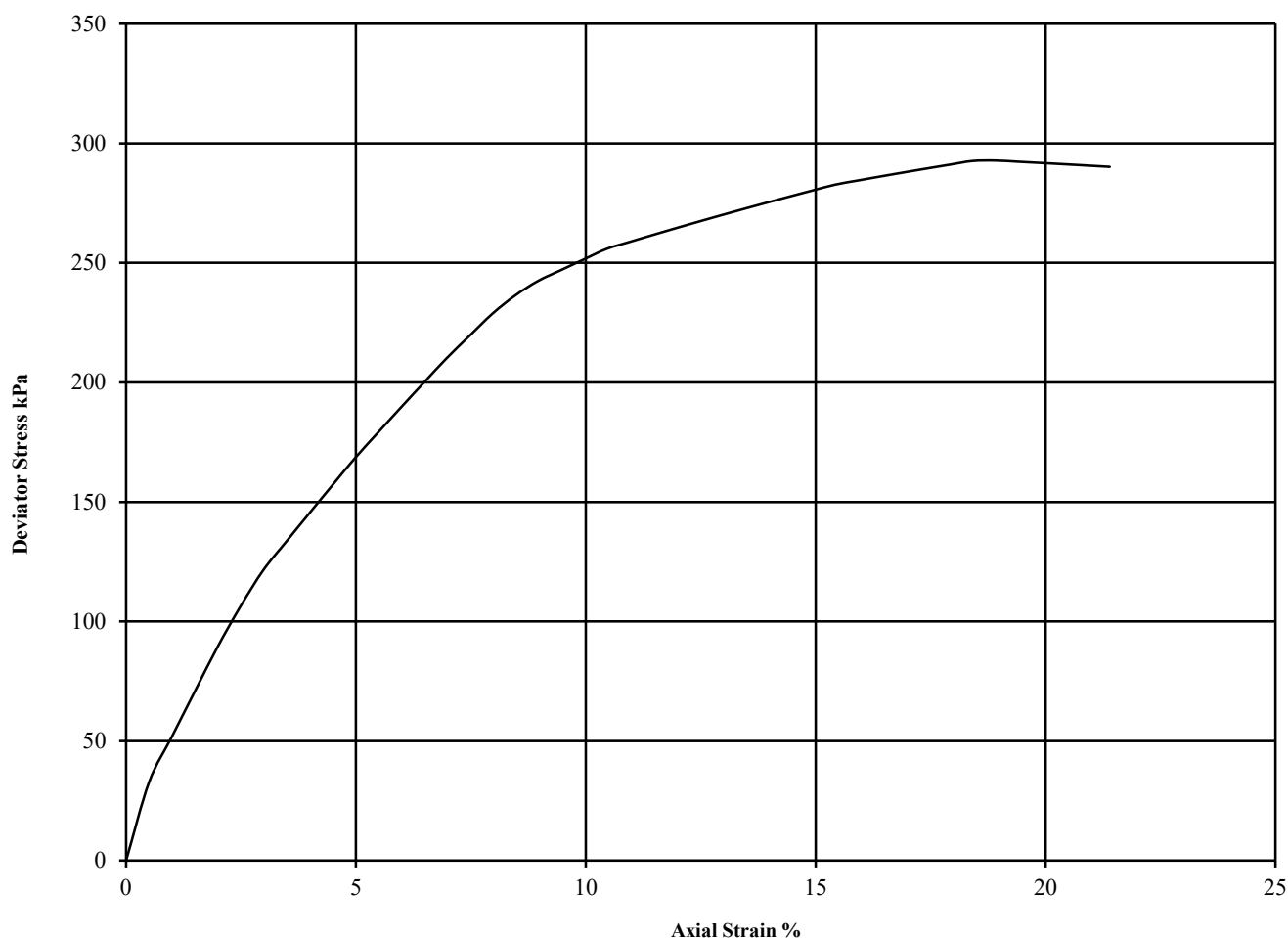
Hole Number: BH01

Top Depth (m): 2.00

Sample Number:

Base Depth (m): 2.45

Sample Type U



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33 See summary of soil descriptions
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			
1	18	2.11	1.79	40	293	146	18.9	Plastic	



4043

PSL
Professional Soils Laboratory

Cheetham Hill

Contract No:

PSL22/6418

Client Ref:

10638G

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

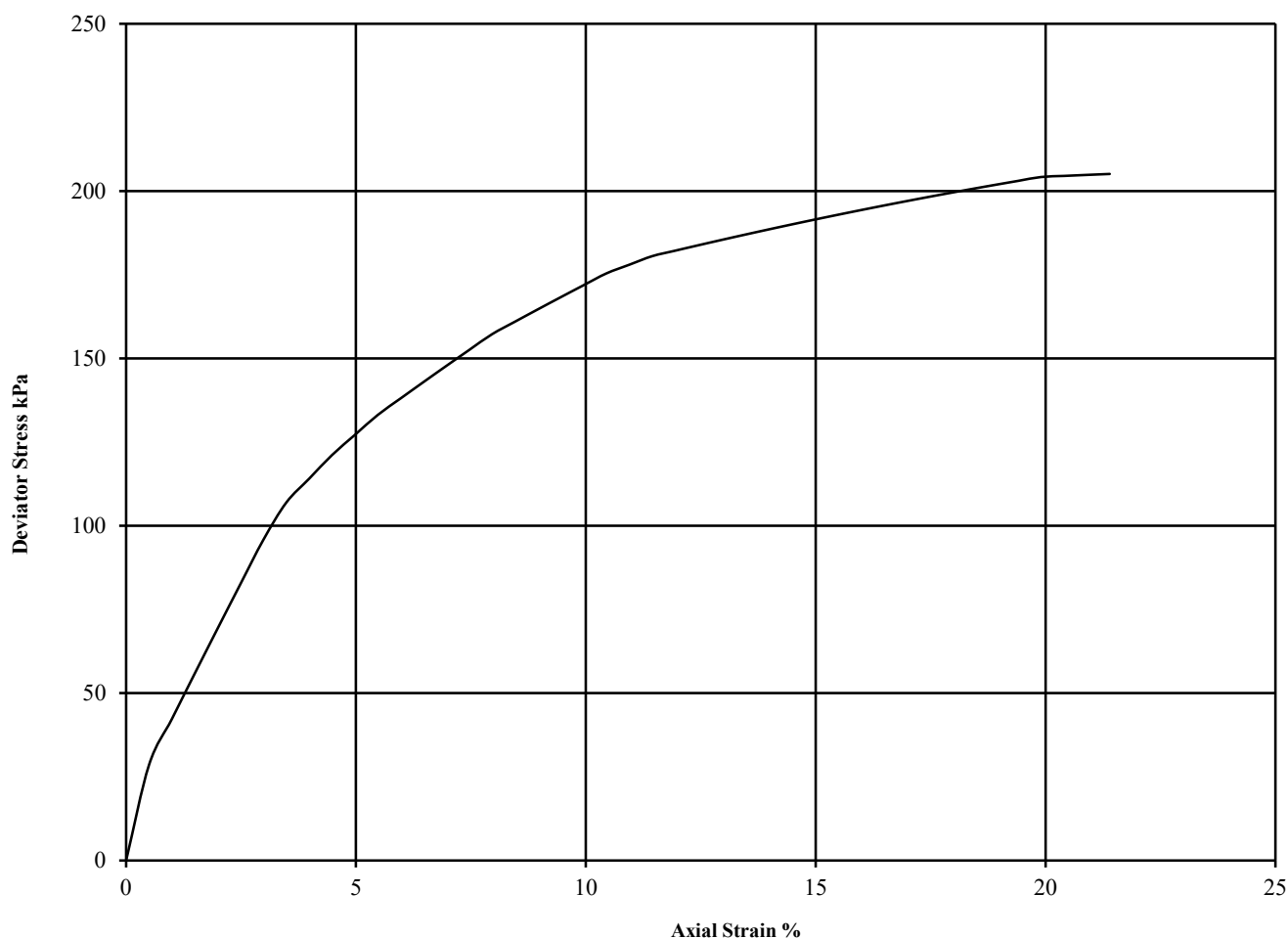
Hole Number: BH01

Top Depth (m): 4.00

Sample Number:

Base Depth (m): 4.45

Sample Type U



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33 See summary of soil descriptions
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			
1	16	2.13	1.83	80	205	103	21.4	Plastic	



4043

PSL
Professional Soils Laboratory

Cheetham Hill

Contract No:

PSL22/6418

Client Ref:

10638G

CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

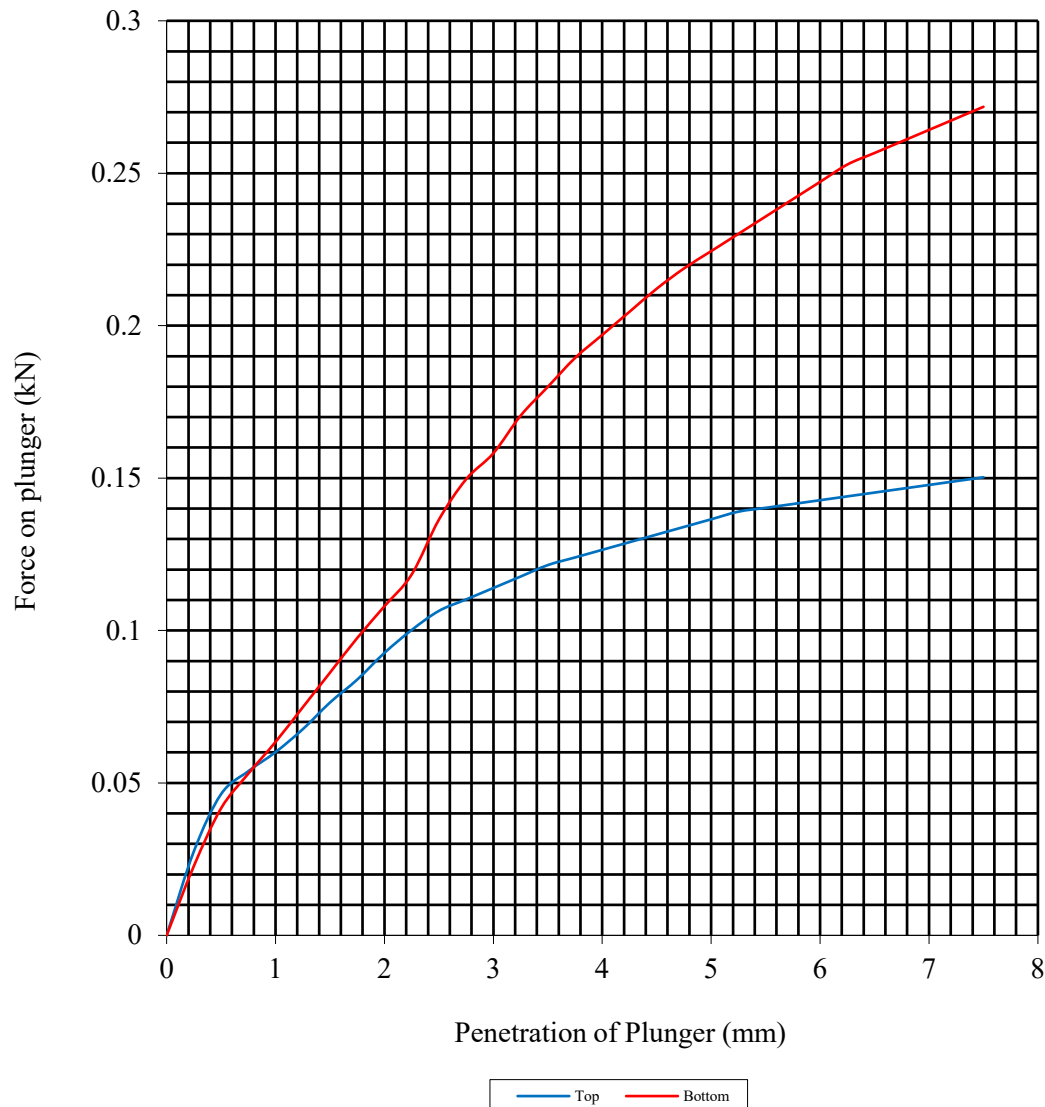
Hole Number: BH01

Top Depth (m): 0.30

Sample Number:

Base Depth (m): 0.80

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	19	Surcharge Kg:	4.00	Sample Top	20	Sample Top	0.8
Bulk Density Mg/m3:	2.06	Soaking Time hrs	94	Sample Bottom	20	Sample Bottom	1.1
Dry Density Mg/m3:	1.73	Swelling mm:	0.68	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:		23					
Compaction Conditions		2.5kg					



PSL
Professional Soils Laboratory

Cheetham Hill

Contract No:
PSL22/6418
Client Ref:
10638G

CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

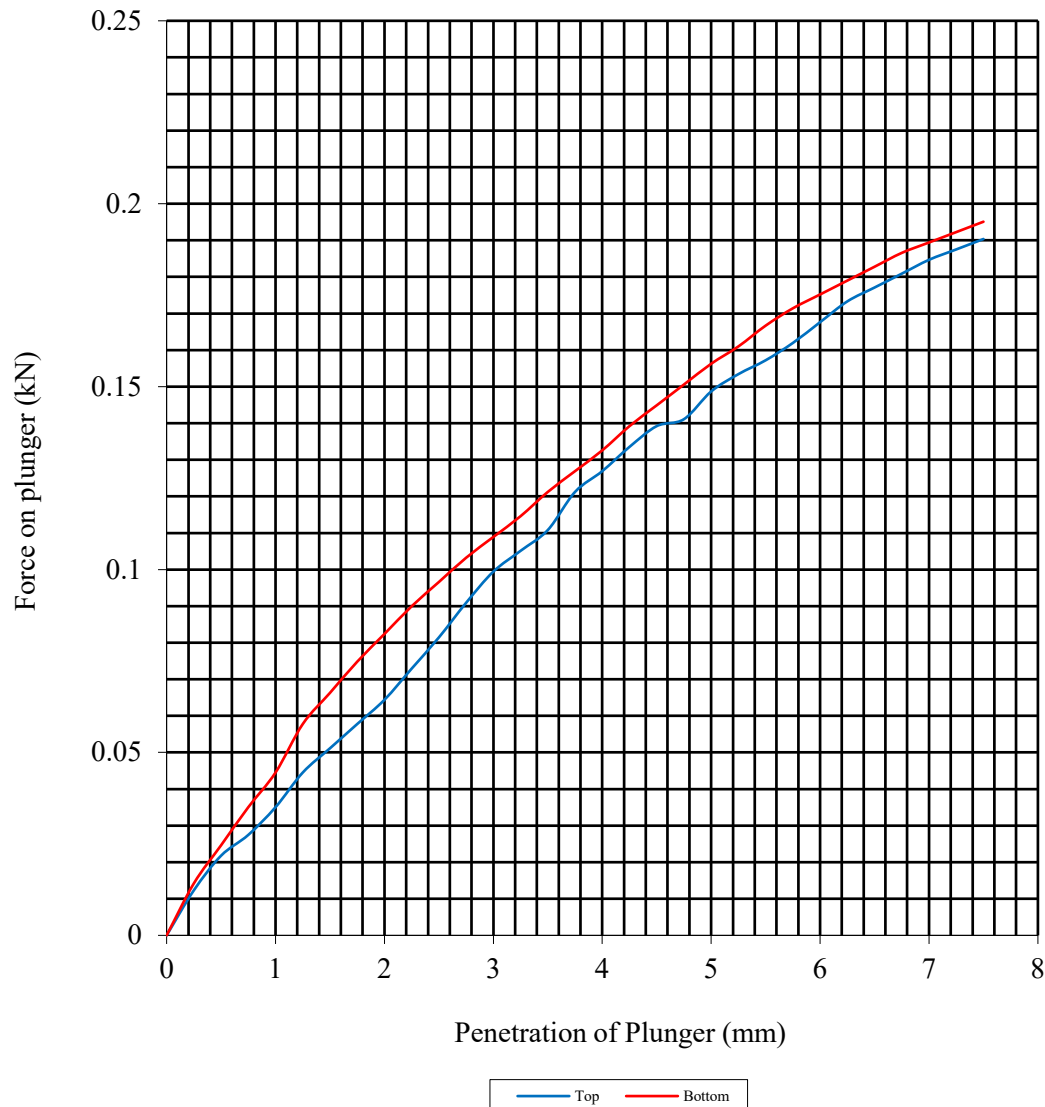
Hole Number: BH01

Top Depth (m): 0.80

Sample Number:

Base Depth (m): 1.20

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	24	Surcharge Kg:	4.00	Sample Top	25	Sample Top	0.7
Bulk Density Mg/m3:	2.02	Soaking Time hrs	96	Sample Bottom	25	Sample Bottom	0.8
Dry Density Mg/m3:	1.63	Swelling mm:	0.08	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			0				
Compaction Conditions		2.5kg					



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Client Ref:
10638G

CALIFORNIA BEARING RATIO TEST

Non compliance with BS 1377 : Part 4 : 1990

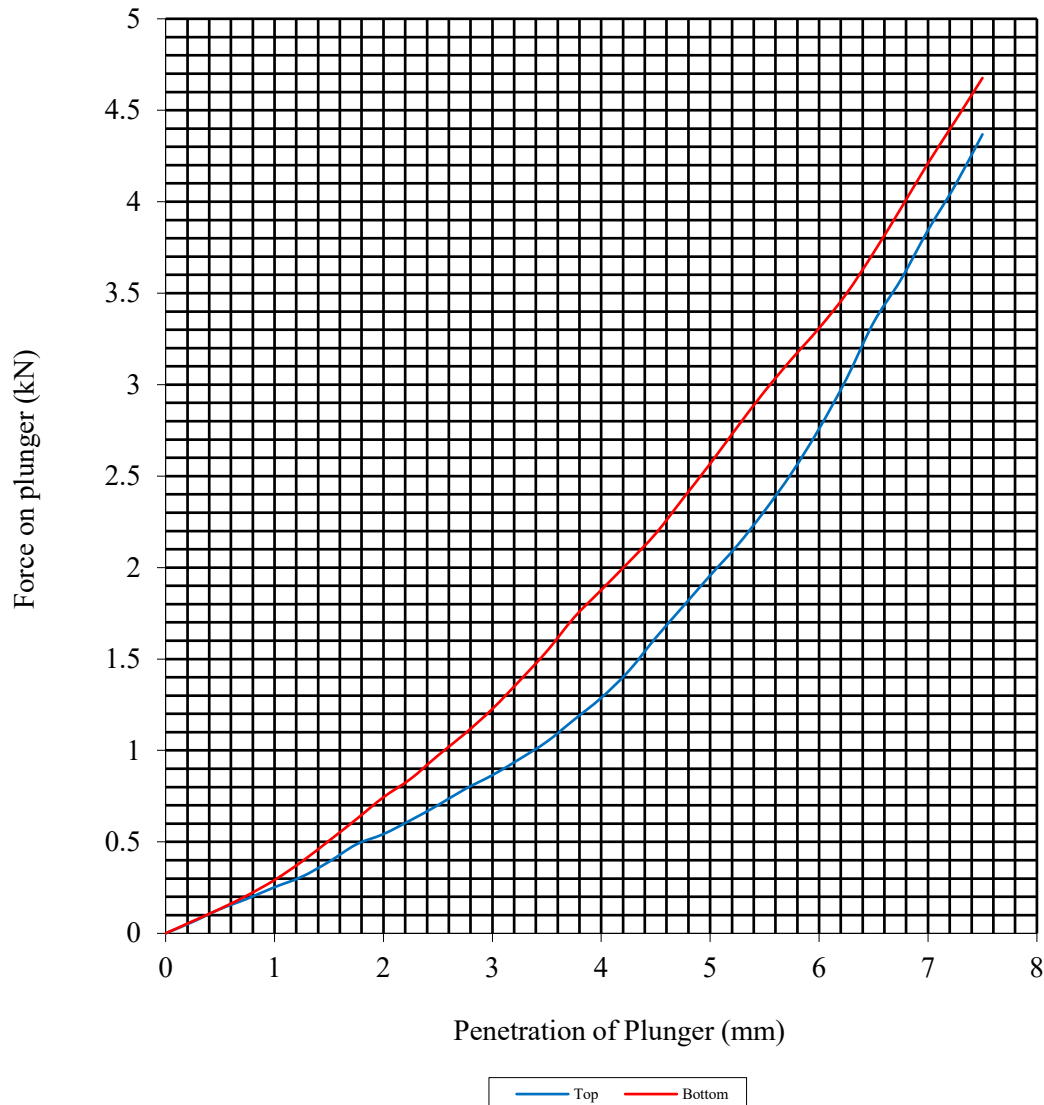
Hole Number: BH02

Top Depth (m): 0.40

Sample Number:

Base Depth (m): 1.20

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	17	Surcharge Kg:	4.00	Sample Top	20	Sample Top	9.8
Bulk Density Mg/m3:	2.09	Soaking Time hrs	96	Sample Bottom	19	Sample Bottom	12.8
Dry Density Mg/m3:	1.78	Swelling mm:	2.18	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:		45					
Compaction Conditions		2.5kg					



PSL
Professional Soils Laboratory

Cheetham Hill

Contract No:
PSL22/6418
Client Ref:
10638G



Certificate of Analysis

Certificate Number 22-20811

Issued: 28-Oct-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-20811

Client Reference PSL22/6418

Order No (not supplied)

Contract Title Cheetham Hill

Description 6 Soil samples.

Date Received 17-Oct-22

Date Started 17-Oct-22

Date Completed 28-Oct-22

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 "K. Bridgwood".

Kirk Bridgwood
General Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 22-20811

Client Ref PSL22/6418

Contract Title Cheetham Hill

Lab No	2072407	2072408	2072409	2072410	2072411	2072412
Sample ID	BH01	BH01	BH01	BH02	BH02	BH02
Depth	3.00-3.45	10.00	14.50	2.00-2.45	11.50	15.60
Other ID						
Sample Type	S	D	D	D	D	D
Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	13	< 10	< 10	< 10	< 10
Inorganics									
pH	DETSC 2008#		pH	8.3	8.1	8.3	9.7	8.5	9.2
Chloride Aqueous Extract	DETSC 2055	1	mg/l	8.8	9.1	12	5.7	8.5	11
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	1.3	< 1.0	< 1.0	1.7	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	27	99	25	180	25	47
Sulphur as S, Total	DETSC 2320	0.01	%	0.02	0.10	0.04	0.09	0.02	0.03
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.03	0.07	0.04	0.26	0.03	0.03

Information in Support of the Analytical Results

Our Ref 22-20811
Client Ref PSL22/6418
Contract Cheetham Hill

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2072407	BH01 3.00-3.45 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2072408	BH01 10.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2072409	BH01 14.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2072410	BH02 2.00-2.45 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2072411	BH02 11.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2072412	BH02 15.60 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	

Key: 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.

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

APPENDIX 04

Chemical Analytical Results



Amended Report

Report No.:	22-31575-2		
Initial Date of Issue:	25-Aug-2022	Date of Re-Issue:	05-Sep-2022
Client	WML Consulting Ltd		
Client Address:	No. 8 Oak Green Stanley Green Business Park Earl Rd Cheadle SK8 6QL		
Contact(s):	Tom Booth		
Project	10638G Cheetham Hill		
Quotation No.:		Date Received:	18-Aug-2022
Order No.:	10638G	Date Instructed:	18-Aug-2022
No. of Samples:	18		
Turnaround (Wkdays):	12	Results Due:	05-Sep-2022
Date Approved:	05-Sep-2022		
Approved By:			

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: 10638G Cheetham Hill

Client: WML Consulting Ltd	Chemtest Job No.:					22-31575	22-31575	22-31575	22-31575
Quotation No.:	Chemtest Sample ID.:					1490181	1490184	1490186	1490193
Order No.: 10638G	Client Sample Ref.:					E	J	J	E
	Sample Location:					WS01	WS02	WS02	WS04
	Sample Type:					SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					1.20	0.35	1.30	1.50
	Date Sampled:					16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
Determinand	Accred.	SOP	Type	Units	LOD				
pH	U	1010			N/A	11.1	9.7	9.2	8.8
Sulphur	N	1220		mg/l	1.0	19	3.7	2.6	5.7
Sulphate	U	1220		mg/l	1.0	58	11	7.9	17
Hardness	U	1415		mg/l	15	65	38	36	59
Arsenic (Dissolved)	U	1455		µg/l	0.20	0.48	8.8	0.38	2.3
Boron (Dissolved)	U	1455		µg/l	10.0	50	30	34	26
Cadmium (Dissolved)	U	1455		µg/l	0.11	< 0.11	< 0.11	< 0.11	< 0.11
Copper (Dissolved)	U	1455		µg/l	0.50	4.5	3.1	< 0.50	2.6
Mercury (Dissolved)	U	1455		µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455		µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Lead (Dissolved)	U	1455		µg/l	0.50	< 0.50	7.1	< 0.50	84
Selenium (Dissolved)	U	1455		µg/l	0.50	2.1	1.1	0.61	0.77
Vanadium (Dissolved)	U	1455		µg/l	0.50	20	13	< 0.50	0.62
Zinc (Dissolved)	U	1455		µg/l	2.5	< 2.5	5.9	2.6	4.0
Chromium (Hexavalent)	U	1490		µg/l	20	< 20	< 20	< 20	< 20
Naphthalene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	1800		µg/l	0.10	1.3	< 0.10	< 0.10	< 0.10
Pyrene	U	1800		µg/l	0.10	1.6	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1800		µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1800		µg/l	2.0	2.9	< 2.0	< 2.0	< 2.0
Total Phenols	U	1920		mg/l	0.030	< 0.030	< 0.030	< 0.030	< 0.030

Results - Soil

Project: 10638G Cheetham Hill

Client: WML Consulting Ltd	Chemtest Job No.:				22-31575	22-31575	22-31575	22-31575	22-31575	22-31575	22-31575	22-31575
Quotation No.:	Chemtest Sample ID.:				1490178	1490179	1490180	1490182	1490183	1490185	1490187	1490188
Order No.: 10638G	Client Sample Ref.:				J	E	E	J	E	E	E	E
	Sample Location:				WS01	WS01	WS01	WS01	WS02	WS02	WS03	WS03
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.05	0.30	0.40	2.90	0.30	0.60	0.30	0.60
	Date Sampled:				16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
	Asbestos Lab:					COVENTRY	COVENTRY		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
ACM Type	U	2192		N/A		-	-		Fibres/Clumps	Fibres/Clumps	-	-
Asbestos Identification	U	2192		N/A		No Asbestos Detected	No Asbestos Detected		Amosite Chrysotile	Amosite Chrysotile	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry	U	2192	%	0.001					0.17	0.031		
Total Asbestos	U	2192	%	0.001					0.17	0.031		
Moisture	N	2030	%	0.020	5.9	11	7.6	15	12	15	7.5	8.1
pH	U	2010		4.0		10.4	11.1		9.1	8.8	8.8	8.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40		1.1	0.74		< 0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010		0.47	1.0		0.015	< 0.010	< 0.010	< 0.010
Total Sulphur	U	2175	%	0.010		0.22	0.12		0.31	0.14	0.16	0.12
Cyanide (Total)	U	2300	mg/kg	0.50		< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50
Sulphate (Total)	U	2430	mg/kg	100		1400	3400		3900	1200	1100	1900
Arsenic	U	2455	mg/kg	0.5		1.7	9.3		4.1	1.5	2.5	5.0
Cadmium	U	2455	mg/kg	0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10	< 0.10
Copper	U	2455	mg/kg	0.50		9.8	56		14	8.9	12	27
Mercury	U	2455	mg/kg	0.05		< 0.05	0.07		0.07	0.07	0.11	0.25
Nickel	U	2455	mg/kg	0.50		5.0	15		7.1	6.6	7.4	8.0
Lead	U	2455	mg/kg	0.50		18	210		77	31	43	200
Selenium	U	2455	mg/kg	0.25		< 0.25	< 0.25		< 0.25	< 0.25	< 0.25	< 0.25
Vanadium	U	2455	mg/kg	0.5		7.4	19		9.7	9.1	8.9	11
Zinc	U	2455	mg/kg	0.50		38	130		37	47	87	77
Chromium (Hexavalent)	N	2490	mg/kg	0.50		< 0.50	0.51		< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		2.2	3.5		12	2.5	4.1	3.2
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0				< 1.0				
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0				< 1.0				
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0				< 1.0				
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0				< 1.0				
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0				< 1.0				
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0				< 1.0				
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0				< 1.0				
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0				< 1.0				
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0				< 5.0				
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0				< 1.0				
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0				< 1.0				
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0				< 1.0				
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0				< 1.0				
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0				< 1.0				
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0				9.7				

Results - Soil

Project: 10638G Cheetham Hill

Client: WML Consulting Ltd	Chemtest Job No.:				22-31575	22-31575	22-31575	22-31575	22-31575	22-31575	22-31575	22-31575
Quotation No.:	Chemtest Sample ID.:				1490178	1490179	1490180	1490182	1490183	1490185	1490187	1490188
Order No.: 10638G	Client Sample Ref.:				J	E	E	J	E	E	E	E
	Sample Location:				WS01	WS01	WS01	WS01	WS02	WS02	WS03	WS03
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.05	0.30	0.40	2.90	0.30	0.60	0.30	0.60
	Date Sampled:				16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
	Asbestos Lab:					COVENTRY	COVENTRY		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0				87				
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0				< 1.0				
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0				96				
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0				96				
Benzo[a]pyrene	U	2700	mg/kg	0.10	2.3							
Benzene	U	2760	µg/kg	1.0				< 1.0				
Toluene	U	2760	µg/kg	1.0				< 1.0				
Ethylbenzene	U	2760	µg/kg	1.0				< 1.0				
m & p-Xylene	U	2760	µg/kg	1.0				< 1.0				
o-Xylene	U	2760	µg/kg	1.0				< 1.0				
Naphthalene	U	2800	mg/kg	0.10		< 0.10	0.22		< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10		< 0.10	0.11		< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2800	mg/kg	0.10		< 0.10	0.22		< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2800	mg/kg	0.10		< 0.10	0.21		< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2800	mg/kg	0.10		1.4	2.1		0.63	< 0.10	0.56	2.1
Anthracene	U	2800	mg/kg	0.10		0.37	0.63		< 0.10	< 0.10	0.13	0.54
Fluoranthene	U	2800	mg/kg	0.10		3.4	6.0		0.78	0.26	1.0	3.7
Pyrene	U	2800	mg/kg	0.10		3.6	6.0		0.68	0.26	0.91	3.1
Benzo[a]anthracene	U	2800	mg/kg	0.10		2.0	3.0		0.44	< 0.10	0.54	1.8
Chrysene	U	2800	mg/kg	0.10		1.6	2.8		0.36	< 0.10	0.47	1.7
Benzo[b]fluoranthene	U	2800	mg/kg	0.10		2.9	3.9		0.43	< 0.10	0.66	2.4
Benzo[k]fluoranthene	U	2800	mg/kg	0.10		0.97	1.3		0.32	< 0.10	0.30	0.82
Benzo[a]pyrene	U	2800	mg/kg	0.10		3.2	4.2		0.59	< 0.10	0.82	2.6
Indeno(1,2,3-c,d)Pyrene	U	2800	mg/kg	0.10		< 0.10	2.5		< 0.10	< 0.10	< 0.10	1.5
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10		< 0.10	0.38		< 0.10	< 0.10	< 0.10	0.28
Benzo[g,h,i]perylene	U	2800	mg/kg	0.10		< 0.10	1.9		< 0.10	< 0.10	< 0.10	1.1
Total Of 16 PAH's	N	2800	mg/kg	2.0		19	36		4.2	< 2.0	5.4	22
Total Phenols	U	2920	mg/kg	0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 10638G Cheetham Hill

Client: WML Consulting Ltd	Chemtest Job No.:				22-31575	22-31575	22-31575	22-31575	22-31575	22-31575
Quotation No.:	Chemtest Sample ID.:				1490189	1490190	1490191	1490192	1490194	1490195
Order No.: 10638G	Client Sample Ref.:				E	J	E	E	J	J
	Sample Location:				WS03	WS03	WS04	WS04	WS04	WS04
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				2.20	2.30	0.20	0.50	1.85	2.10
	Date Sampled:				16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
	Asbestos Lab:						COVENTRY	COVENTRY		
Determinand	Accred.	SOP	Units	LOD						
ACM Type	U	2192		N/A			-	-		
Asbestos Identification	U	2192		N/A			No Asbestos Detected	No Asbestos Detected		
Asbestos by Gravimetry	U	2192	%	0.001						
Total Asbestos	U	2192	%	0.001						
Moisture	N	2030	%	0.020	16	26	9.3	14	24	26
pH	U	2010		4.0			8.4	8.4		
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40			< 0.40	< 0.40		
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010			< 0.010	< 0.010		
Total Sulphur	U	2175	%	0.010			0.099	0.12		
Cyanide (Total)	U	2300	mg/kg	0.50			< 0.50	< 0.50		
Sulphate (Total)	U	2430	mg/kg	100			1500	1600		
Arsenic	U	2455	mg/kg	0.5			6.4	2.9		
Cadmium	U	2455	mg/kg	0.10			< 0.10	< 0.10		
Copper	U	2455	mg/kg	0.50			24	7.5		
Mercury	U	2455	mg/kg	0.05			0.92	< 0.05		
Nickel	U	2455	mg/kg	0.50			7.0	4.7		
Lead	U	2455	mg/kg	0.50			670	20		
Selenium	U	2455	mg/kg	0.25			< 0.25	< 0.25		
Vanadium	U	2455	mg/kg	0.5			12	7.7		
Zinc	U	2455	mg/kg	0.50			72	35		
Chromium (Hexavalent)	N	2490	mg/kg	0.50			< 0.50	< 0.50		
Organic Matter	U	2625	%	0.40			4.4	4.4		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0		80	12	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0		700	510	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0		1600	500	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0	160	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0		2400	1200	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0		9.4	< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0		340	< 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0		1600	140	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0		980	77	

Results - Soil

Project: 10638G Cheetham Hill

Client: WML Consulting Ltd	Chemtest Job No.:				22-31575	22-31575	22-31575	22-31575	22-31575	22-31575
Quotation No.:	Chemtest Sample ID.:				1490189	1490190	1490191	1490192	1490194	1490195
Order No.: 10638G	Client Sample Ref.:				E	J	E	E	J	J
	Sample Location:				WS03	WS03	WS04	WS04	WS04	WS04
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				2.20	2.30	0.20	0.50	1.85	2.10
	Date Sampled:				16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
	Asbestos Lab:						COVENTRY	COVENTRY		
Determinand	Accred.	SOP	Units	LOD						
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0			< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0			< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0			2900	220
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10			5300	1400
Benzo[a]pyrene	U	2700	mg/kg	0.10						
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0			< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0			< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0			< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0			< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0			< 1.0	< 1.0
Naphthalene	U	2800	mg/kg	0.10			< 0.10	< 0.10		
Acenaphthylene	N	2800	mg/kg	0.10			< 0.10	< 0.10		
Acenaphthene	U	2800	mg/kg	0.10			< 0.10	< 0.10		
Fluorene	U	2800	mg/kg	0.10			< 0.10	< 0.10		
Phenanthrene	U	2800	mg/kg	0.10			< 0.10	0.55		
Anthracene	U	2800	mg/kg	0.10			< 0.10	0.13		
Fluoranthene	U	2800	mg/kg	0.10			0.43	0.91		
Pyrene	U	2800	mg/kg	0.10			0.50	0.82		
Benzo[a]anthracene	U	2800	mg/kg	0.10			< 0.10	0.32		
Chrysene	U	2800	mg/kg	0.10			< 0.10	0.38		
Benzo[b]fluoranthene	U	2800	mg/kg	0.10			< 0.10	0.48		
Benzo[k]fluoranthene	U	2800	mg/kg	0.10			< 0.10	0.16		
Benzo[a]pyrene	U	2800	mg/kg	0.10			< 0.10	0.60		
Indeno(1,2,3-c,d)Pyrene	U	2800	mg/kg	0.10			< 0.10	< 0.10		
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10			< 0.10	< 0.10		
Benzo[g,h,i]perylene	U	2800	mg/kg	0.10			< 0.10	< 0.10		
Total Of 16 PAH's	N	2800	mg/kg	2.0			< 2.0	4.4		
Total Phenols	U	2920	mg/kg	0.10			< 0.10	< 0.10		

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazine.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazine.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection

Test Methods

SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
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S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.:	22-37678-1		
Initial Date of Issue:	07-Oct-2022		
Client	WML Consulting Ltd		
Client Address:	No. 8 Oak Green Stanley Green Business Park Earl Rd Cheadle SK8 6QL		
Contact(s):	Tom Booth		
Project	10638G Cheetham Hill		
Quotation No.:		Date Received:	03-Oct-2022
Order No.:	10638G	Date Instructed:	03-Oct-2022
No. of Samples:	3		
Turnaround (Wkdays):	5	Results Due:	07-Oct-2022
Date Approved:	07-Oct-2022		
Approved By:			
Details:	Stuart Henderson, Technical Manager		

Results - Soil

Project: 10638G Cheetham Hill

Client: WML Consulting Ltd	Chemtest Job No.:				22-37678	22-37678	22-37678
Quotation No.:	Chemtest Sample ID.:				1517233	1517234	1517235
Order No.: 10638G	Client Sample Ref.:				J	E	E
	Sample Location:				BH2	BH2	BH2
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				3.00	4.00	4.80
	Bottom Depth (m):				3.45	4.45	
	Date Sampled:				20-Sep-2022	20-Sep-2022	20-Sep-2022
Determinand	Accred.	SOP	Units	LOD			
Moisture	N	2030	%	0.020	12	13	14
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	14	6.6	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	120	40	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	170	27	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	28	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	340	74	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	3.2	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	41	< 1.0	< 1.0
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0	< 1.0	5.5	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	6.2	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	44	12	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	380	86	< 10

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection

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FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 22/09192
Issue Number: 1

Date: 26 September, 2022

Client: WML Construction
No 8 Oak Green
Earl Road
Stanley Green Business Park
Cheadle Hulme
Cheshire
SK8 6QL

Project Manager: Thomas Sheen
Project Name: Cheetham Hill Road, Manchester
Project Ref: 10638G
Order No: 10638G
Date Samples Received: 20/09/22
Date Instructions Received: 21/09/22
Date Analysis Completed: 26/09/22

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 22/09192

Client Project Name: Cheetham Hill Road, Manchester

Client Project Ref: 10638G

Lab Sample ID	22/09192/1							Units	Limit of Detection	Method ref
Client Sample No	1									
Client Sample ID	WS02									
Depth to Top										
Depth To Bottom										
Date Sampled	14-Sep-22									
Sample Type	Water - EW									
Sample Matrix Code	N/A									
pH (w) _A [#]	7.68							pH	0.01	A-T-031w
Ammonia / Ammoniacal Nitrogen as NH3 (w) _A [#]	0.057							mg/l	0.061	A-T-033w
Sulphate (w) _A [#]	340							mg/l	1	A-T-026w
Cyanide (free) (w) _A [#]	<0.005							mg/l	0.005	A-T-042wFCN
Cyanide (total) (w) _A [#]	<0.005							mg/l	0.005	A-T-042wTCN
Phenols - Total by HPLC (w) _A	<0.01							mg/l	0.01	A-T-050w
Arsenic (dissolved) _A [#]	<1							µg/l	1	A-T-025w
Boron (dissolved) _A [#]	96							µg/l	10	A-T-025w
Cadmium (dissolved) _A [#]	<0.2							µg/l	0.2	A-T-025w
Copper (dissolved) _A	5							µg/l	4	A-T-025w
Chromium (dissolved) _A [#]	12							µg/l	1	A-T-025w
Chromium (hexavalent) (w) _A	<0.01							mg/l	0.01	A-T-040w
Iron (dissolved) _A [#]	<10							µg/l	10	A-T-025w
Lead (dissolved) _A [#]	<1							µg/l	1	A-T-025w
Mercury (dissolved) _A [#]	<0.1							µg/l	0.1	A-T-025w
Nickel (dissolved) _A [#]	4							µg/l	2	A-T-025w
Selenium (dissolved) _A [#]	11							µg/l	1	A-T-025w
Zinc (dissolved) _A [#]	3							µg/l	2	A-T-025w

Envirolab Job Number: 22/09192

Client Project Name: Cheetham Hill Road, Manchester

Client Project Ref: 10638G

Lab Sample ID	22/09192/1									
Client Sample No	1									
Client Sample ID	WS02									
Depth to Top										
Depth To Bottom										
Date Sampled	14-Sep-22									
Sample Type	Water - EW									
Sample Matrix Code	N/A									
TPH CWG (w) with Clean Up										
Ali >C5-C6 (w) _A [#]	<1							µg/l	1	A-T-022w
Ali >C6-C8 (w) _A [#]	<1							µg/l	1	A-T-022w
Ali >C8-C10 (w) _A [#]	<5							µg/l	5	A-T-055w
Ali >C10-C12 (w) _A [#]	<5							µg/l	5	A-T-055w
Ali >C12-C16 (w) _A [#]	<5							µg/l	5	A-T-055w
Ali >C16-C21 (w) _A [#]	<5							µg/l	5	A-T-055w
Ali >C21-C35 (w) _A [#]	365							µg/l	5	A-T-055w
Total Aliphatics (w) _A [#]	365							µg/l	5	Calc-As Recd
Aro >C5-C7 (w) _A [#]	<1							µg/l	1	A-T-022w
Aro >C7-C8 (w) _A [#]	<1							µg/l	1	A-T-022w
Aro >C8-C10 (w) _A	<5							µg/l	5	A-T-055w
Aro >C10-C12 (w) _A [#]	<5							µg/l	5	A-T-055w
Aro >C12-C16 (w) _A [#]	48							µg/l	5	A-T-055w
Aro >C16-C21 (w) _A [#]	24							µg/l	5	A-T-055w
Aro >C21-C35 (w) _A	<10							µg/l	10	A-T-055w
Total Aromatics (w) _A	72							µg/l	10	Calc-As Recd
TPH (Ali & Aro >C5-C35) (w) _A	437							µg/l	10	Calc-As Recd
BTEX - Benzene (w) _A [#]	<1							µg/l	1	A-T-022w
BTEX - Toluene (w) _A [#]	<1							µg/l	1	A-T-022w
BTEX - Ethyl Benzene (w) _A [#]	<1							µg/l	1	A-T-022w
BTEX - m & p Xylene (w) _A [#]	<1							µg/l	1	A-T-022w
BTEX - o Xylene (w) _A [#]	<1							µg/l	1	A-T-022w
MTBE (w) _A [#]	<1							µg/l	1	A-T-022w

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Subscript ""^" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.

EPH CWG results have humics mathematically subtracted through instrument calculation

TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these

humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: WML Construction , No 8 Oak Green, Earl Road, Stanley Green Business Park,
Cheadle Hulme, Cheshire, SK8 6QL

Project: Cheetham Hill Road, Manchester

Clients Project No: 10638G

Project No: 22/09192

Date Received: 21/09/2022 (am)

Cool Box Temperatures (°C): 11.4

Lab Sample ID	22/09192/1
Client Sample No	1
Client Sample ID/Depth	WS02
Date Sampled	14/09/22
Deviation Code	
A7 (no HNO3)	✓
A8 (no NaOH)	✓
A9 (no H2SO4)	✓

Key

A7 (no HNO3) No HNO3 preserved bottle provided (dissolved metals will be deviating)
A8 (no NaOH) No NaOH preserved bottle provided (cyanides, sulphide will be deviating)
A9 (no H2SO4) No H2SO4 preserved bottle provided (phenols, ammonia, DOC, COD will be deviating)

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	22/09192/1
Client Sample No	1
Client Sample ID/Depth	WS02
Date Sampled	14/09/22
A-T-022w	26/09/2022
A-T-025w	24/09/2022
A-T-026w	22/09/2022
A-T-031w	23/09/2022
A-T-033w	22/09/2022
A-T-040w	22/09/2022
A-T-042wFCN	23/09/2022
A-T-042wTCN	23/09/2022
A-T-050w	23/09/2022
A-T-055w	26/09/2022
Calc-As Recd	26/09/2022

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

APPENDIX 05

Gas Monitoring Results

Gas & Groundwater Monitoring Record Sheet



Project Name:- Cheetham Hill
Project No:- 10638G
Client:- Urban Village Ltd

Date:- 07/09/2022
Start Time:- 13:30
End Time:- 15:00
Ground Conditions:- Dry
Weather Conditions:- Dry, sunny, still

Atmospheric Pressure
Start:- 997
End:- 996
Trend:- Falling

Instrument:- Gas Data GFM436

Operator:- T Sheen

Hole ID	Peak Flow l/hr	Steady Flow l/hr	DP	CH4			CO2			Min O2 %	Peak H2S ppm	Peak CO ppm	Hexane %	Water Level mbgl	Base of Hole mbgl
				Peak %	Steady %	Qhg l/hr	Peak %	Steady %	Qhg l/hr						
WS01	<0.1	<0.1	0	0.0	0.0	0.0000	0.8	0.8	0.0008	17.6	0	0	0.018	Dry	1.77
WS02	<0.1	<0.1	0	0.0	0.0	0.0000	0.7	0.7	0.0007	19.0	0	0	0.018	2.05	3.95
WS04	<0.1	<0.1	0	0.0	0.0	0.0000	1.6	1.6	0.0016	19.5	0	0	0.020	1.59	1.68

Additional Comments

Gas & Groundwater Monitoring Record Sheet



Project Name:- Cheetham Hill
Project No:- 10638G
Client:- Urban Village Ltd

Date:- 21/09/2022
Start Time:- 13:30
End Time:- 15:00
Ground Conditions:- Dry
Weather Conditions:- Cool, light breeze, s

Atmospheric Pressure
Start:- 1016
End:- 1013
Trend:- Falling

Instrument:- Gas Data GFM436

Operator:- T Sheen

Hole ID	Peak Flow l/hr	Steady Flow l/hr	DP	CH4			CO2			Min O2 %	Peak H2S ppm	Peak CO ppm	Hexane %	Water Level mbgl	Base of Hole mbgl
				Peak %	Steady %	Qhg l/hr	Peak %	Steady %	Qhg l/hr						
WS01	<0.1	<0.1	0	0.0	0.0	0.0000	0.0	0.0	0.0000	16.4	0	0	0.022	Dry	1.76
WS02	<0.1	<0.1	0	0.0	0.0	0.0000	0.9	0.8	0.0008	16.4	0	0	0.020	3.77	3.95
WS04	<0.1	<0.1	0	0.0	0.0	0.0000	1.5	1.5	0.0015	18.9	0	0	0.020	1.60	1.68

Additional Comments

Gas & Groundwater Monitoring Record Sheet



Project Name:- Cheetham Hill
Project No:- 10638G
Client:- Urban Village Ltd

Date:- 05/10/2022
Start Time:- 12:00
End Time:- 14:00
Ground Conditions:- Wet
Weather Conditions:- Drizzling, cool

Atmospheric Pressure
Start:- 996
End:- 995
Trend:- Falling

Instrument:- Gas Data GFM436

Operator:- T Sheen

Hole ID	Peak Flow l/hr	Steady Flow l/hr	DP	CH4			CO2			Min O2 %	Peak H2S ppm	Peak CO ppm	Hexane %	Water Level mbgl	Base of Hole mbgl
				Peak %	Steady %	Qhg l/hr	Peak %	Steady %	Qhg l/hr						
WS01	<0.1	<0.1	0	0.0	0.0	0.0000	0.0	0.0	0.0000	14.4	0	0	0.021	Dry	1.76
WS02	<0.1	<0.1	0	0.0	0.0	0.0000	0.9	0.9	0.0009	14.2	0	0	0.020	3.47	3.95
WS04	<0.1	<0.1	0	0.0	0.0	0.0000	0.9	0.9	0.0009	19.9	0	0	0.020	1.57	1.68

Additional Comments

Gas & Groundwater Monitoring Record Sheet



Project Name:- Cheetham Hill
Project No:- 10638G
Client:- Urban Village Ltd

Date:- 19/10/2022
Start Time:- 14:00
End Time:- 15:00
Ground Conditions:- Dry
Weather Conditions:- Dry, cool, overcast

Atmospheric Pressure
Start:- 1014
End:- 1012
Trend:- Falling

Instrument:- Gas Data GFM436 (hire unit)

Operator:- T Sheen

Hole ID	Peak Flow l/hr	Steady Flow l/hr	DP	CH4			CO2			Min O2 %	Peak H2S ppm	Peak CO ppm	Hexane %	Water Level mbgl	Base of Hole mbgl
				Peak %	Steady %	Qhg l/hr	Peak %	Steady %	Qhg l/hr						
WS01	<0.1	<0.1	0	0.0	0.0	0.0000	0.0	0.0	0.0000	17.8	0	0	0.021	Dry	1.76
WS02	<0.1	<0.1	0	0.0	0.0	0.0000	0.8	0.7	0.0007	13.6	0	0	0.021	3.24	3.95
WS04	<0.1	<0.1	0	0.0	0.0	0.0000	0.7	0.7	0.0007	20.3	0	0	0.021	1.59	1.68

Additional Comments

Gas & Groundwater Monitoring Record Sheet



Project Name:- Cheetham Hill
Project No:- 10638G
Client:- Urban Village Ltd

Date:- 04/11/2022
Start Time:- 09:10
End Time:- 10:15
Ground Conditions:- Dry
Weather Conditions:- Cold, dry, sunny

Atmospheric Pressure
Start:- 1006
End:- 1004
Trend:- Falling

Instrument:- Gas Data GFM436

Operator:- T Sheen

Hole ID	Peak Flow l/hr	Steady Flow l/hr	DP	CH4			CO2			Min O2 %	Peak H2S ppm	Peak CO ppm	Hexane %	Water Level mbgl	Base of Hole mbgl
				Peak %	Steady %	Qhg l/hr	Peak %	Steady %	Qhg l/hr						
WS01	<0.1	<0.1	0	0.0	0.0	0.0000	0.0	0.0	0.0000	18.0	0	0	0.000	Dry	1.76
WS02	<0.1	<0.1	0	0.0	0.0	0.0000	0.7	0.7	0.0007	13.7	0	0	0.000	3.00	3.95
WS04	<0.1	<0.1	0	0.0	0.0	0.0000	0.8	0.8	0.0008	19.6	0	0	0.000	1.58	1.68

Additional Comments

Gas & Groundwater Monitoring Record Sheet



Project Name:- Cheetham Hill
Project No:- 10638G
Client:- Urban Village Ltd

Date:- 16/11/2022
Start Time:- 15:00
End Time:- 16:40
Ground Conditions:- Damp
Weather Conditions:- Cold, overcast

Atmospheric Pressure
Start:- 982
End:- 980
Trend:- Falling

Instrument:- Gas Data GFM436

Operator:- T Sheen

Hole ID	Peak Flow l/hr	Steady Flow l/hr	DP	CH4			CO2			Min O2 %	Peak H2S ppm	Peak CO ppm	Hexane %	Water Level mbgl	Base of Hole mbgl
				Peak %	Steady %	Qhg l/hr	Peak %	Steady %	Qhg l/hr						
WS01	<0.1	<0.1	0	0.0	0.0	0.0000	0.0	0.0	0.0000	0.0	0	0	0.000	Dry	1.76
WS02	<0.1	<0.1	0	0.0	0.0	0.0000	0.7	0.7	0.0007	0.0	0	0	0.000	2.84	3.95
WS04	<0.1	<0.1	0	0.0	0.0	0.0000	0.7	0.7	0.0007	0.0	0	0	0.000	1.58	1.68

Additional Comments

APPENDIX 06

Site Specific Acceptance Criteria

Screening Levels for Public Open Space (Residential) assuming a 1% SOM for Hydrocarbons.

Contaminant	Screening Levels for POS (Resi) (mg/kg)
Metals	
Arsenic	79
Boron	21,000
Cadmium	120
Chromium III	1,500
Chromium VI	23
Copper	12,000
Lead*	630
Mercury	16
Nickel	230
Selenium SGV	1,100
Vanadium	2,000
Zinc	81,000
Non Metals	
Phenol	440
Polyaromatic Hydrocarbons PAHs)	
Benz[a]anthracene	29
Benzo[a]pyrene	5.7
Benzo[b]fluoranthene	7.1
Benzo[ghi]perylene	640
Benzo[k]fluoranthene	190
Chrysene	57
Dibenz[ah]anthracene	0.57
Fluoranthene	3,100
Indeno[123-cd]pyrene	82
Naphthalene	4,900
Pyrene	7,400

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* Where not included in the S4UL's criteria for a limited number of contaminants, namely lead, have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.

Contaminant	Screening Levels for POS (Resi) End Use
Volatile Organic Compounds (VOCs)	
Benzene	72
Ethylbenzene	24,000
Toluene	56,000
Xylene	41,000
Total Petroleum Hydrocarbons (TPH)	
Aliphatic C5-6	570,000
Aliphatic C6-8	600,000
Aliphatic C8-10	13,000
Aliphatic C10-12	13,000
Aliphatic C12-16	13,000
Aliphatic C16-35	250,000
Aliphatic C35-44	250,000
Aromatic C5-7	56,000
Aromatic C7-8	56,000
Aromatic C8-10	5,000
Aromatic C10-12	5,000
Aromatic C12-16	5,100
Aromatic C16-21	3,800
Aromatic C21-35	3,800
Aromatic C35 - 44	3,800

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Screening Levels for Public Open Space (Residential) assuming a 1% SOM for Hydrocarbons.

Contaminant	Screening Levels for POS (Resi) (mg/kg)
Metals	
Arsenic	79
Boron	21,000
Cadmium	120
Chromium III	1,500
Chromium VI	23
Copper	12,000
Lead*	630
Mercury	16
Nickel	230
Selenium SGV	1,100
Vanadium	2,000
Zinc	81,000
Non Metals	
Phenol	440
Polyaromatic Hydrocarbons PAHs)	
Benz[a]anthracene	29
Benzo[a]pyrene	5.7
Benzo[b]fluoranthene	7.1
Benzo[ghi]perylene	640
Benzo[k]fluoranthene	190
Chrysene	57
Dibenz[ah]anthracene	0.57
Fluoranthene	3,100
Indeno[123-cd]pyrene	82
Naphthalene	4,900
Pyrene	7,400

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Volatile Organic Compounds (VOCs)	
Benzene	72
Ethylbenzene	24,000
Toluene	56,000
Xylene	41,000
Total Petroleum Hydrocarbons (TPH)	
Aliphatic C5-6	570,000
Aliphatic C6-8	600,000
Aliphatic C8-10	13,000
Aliphatic C10-12	13,000
Aliphatic C12-16	13,000
Aliphatic C16-35	250,000
Aliphatic C35-44	250,000
Aromatic C5-7	56,000
Aromatic C7-8	56,000
Aromatic C8-10	5,000
Aromatic C10-12	5,000
Aromatic C12-16	5,100
Aromatic C16-21	3,800
Aromatic C21-35	3,800
Aromatic C35 - 44	3,800

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* Where not included in the S4UL's criteria for a limited number of contaminants, namely lead, have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.

The GAC's for the assessment of potential groundwater contamination have been derived from very conservative guidelines protective of drinking water and environmental quality, namely:

- UK Environmental Quality Standards (EQS) for Freshwater, 2000;
- Petroleum Products in Drinking-water, Background document for development of WHO Guidelines for Drinking-water Quality, 2011.

Table 1: Inorganic Tier 1 Water Environment Screening Criteria

Contaminant	Units	Hardness Banding (CaCO ₃ mg/l)	EQS /WFD (Freshwater)	UK DWS
Arsenic	µg/l	-	50	10
Ammonia	mg/l	-	0.2	0.5
Boron	µg/l	-	2000	1000
Cadmium	µg/l	-	5	5
Chromium	µg/l	0-50	2	50
		50-100	10	
		100-150	10	
		150-200	20	
		200-250	20	
Copper	µg/l	0-10	0.5	2000
		10-50	0.5	
		50-200	3	
		200-250	8	
		>250	12	
Cyanide (Free)	µg/l	-	1	-
Cyanide		-	-	50
Iron	µg/l	-	1000	200
Lead	µg/l	0-50	4	10
		50-150	10	
		150-250	20	
		>250	20	
Mercury	µg/l	-	1	1
Nickel	µg/l	0-50	8	20
		50-100	20	
		100-150	20	
		150-250	40	
		>250	40	
Selenium	µg/l	-	-	10
Sulphate (SO ₄)	mg/l	-	400	250
Zinc	µg/l	0-50	8	5000
		50-150	15	
		150-250	50	
		>250	50	
pH	-	-	6-9	-

Table 2: Organic Tier 1 Water Environment Screening Criteria

Contaminant	Units	UK DWS	WHO
PAHs - The sum of • Benzo(b)fluoranthene, • Benzo(ghi)perylene, • Benzo(k)fluoranthene, • indeno(1,2,3-c,d)pyrene)	µg/l	0.1	-
Phenol (total)	µg/l	0.5	-
MTBE	µg/l	-	15
Aliphatic C5-C6	µg/l	-	15,000
Aliphatic C6-C8	µg/l	-	15,000
Aliphatic C8-C10	µg/l	-	300
Aliphatic C10-C12	µg/l	-	300
Aliphatic C12-C16	µg/l	-	300
Aliphatic C16-21	µg/l	-	(300) *
Aliphatic C21-35	µg/l	-	(300)*
Aromatic C6-C7	µg/l	1 (benzene)	10 (benzene)
Aromatic C7-C8	µg/l	-	700 (toluene)
Aromatic C8-C10	µg/l	-	300 (ethylbenzene)
Aromatic C10-12	µg/l	-	100
Aromatic C12-C16	µg/l	-	100
Aromatic C16-C21	µg/l	-	90
Aromatic C21-C35	µg/l	-	90

Notes

The WHO Guideline Values for petroleum products in drinking water have been applied in the absence of current TPH water quality standards. However, for the aromatic TPH bandings of C6-C7, C7-C8 and C8-C10, the more conservative UK specific WQS for benzene, toluene and ethylbenzene have been used.

In the absence of specific WHO Guideline Values for the aliphatic ranges C16-C21 and C21-C35, the guideline values for the aliphatic C8-C10 through to C12-C16 ranges of 300µg/l have been used. This is however considered conservative due to the increased stability and lower volatility of the longer chain aliphatics.

APPENDIX 07

ESI Phase 1 Geo-environmental Assessment

Phase 1 Geo- environmental Assessment: 33 - 41 Cheetham Hill, Manchester, M4 4FT

Site address: 33 – 41 Cheetham Hill
Manchester
M4 4FT

Report prepared for: Oaktree Investments (M/cr) Ltd
c/o Randle White
16 Kendal Drive
Gatley
Cheshire
SK8 4QL

Report reference: 61519R1

Report status: Final

Date issued: May 2013

Report author: Liam Carey
Land Quality Consultant



Report checker: James Mortimer
Project Consultant



Report reviewer: Jon Cooke
Land Quality Director



REPORT SUMMARY

ENVIRONMENTAL RISK SUMMARY (LAND QUALITY RISKS)

The purpose of this report is to provide clear and pragmatic advice regarding the nature and potential significance of geotechnical risks and land quality hazards which may be present at the study site.

As such, potential risks have been assessed by considering the following key items:

1. The likelihood that **sources of contamination** are present within the sub surface materials at the site (*this gives a measure of the potential for contamination to be occurring at the site*).
2. The presence and nature of any **potential receptors** (i.e., something that could be adversely affected by a contaminant, such as people, an ecological system, property or a water body) **and pathways** (i.e., a route or means by which a receptor can be exposed to or affected by a contaminant) relating to the site and surrounding area. (*this gives a measure of the environmental sensitivity of both the site and its local setting*).
3. Under **Eurocode 7** to satisfy design requirements, a preliminary assessment of the proposed type of structures is required to classify the general structures into one of the three **geotechnical categories** presented in Eurocode 7.

The assessment findings are summarised as follows:

1. Potential for contamination to be occurring at the site	High	
	Med	
	Low	
2. The environmental sensitivity of both the site and the local area	High	
	Med	
	Low	
3. Overall risk posed by the site	High	
	Med	
	Low	
4. Likelihood of significant geotechnical risks	High	
	Med	
	Low	

Key:

High		There is a high potential contamination risk
Med		There is medium potential contamination risk
Low		There is a low potential contamination risk

It is acknowledged that the risk assessment findings are based on documentary sources of information alone. A proportionate programme of intrusive site investigations would be required to fully verify these findings.

RECOMMENDATIONS (FOR NEXT STEPS)

A Phase 2 Geo-environmental Assessment should be undertaken to fully characterise the ground, ground gas and groundwater conditions which exist across the Site. The investigation should focus on providing a targeted contamination assessment based on the Sites former uses together with classification and engineering properties of the strata present.

1. INTRODUCTION

1.1 BACKGROUND

The proposed development site (from herein known as 'the Site') is situated at 33 - 41 Cheetham Hill Road in Manchester. The Site comprises a disused petrol filling station (PFS) currently operating as a hand car wash (see Figure 1). It is understood that the underground storage tanks associated with the filling station have been removed, although this has not been confirmed.

ESI Ltd. (ESI) was commissioned by Randle White Ltd on behalf of Oaktree Investments Ltd (the Client) in May 2013 to undertake a Phase 1 geo-environmental desk study for the Site, in order to support a planning application for the redevelopment of the Site into a mixed retail and leisure use.

The purpose of the Phase 1 desk study is to review the current and historical uses of the Site in order to assess likely issues associated with potential contamination liabilities and geotechnical risks. This assessment has been undertaken by reviewing various environmental data associated with both the Site itself and the surrounding land area; developing a 'conceptual understanding' of the likely sub-surface conditions beneath the Site; and performing a preliminary assessment of identified risks posed to people, buildings or the natural environment from the anticipated land quality at the Site.

1.2 PURPOSE OF THIS REPORT

The purpose of this report is to provide clear and pragmatic advice regarding the nature and potential significance of contaminated land hazards and geotechnical risks which may be present at the Site, and where these are identified make recommendations for further action which may be required.

1.3 REPORT CONTENTS

This report is divided into two sections, as described below:

Section	Content	Purpose
Section 2: LAND QUALITY ASSESSMENT	A summary of the site history and environmental setting, the findings of the preliminary risk assessment and associated recommendations	To present a clear and concise overview of the land quality issues potentially associated with the site, with a focus on the potential regulatory and financial implications of any land contamination which may be present
Section 3: PRELIMINARY GEOTECHNICAL ASSESSMENT	A summary of the potential geological risks which may need to be assessed prior to redevelopment of the site	To allow preliminary consideration of the potential types of foundation use and other factors which may present cost abnormalities within the development
Section 4: SUPPORTING INFORMATION	A collection of published data records and mapping, on which the land quality assessment is based	To provide information in support of the risk assessment; this section also represents a source of reference data for use in any subsequent site works/assessments

This report has been produced in accordance with industry best practice and relevant technical standards including Eurocode 7, BS 10175 (BSI, 2011) and Environment Agency (2004; 2010)).

1.4 REPORT LIMITATIONS

It is noted that the findings presented in this report are largely based on information supplied by third parties. Whilst we assume that all information is representative of past and present conditions we can offer no guarantee as to its validity.

This report excludes consideration of potential hazards arising from any activities at the site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities.

Figure 1 Aerial view of the Site



2. LAND QUALITY ASSESSMENT

2.1 SITE DETAILS			
Site name:	33 - 41 Cheetham Hill, Manchester, M4 4FT	Site area:	0.13 ha
Current use:	Hand car wash located on a former PFS.	Land cover:	Concrete.
Proposed use:	A mix of A1 commercial retail units and a D2 leisure area.	Additional information:	The fuel storage tanks have been removed (unconfirmed).

2.2 CONCEPTUAL UNDERSTANDING (POTENTIAL SOURCE OF CONTAMINATION)					
Site history	• 1850 – Site developed as residential dwellings. Set in an area of mixed residential and undeveloped land. • 1891 – No change on-Site. A tram line ran along Cheetham Hill Road c. 10 m east of the Site. • 1893 – No change on-Site, residential expansion had occurred in the surrounding area by this time. • 1908 – No change on-Site. A railway line was located c. 150 m east of the Site. • 1922 – No change on-Site. • 1938 – No change on-Site. • 1951 – No change on-Site. A number of works buildings were present c. 350 m west of the Site. • 1953 – No change on-Site. A large spring and axle works was located c. 50 m east of the Site, with an associated tank, also c. 50 m east of the Site. • 1959 – No change on-Site. A number of works buildings are present c. 50 m to the south of the site, of unknown use. • 1966 – No change on-Site. • 1972 – The Site was no longer residential by this time, appearing to have been developed as a PFS. • 1994 – No change on-Site.	POTENTIAL SOURCES OF CONTAMINANT	The Site has remained developed since 1850 (earliest available maps), initially comprising residential dwellings, before the PFS was developed around the 1970s. It is understood that the underground storage tanks have been removed from the ground (Sales Particulars, Ridley Thaw Property Consultants). Given the Site's history, there is potential for historical contamination within the Site boundary to have occurred relating to the following: – Miscellaneous fuel or chemical spills/leaks (i.e. fuels used for refilling and storage in UST's, oils, lubricants, greases, antifreeze residues etc.) associated with the Sites use as a PFS. – Miscellaneous spills of chemicals associated with the use of the Site as a hand car wash. – Given the age of the buildings on-Site, asbestos containing materials may be present within the building fabric (including cement sheeting roofing materials). Note it is assumed that any asbestos containing materials will be dealt with appropriately. The presence of numerous historical works buildings within the vicinity of the Site may have led to the migration of contamination onto the Site.	HIGH	POTENTIAL SIGNIFICANCE

2.2 CONCEPTUAL UNDERSTANDING (POTENTIAL SOURCE OF CONTAMINATION)					
Current land use (see photographs in Section 3.3)	The Site is currently used as a car wash facility, operated by Wash & Shine Ltd.	POTENTIAL SOURCES OF CONTAMINANT	Given the current use of the Site (hand car wash) there is potential for miscellaneous chemicals associated with the car wash facility to have led to localised on-Site contamination.	MED	POTENTIAL SIGNIFICANCE
National Incidents recording system List 2.	One Environment Agency pollution incident has occurred within 250 m of the Site, located c. 190 m south of the Site, relating to an oils and fuel spillage. The incident had minor impact to water and no impact to air or land.		Based on the distance and category of the pollution incident within 250 m of the Site, it is unlikely that the incident poses a significant risk to the prevailing land quality at the Site.	LOW	
Neighbouring land uses	The dominant land use surrounding the Site is industrial; as a result a number of potentially contaminative land uses are present within 250 m of the Site, the most significant of which are detailed below; - Reedbank Service Station, a petrol/fuel filling station and a car wash facility is located 40 m east of the Site. Currently operating under a Part B permit. - Marco Services Ltd, a distribution and haulage company is located c. 130 m west of the Site. There are a large number of licensed discharge consents within 500 m of the Site, mostly discharging to the River Irk, located c. 200 m south east of the Site, flowing north to south. The closes current licence is located c.200 m south east of the Site, discharging sewage into the River Irk (Permit number 01MAN0031).		Given the presence of potentially contaminative neighbouring land uses (in particular the nearby petrol filling station); it is considered possible that there is a risk to the prevailing land quality at the Site from these sources.	MED/ HIGH	
Landfill	There are no operational landfills within 500 m of the Site. There are no historical landfills within 500 m of the Site. There is one current EA licensed waste Site within 500 m of the Site; located c. 300 m east of the Site, a household, commercial and industrial waste transfer station (<25,000 tonnes per year). There is one operational waste treatment/ transfer/disposal site within 500 m of the Site; located c. 390 m east of the Site, a small (<25,000 tonnes per year) transfer station, dealing with putrescible waste.		Given the absence of any current or historical landfills within close proximity of the Site the potential risk to the prevailing land quality at the Site through ground gas migration is considered to be low.	LOW	

2.3 CONCEPTUAL UNDERSTANDING (ENVIRONMENTAL SENSITIVITY)					
Geology and groundwater	British Geological Survey (BGS) maps for the Site indicate the underlying geology comprises Devensian Till which is classed as Unproductive Strata overlying the Sherwood Sandstone Group which is classed as a Principal Aquifer. A nearby borehole (SJ89NW3451) located adjacent to the north eastern boundary of the Site recorded Made Ground to a depth of 0.9 m below ground level, overlying c. 8.5 m of stiff to very stiff clay deposits (Devensian Till) underlain by very dense sands. There are twelve licenced potable groundwater abstractions within 500 m of the Site, the closest of which is located c. 250 m south west of the Site, used for drinking, cooking, sanitary and washing. The Site lies within Zone 2 (Outer Catchment) of a Source Protection Zone and a Zone 1 (Inner Catchment) is located c. 50 m south west of the Site. The Site lies within a Groundwater Flooding Susceptibility Area (moderate risk).	POTENTIAL RECEPTORS	The underlying Principal Aquifer (Sherwood Sandstone Group) comprises geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers. The presence of superficial deposits comprised of stiff clay which is likely to be of low permeability overlying the Principal Aquifer, may offer some protection to the aquifer from any potential contamination occurring on-Site. Given that the Site lies within Zone 2 of a Source Protection Zone, and within 50 m of a Zone 1, the potential risk to potable water supplies is considered to be high.	HIGH	POTENTIAL SENSITIVITY
Radon	According to current UK radon mapping (HPA, 2007) the Site lies in an area where 0 - 1 % of homes are at or above the UK residential radon action level (200 Bq/m3).		The Site lies within a 'Low Probability Radon Area', and as such, no further action with regards to radon is required.	LOW	
Surface water	There is one major surface water features within 500 m of the Site; the River Irk, located c. 180 m south of the Site. The Irk is culverted c. 200 m south of the Site. There are no surface water abstractions within 2 km of the Site. The Site does not lie within a Flood Risk Zone, however a Zone 2 Floodplain (1 in 1000 yr event) lies c. 120 m of south of the Site, and a Zone 3 Floodplain (1 in 100 yr event) is present c. 180 m south of the Site.		Given the presence of a nearby major surface water features, it is possible that any potential on-Site contamination could migrate towards this feature.	LOW	
Environmental designations	There are no Environmentally Designated Sites within 500 m of the Site.		Given the absence of any nearby Environmentally Sensitive sites the risk to these receptors is considered to be negligible.	LOW	
Human receptors	Workers at the proposed and current on-Site businesses and their visitors.		The most sensitive human receptors will be workers at the business. Visitors are assumed to only visit the Sites infrequently and for short periods.	MED	

2.4 REGULATOR CONSULTATION

Attempts were made to contact both the contaminated land officer and the petroleum licensing officer in order to obtain further details about the Site. No response was received from either party within the timeframe of this report. Should a response be received at a later date any pertinent information will be forwarded to the client.

PRELIMINARY RISK ASSESSMENT

The Site had been used as a residential property from the 1850s up until the 1970s when the Site was redeveloped as a PFS. More recently the PFS has been decommissioned (with the removal of on-Site underground storage tanks (unconfirmed)) and the Site is currently utilised as a hand car wash facility. Given the Site's history, there is potential for historical contamination within the Site boundary to have occurred relating to miscellaneous fuel or chemical spills/leaks (i.e. fuels used for refilling and storage in UST's, oils, lubricants, greases, antifreeze residues etc.) associated with the Sites use as a filling station.

The area surrounding the Site, which is predominantly industrial, presents a potential source of contamination which has the potential to migrate onto the Site.

Given the age of the on-Site structures it is possible that asbestos containing materials are present within the building fabric or have been incorporated into the made ground during previous demolition phases. These materials will need to be dealt with appropriately.

A preliminary assessment of contaminated land risks posed to identified environmental receptors is as follows:

- The risk to **current and future users** of the Site being exposed to contaminated materials through **direct contact exposures** (including soil ingestion, dermal contact and dust ingestion and inhalation) or via the consumption of home grown produce is considered to be **low**, given the absence of any soft standing on-Site, and considering that the Site is not a residential land use so any exposure is likely to be limited.
- The risk to **current and future users** of the Site being exposed to **vapour phase** contaminants through the inhalation of outdoor and indoor air is, based on the known land use history characterised as **medium/high** given the former presence of underground fuel storage tanks on-Site, which may have leaked, leading to the potential emission of vapour phase contaminants. It is possible that accumulation of these vapours could occur within on-Site buildings/structures, presenting a fire/explosion hazard.
- The risk to **on Site buildings and their occupants** from **ground gas** ingress (including methane and carbon dioxide) generated within the sub surface on Site is considered to be **medium** given that the generation of methane through the degradation of free product is possible given the likely presence of Made Ground on-Site resulting from the installation of the underground storage tanks (*Note. It is acknowledged that this assessment has been made in the absence of any quantitative data*).
- Transport of dissolved or free phase contaminants to the **Principal Aquifer (Sherwood Sandstone Group)** from the Site is **med/high** given the potential for contamination to be present on-Site which has the potential to enter the aquifer. It is acknowledged that the presence of a thickness of low permeability deposits (Devensian Till) between the aquifer and the potential contaminant source may offer some protection.
- The risk to **surface water features** in particular the **River Irk** is considered to be **low** given the relative distance to the river.
- The risk to **ecological receptors** is considered to be **low** given the absence of any environmentally sensitive sites within the vicinity of the Site.
- It is noted that the Site lies within an area identified as being susceptible to **groundwater flood risk (moderate risk)**.

MED/
HIGH

OVERALL RISK RATING

3. PRELIMINARY GEOTECHNICAL ASSESSMENT

This preliminary geotechnical assessment has been based on the proposed redevelopment of the Site understood to comprise a mixture of A1 commercial retail units and a D2 leisure use. However, no loads or other associated data was available for review.

Under Eurocode 7 to satisfy design requirements, a preliminary assessment of the proposed type of structures has been undertaken to classify the general structures into one of the three geotechnical categories presented in Eurocode 7 Geotechnical Design – Part 1 General rules. Taking into consideration the characteristics of the current proposed scheme and the limited preliminary available geotechnical information, together with experience of construction, this project is currently considered as falling into **Geotechnical Category 2**. An update to this Category classification should be provided as part of the intrusive works Ground Investigation Report (GIR) and geotechnical assessment addendum to the GIR.

Published BGS Borehole Logs	SJ89NW3451 – SJ89NW3452	Made Ground to c. 1 m followed by stiff to very stiff clay to c. 10 m underlain by very dense sands to at least 10.5 m.
Potential Ground Hazards (BGS)	Collapsible Ground Stability Hazards	Very Low
	Potential for Compressible Ground Stability Hazards	Negligible
	Ground Dissolution Stability Hazards	Negligible
	Landslide Ground Stability Hazards	Very Low
	Potential for Running Sand Ground Stability Hazards	Very Low
	Shrinking or Swelling Clay Ground Stability Hazards	Very Low
	Coal Mining Areas	Unlikely
Foundations and Floor Slabs	Where encountered, due to the typical inherent variability, any Made Ground is not likely to be suitable as a founding stratum, in addition the former presence of underground storage tanks on-Site, which are understood to have been removed and backfilled may have led to localised deeper areas of Made Ground. For relatively lightly loaded structures, and depending on the proposed loads and tolerance to settlement of the structures, the Devensian Till may be a suitable founding stratum. Should high or abnormal loads be proposed then deeper piled foundations fused into the sandstone may be required. Ground floor bearing slabs may be considered suitable for use at the Site for the commercial development dependant on the variability of the Made Ground and composition of the Devensian Till. The site is not within a Coal Mining Referral Area but the standing advice does apply which states that the proposed development lies within a coal mining area which may contain unrecorded mining related hazards. If any coal mining feature is encountered during development, this should be reported to The Coal Authority.	
Earthworks	The existing topography of the Site indicates that significant earthworks are not likely to be required. It is important that a suitable specification detailing, handling, placement and testing requirements is produced. This will need to be based on a detailed characterisation of the cut/fill materials post a suitable ground investigation.	
Other considerations	Based on available BGS borehole logs, shallow groundwater is not anticipated on-Site. However, it should be noted that the Sherwood Sandstone Aquifer can be prone to significant seasonal variations, and perched groundwater may be encountered within the Till.	

	Potentially aggressive ground conditions e.g. adverse pH and sulphate levels may be present on-Site, given that there is potential for the Till to be derived from mudstone or coal measures which are often pyritic in nature and therefore may contain high concentrations of sulphate. This however should be confirmed through specific testing as part of a detailed ground investigation across the site. Given the Site formerly comprised a filling station with associated underground storage tanks, the risk from underground obstructions and services is considered to be high. It is understood that the tanks have been removed (unconfirmed), however other remnant structures associated with the filling station may remain within the sub-surface of the Site.
--	---

RECOMMENDATIONS (FOR NEXT STEPS)

A Phase 2 Geo-environmental Assessment should be undertaken to fully characterise the ground, ground gas and groundwater conditions which exist across the Site. The investigation should focus on providing a targeted contamination assessment based on the Sites former uses together with classification and engineering properties of the strata present.

4. SUPPORTING INFORMATION

The following supporting information is contained in this section:

Section	Content
4.1	Referenced materials used in the Phase 1 reporting
4.2	Published environmental data records (Centremaps EnviroInsight report for 33 – 41 Cheetham Hill, Manchester, M4 4FT) Ref: CMAPS-CM- 230777-21956-210513), including: Aerial photographs and site map • Environmental permits, incidents and registers • Landfill and other waste sites • Current land use information • Geology • Hydrogeology and hydrology • Flooding • Designated environmentally sensitive sites • Other environmental factors (i.e. geological considerations)
4.3	Photographs

This report has been prepared by ESI Ltd. (ESI) in its professional capacity as soil and groundwater specialists, with reasonable skill, care and diligence within the agreed scope and terms of contract and taking account of the manpower and resources devoted to it by agreement with its client, and is provided by ESI solely for the internal use of its client.

The advice and opinions in this report should be read and relied on only in the context of the report as a whole, taking account of the terms of reference agreed with the client. The findings are based on the information made available to ESI at the date of the report (and will have been assumed to be correct) and on current UK standards, codes, technology and practices as at that time. They do not purport to include any manner of legal advice or opinion. New information or changes in conditions and regulatory requirements may occur in future, which will change the conclusions presented here.

This report is confidential to the client. The client may submit the report to regulatory bodies, where appropriate. Should the client wish to release this report to any other third party for that party's reliance, ESI may, by prior written agreement, agree to such release, provided that it is acknowledged that ESI accepts no responsibility of any nature to any third party to whom this report or any part thereof is made known. ESI accepts no responsibility for any loss or damage incurred as a result, and the third party does not acquire any rights whatsoever, contractual or otherwise, against ESI except as expressly agreed with ESI in writing.

4.1 REFERENCES

The following references were used to inform the conceptual site model and preliminary risk assessment:

British Standards Institute, 2011. Investigation of potentially contaminated sites – code of practice. ISO 10175:2011.

Centremaps, 2013. Centremaps EnviroInsight report for 33 – 41 Cheetham Hill, Manchester, M4 4FT. Ref: CMAPS-CM- 230777-21956-210513.

Environment Agency, 2004. Publication CLR 11. Model Procedures for the Management of Land Contamination.

Environment Agency, 2010. GPLC1 – Guiding principles for land contamination.

Environment Agency, 2012. What's in my backyard? (<http://www.environment-agency.gov.uk/homeandleisure/37793.aspx>). Last accessed 22/05/2013.

Health Protection Agency, 2000. Spring 2000 Newsletter featuring; Radon: Guidance on Protective Measures for New Dwellings (BR 211).

Health Protection Agency, 2007. Indicative Atlas of Radon in England and Wales.

BGS, 2013. Onshore borehole records. (<http://www.bgs.ac.uk/data/boreholescans/home.html>). Last accessed 22/05/13.

4.2 PUBLISHED DATA RECORDS

Publicly available environmental information relating to the site and its surrounding area has been provided by Groundsure.

CENTREMAPS
Brockamin House, ,
Worcester, WR6 5JU

GroundSure Reference:	CMAPS-CM-230777-21956- 210513
Your Reference:	21956
Report Date:	21 May 2013
Report Delivery Method:	Email - pdf
Client Email:	andy@centremaps.com

GroundSure EnviroInsight

**Address: 33-41 CHEETHAM HILL ROAD, CHEETHAM,
MANCHESTER, M4 4FT**

Dear Sir/Madam,

Thank you for placing your order with CENTREMAPS. Please find enclosed the GroundSure EnviroInsight as requested

If you need any further assistance, please do not hesitate to contact our helpline on 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.
GroundSure EnviroInsight

GroundSure EnviroInsight

Address: 33-41 CHEETHAM HILL ROAD, CHEETHAM, MANCHESTER, M4 4FT

Date: 21 May 2013

GroundSure Reference: CMAPS-CM-230777-21956-210513

Your Reference: 21956

Client: CENTREMAPS



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Aerial Photograph of Study Site



Aerial photography supplied by Getmapping PLC.
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Site Name: 33-41 CHEETHAM HILL ROAD, CHEETHAM,
MANCHESTER, M4 4FT
Grid Reference: 384076,399401
Size of Site: 0.13 ha

Report Reference: CMAPS-CM-230777-21956-210513

If you would like any further assistance regarding this report then please contact
CENTREMAPS on (T) 01886 832972, (F) 01883 833485, email: groundsure@centremaps.co.uk

Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Report Section	Number of records found within (X) m of the study site boundary					
1. Environmental Permits, Incidents and Registers	on-site	0-50	51-250	251-500	501-1000	1000-1500
1.1 Industrial Sites Holding Environmental Permits and/or Authorisations						
Records of historic IPC Authorisations	0	0	0	0	-	-
Records of Part A(1) and IPPC Authorised Activities	0	0	0	0	-	-
Records of Water Industry Referrals (potentially harmful discharges to the public sewer)	0	0	0	0	-	-
Records of Red List Discharge Consents (potentially harmful discharges to controlled waters)	0	0	0	0	-	-
Records of List 1 Dangerous Substances Inventory sites	0	0	0	0	-	-
Records of List 2 Dangerous Substances Inventory sites	0	0	0	0	-	-
Records of Part A(2) and Part B Activities and Enforcements	0	1	1	6	-	-
Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0	-	-
Records of Licensed Discharge Consents	0	0	5	22	-	-
Records of Planning Hazardous Substance Consents and Enforcements	0	0	0	0		
1.2 Records of COMAH and NIHHS sites	0	0	0	0	-	-
1.3 Environment Agency Recorded Pollution Incidents						
National Incidents Recording System, List 2	0	0	1	-	-	-
National Incidents Recording System, List 1	0	0	0	-	-	-
1.4 Sites Determined as Contaminated Land under Part IIA EPA 1990	0	0	0	0	-	-
2. Landfill and Other Waste Sites	on-site	0-50	51-250	251-500	501-1000	1000-1500
2.1 Landfill Sites						
Environment Agency Registered Landfill Sites	0	0	0	0	0	-
Landfill Data – Operational Landfill Sites	0	0	0	0	0	-
Environment Agency Historic Landfill Sites	0	0	0	0	5	1
Landfill Data – Non-Operational Landfill Sites	0	0	0	0	0	-
BGS/DoE Landfill Site Survey	0	0	0	0	0	1
GroundSure Local Authority Landfill Sites Data	0	0	0	0	1	0
2.2 Landfill and Other Waste Sites Findings						
Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	1	-	-
Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	-	-
Environment Agency Licensed Waste Sites	0	0	1	1	16	0

3. Current Land Uses	on-site	0-50	51-250	251-500	501-1000	1000-1500
3.1 Current Industrial Sites Data	1	5	49	-	-	-
3.2 Records of Petrol and Fuel Sites	0	2	0	1	-	-
3.3 Underground High Pressure Oil and Gas Pipelines	0	0	0	0	-	-

4. Geology	Description
4.1 Are there any records of Artificial Ground and Made Ground present beneath the study site? *	No
4.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site? *	Yes
4.3 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
Source: Scale: 1:50,000 BGS Sheet 085	

* This includes an automatically generated 50m buffer zone around the site.

5. Hydrogeology and Hydrology	on-site	0-50	51-250	251-500	501-1000	1001-2000
5.1 Are there any records of Productive Strata in the Superficial Geology within 500m of the study site?				Yes		
5.2 Are there any records of Productive Strata in the Bedrock Geology within 500m of the study site?				Yes		
5.3 Groundwater Abstraction Licences (within 2000m of the study site).	0	0	6	22	3	7
5.4 Surface Water Abstraction Licences (within 2000m of the study site).	0	0	0	0	0	0
5.5 Potable Water Abstraction Licences (within 2000m of the study site).	0	0	3	9	0	0
5.6 Are there any Source Protection Zones within 500m of the study site?					Yes	
5.7 River Quality						
Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	Yes	Yes	Yes
5.8 Detailed River Network entries within 500m of the site	0	0	2	0	-	-
5.9 Surface water features within 250m of the study site	No	No	Yes	-	-	-

6. Flooding	
6.1 Are there any Environment Agency indicative Zone 2 floodplains within 250m of the study site?	Yes
6.2 Are there any Environment Agency indicative Zone 3 floodplains within 250m of the study site?	Yes
6.3 Are there any Flood Defences within 250m of the study site?	No
6.4 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
6.5 Are there any areas used for Flood Storage within 250m of the study site?	No
6.6 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Moderate
6.7 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Low

7. Designated Environmentally Sensitive Sites	on-site	0-50	51-250	251-500	501-1000	1001-2000
7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
7.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0

Report Reference: CMAPS-CM-230777-21956-210513

If you would like any further assistance regarding this report then please contact CENTREMAPS on (T) 01886 832972, (F) 01883 833485, email: groundsure@centremaps.co.uk

7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
7.3 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
7.4 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
7.5 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
7.6 Records of Ramsar sites	0	0	0	0	0	0
7.7 Records of World Heritage Sites	0	0	0	0	0	0
7.8 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
7.9 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
7.10 Records of National Parks	0	0	0	0	0	0
7.11 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
7.12 Records of Nitrate Vulnerable Zones	1	0	0	0	1	0
7.13 Records of Ancient Woodlands	0	0	0	0	0	0

8. Natural Hazards

8.1 What is the maximum risk of natural ground subsidence? Very Low

9. Mining

9.1 Are there any coal mining areas within 75m of the study site? Yes

9.2 What is the risk of subsidence relating to shallow mining within 150m of the study site? Negligible

9.3 Are there any brine affected areas within 75m of the study site? No

Using this Report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between GroundSure and the Client. The document contains the following sections:

1. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

2. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

3. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure underground oil and gas pipelines.

4. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

5. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

6. Flooding

Provides information on surface water flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

7. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

8. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence.

9. Mining

Provides information on areas of coal and shallow mining.

10. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, GroundSure provide a free Technical Helpline (08444 159000) for further information and guidance.

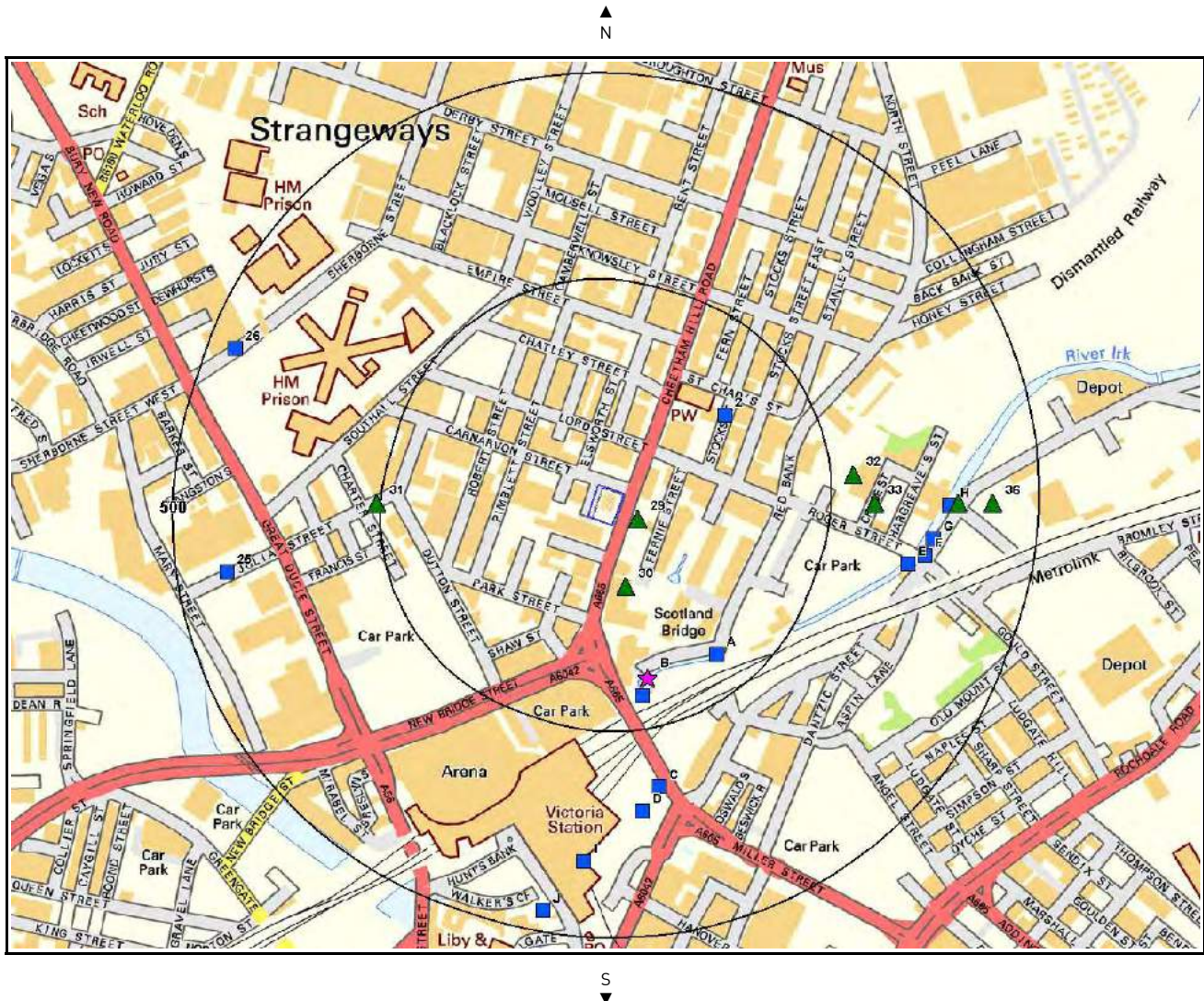
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Environmental Permits, Incidents and Registers Map



Authorisations, Incidents and Registers Legend



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	Site Outline		Recorded Pollution Incident		RAS 3 & 4 Authorisations
	Dangerous Substances (List 1)		Dangerous Substances (List 2)		Part A(1) Authorised Processes and Historic IPC Authorisations
	Dangerous Substances (List 2)				Part A(2) and Part B Authorised Processes
	Water Industry Referrals				COMAH / NIHHS Sites
	Red List Discharge Consents				Sites Determined as Contaminated Land
	Licensed Discharge Consents				Hazardous Substance Consents and Enforcements
	Search Buffers (m)				
	250				
	500				

1.Environmental Permits, Incidents and Registers

1.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

Records of historic IPC Authorisations within 500m of the study site: **0**

Database searched and no data found.

Records of Part A(1) and IPPC Authorised Activities within 500m of the study site: **0**

Database searched and no data found.

Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site: **0**

Database searched and no data found.

Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site: **0**

Database searched and no data found.

Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site: **0**

Database searched and no data found.

Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site: **0**

Database searched and no data found.

Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site: **8**

The following Part A(2) and Part B Activities are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Details	
29	27.0	E	384115, 399382	Address: Redbank Service Station, 58 Cheetham Hill Road, M4 4ex Process: Petrol Filling Station Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
30	79.0	S	384100, 399300	Address: Cheetham Hill Serv Stn Cheetham Hill Rd, M4 4ft Process: Petrol Vapour Recovery Process Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

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31	255.0	W	383800, 399400	Address: Park Gge Manchester Ltd Cheviot St, M3 1lw Process: Vehicle Re-spray Process Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
32	277.0	E	384374, 399435	Address: Avis Rent A Car Ltd., Avis Bodyshop, Chase Street, Redbank, Cheetham, Hill, M4 4fl Process: Respraying Of Road Vehicles. Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
33	302.0	E	384400, 399400	Address: New Mix Concrete Roger St, M4 4en Process: Cement/lime/mortar Process Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
34H	402.0	E	384500, 399400	Address: Place Mix Ltd Hargreave St, M4 4ej Process: Cement/lime/mortar Process Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
35H	402.0	E	384500, 399400	Address: Tan Yard Metal Ltd Hargreaves St, M4 4ej Process: Non-ferrous Alloys Process Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
36	444.0	E	384542, 399401	Address: Concret Barrowing Company Ltd, Hargreaves Street, Cheetham, M4 4ej Process: Concrete Processes. Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

Records of Category 3 or 4 Radioactive Substance Licences within 500m of the study site:

0

Database searched and no data found.

Records of Licensed Discharge Consents within 500m of the study site:

27

The following Licensed Discharge Consents records are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance	Direction	NGR	Details	
2	155.0	NE	384220, 399510	Address: Cheetham Hill Rd, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0369 Permit Version: 1	Receiving Water: - Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 1/1/1995 Revocation Date: -
3A	201.0	SE	384210, 399220	Address: Aspin Lane, Ancoats, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0031 Permit Version: 1	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 1/1/1995 Revocation Date: 2/9/2010
4A	201.0	SE	384210, 399220	Address: Aspin Lane, Ancoats, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0031 Permit Version: 2	Receiving Water: River Irk Status: Varied Under Epr 2010 Issue date: 3/9/2010 Effective Date: 3/9/2010 Revocation Date: -
5B	210.0	S	384120, 399170	Address: Verdon St, Near Scotland Street, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0265 Permit Version: 1	Receiving Water: River Irk Status: Consent Revoked Or Revised - New Consent Issued (37(1)) Issue date: - Effective Date: 1/1/1995 Revocation Date: 1/1/1995

6B	210.0	S	384120, 399170	Address: Verdon St, Near Scotland Street, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 016982715 Permit Version: 1	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 30/9/1994 Revocation Date: -
7C	322.0	S	384140, 399060	Address: Miller/corporation St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0161 Permit Version: 2	Receiving Water: River Irk Status: Varied Under Epr 2010 Issue date: 3/9/2010 Effective Date: 3/9/2010 Revocation Date: -
8C	322.0	S	384140, 399060	Address: Miller/corporation St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0161 Permit Version: 1	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 1/1/1995 Revocation Date: 2/9/2010
9D	349.0	S	384120, 399030	Address: Corporation Street, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0159 Permit Version: 2	Receiving Water: River Irk Status: Varied Under Epr 2010 Issue date: 3/9/2010 Effective Date: 3/9/2010 Revocation Date: -
10D	349.0	S	384120, 399030	Address: Corporation Street, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0159 Permit Version: 1	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 1/1/1995 Revocation Date: 2/9/2010
11E	352.0	E	384440, 399330	Address: Roger St/hargreaves St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0059 Permit Version: 1	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 1/1/1995 Revocation Date: 13/4/2009
12E	352.0	E	384440, 399330	Address: Lord St & Red Bank, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0062 Permit Version: 1	Receiving Water: River Irk Status: Revoked - Unspecified Issue date: - Effective Date: 1/1/1995 Revocation Date: -
13E	352.0	E	384440, 399330	Address: Roger St/hargreaves St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0059 Permit Version: 2	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: 14/4/2009 Effective Date: 14/4/2009 Revocation Date: 2/9/2010
14E	352.0	E	384440, 399330	Address: Roger St/hargreaves St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0059 Permit Version: 3	Receiving Water: River Irk Status: Varied Under Epr 2010 Issue date: 3/9/2010 Effective Date: 3/9/2010 Revocation Date: -
15F	370.0	E	384460, 399340	Address: Gould St/jason St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0047 Permit Version: 1	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 1/1/1995 Revocation Date: 13/4/2009
16F	370.0	E	384460, 399340	Address: Gould St/jason St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0047 Permit Version: 2	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: 14/4/2009 Effective Date: 14/4/2009 Revocation Date: 2/9/2010
17F	370.0	E	384460, 399340	Address: Gould St/jason St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0047 Permit Version: 3	Receiving Water: River Irk Status: Varied Under Epr 2010 Issue date: 3/9/2010 Effective Date: 3/9/2010 Revocation Date: -

18G	376.0	E	384470, 399360	Address: Parlane St/dantzic St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0061 Permit Version: 1	Receiving Water: River Irk Status: Revoked - Unspecified Issue date: - Effective Date: 1/1/1995 Revocation Date: -
19G	376.0	E	384470, 399360	Address: Bromley St/dantzic St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0046 Permit Version: 2	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: 14/4/2009 Effective Date: 14/4/2009 Revocation Date: -
20G	376.0	E	384470, 399360	Address: Bromley St/dantzic St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0046 Permit Version: 1	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 1/1/1995 Revocation Date: 13/4/2009
21H	392.0	E	384490, 399400	Address: Bromley St Sso, Bromley St, Near Railway Arch, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 016982627 Permit Version: 1	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 30/9/1994 Revocation Date: -
22H	392.0	E	384490, 399400	Address: Bromley St Sso, Bromley St, Near Railway Arch, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0310 Permit Version: 1	Receiving Water: River Irk Status: Consent Revoked Or Revised - New Consent Issued (37(1)) Issue date: - Effective Date: 1/1/1995 Revocation Date: 1/1/1995
23I	408.0	S	384050, 398970	Address: Hanover Street, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0158 Permit Version: 1	Receiving Water: River Irk Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 1/1/1995 Revocation Date: 2/9/2010
24I	408.0	S	384050, 398970	Address: Hanover Street, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0158 Permit Version: 2	Receiving Water: River Irk Status: Varied Under Epr 2010 Issue date: 3/9/2010 Effective Date: 3/9/2010 Revocation Date: -
25	440.0	W	383620, 399320	Address: Julia St/mirghel St, Sso, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Final/treated Effluent - Water Company Permit Number: 01MAN0063 Permit Version: 1	Receiving Water: River Irwell Status: Revoked - Unspecified Issue date: - Effective Date: 15/9/1993 Revocation Date: 15/9/1993
26	467.0	W	383630, 399590	Address: Sherbourne St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0358 Permit Version: 1	Receiving Water: - Status: Post Nra Legislation Where Issue Date > 31-aug-89 (historic Only) Issue date: - Effective Date: 1/1/1995 Revocation Date: -
27J	474.0	S	384000, 398910	Address: Long Millgate -todd St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 01MAN0160 Permit Version: 1	Receiving Water: River Irk Status: Consent Revoked Or Revised - New Consent Issued (37(1)) Issue date: 1/1/1995 Effective Date: 1/1/1995 Revocation Date: 31/5/2005
28J	474.0	S	384000, 398910	Address: Long Millgate -todd St, Manchester, Greater Manchester Effluent Type: Sewage Discharges - Sewer Storm Overflow - Water Company Permit Number: 016993741 Permit Version: 1	Receiving Water: River Irk Status: New Consent (wra 91, S88 & Sched 10 As Amended By Env Act 1995) Issue date: 1/6/2005 Effective Date: 1/6/2005 Revocation Date: -

Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site: 0

Database searched and no data found.

Report Reference: CMAPS-CM-230777-21956-210513

1.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: **0**

Database searched and no data found.

1.3 Environment Agency Recorded Pollution Incidents

Records of National Incidents Recording System, List 2 within 250m of the study site: **1**

The following NIRS List 2 records are represented as points on the Authorisations, Incidents and Registers Map:

ID	Distance	Direction	NGR	Details	
1B	191.0	S	384126, 399191	Incident Date: 10/1/2002 Incident Identification: 51724 Pollutant: Oils and Fuel Pollutant Description: Mixed/Waste Oils	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

Records of National Incidents Recording System, List 1 within 250m of the study site: **0**

Database searched and no data found.

1.4 Sites Determined as Contaminated Land under Part IIA EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site? **0**

Database searched and no data found.

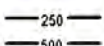
2. Landfill and Other Waste Sites Map



Landfill & Other Waste Sites Legend

Mapping sourced from
Ordnance Survey

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- | | | |
|---|---|--|
|  Site Outline |  E.A. Active Landfill |  Operational Waste Treatment Licence |
|  250
500 Search Buffers (m) |  E.A. Historic Landfill (Area Data) |  Closed Waste Treatment Licence |
| |  E.A. Historic Landfill (Point Data) |  REGIS Waste Licence |
| |  BGS / DoE Survey Landfill |  Operational Landfill |
| |  Local Authority Landfill (Area Data) |  Closed Landfill |
| |  Local Authority Landfill (Point Data) | |

2. Landfill and Other Waste Sites

2.1 Landfill Sites

Records from Environment Agency landfill data within 1000m of the study site: **0**

Database searched and no data found.

Records of operational landfill sites sourced from Landmark within 1000m of the study site: **0**

Database searched and no data found.

Records of Environment Agency historic landfill sites within 1500m of the study site: **6**

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance	Direction	NGR	Details	
3	518.0	N	384100, 400000	Site Address: Elizabeth Street, Cheetham, Greater Manchester Waste Licence: - Site Reference: F030 Waste Type: - Regis Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
4	580.0	W	383300, 399400	Site Address: Overbridge Road, Salford, Greater Manchester Waste Licence: - Site Reference: E090 Waste Type: - Regis Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
5	608.0	NE	384700, 400100	Site Address: Queens Road Tip - Land to South of Queens Road and North of Collingham Street, Cheetham, Manchester, Greater Manchester Waste Licence: Yes Site Reference: F005,RD/LIC/241/82 Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid sludge Regis Reference: -	Licence Issue: 01-Jan-1974 Licence Surrendered: Licence Hold Address: - Operator: H Evers Limited
Not shown	869.0	E	385000, 399800	Site Address: Sand Street, Collyhurst, Greater Manchester Waste Licence: - Site Reference: F027 Waste Type: - Regis Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
Not shown	986.0	NW	383400, 400400	Site Address: Land at Fairy Lane, Cheetham Hill, Manchester, Greater Manchester Waste Licence: - Site Reference: F015 Waste Type: Commercial, Household Regis Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
Not shown	1127.0	NE	385200, 400000	Site Address: Land at Fitzgeorge Street, Collyhurst, Manchester, Greater Manchester Waste Licence: - Site Reference: F031 Waste Type: - Regis Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -

Records of non-operational landfill sites sourced from Landmark within 1000m of the study site: **0**

Database searched and no data found.

Report Reference: CMAPS-CM-230777-21956-210513

Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

1

The following landfill records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance	Direction	NGR	Details
Not shown	1130.0	NE	384800.0, 400300.0	Address: H Evans Ltd, Queens Rd Tip, Cheetham, Manchester BGS Number: 848.0 Risk: No risk to aquifer Waste Type: N/A

Records of Local Authority landfill sites within 1500m of the study site:

1

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance	Direction	Site Address	Source	Data Type
Not shown	781.0	W	Pricewise, 1 Overbridge Road, Salford	Manchester city council	Point

2.2 Other Waste Sites

Records of operational waste treatment, transfer or disposal sites within 500m of the study site:

1

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance	Direction	NGR	Details
2	388.0	E	384485, 399445	Site Address: Hargreaves Street, MANCHESTER, Greater Manchester, M4 4EJ Landfill Licence: D31AEWAL EA Reference: EAWML50017 Waste Type: Putrescible Rating: Putrescible Transfer, Inert Treatment Known Restrictions: No known restriction on source of waste Record Date: 01-Mar-2000 Transfer Date: Modification Date: Status: Operational as far as is known Category: TRANSFER Regulator: EA - North West Region - South Area (East - Sale) Size: Small (<25,000 tonnes/year)

Records of non-operational waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

Records of Environment Agency licensed waste sites within 1500m of the study site:

18

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

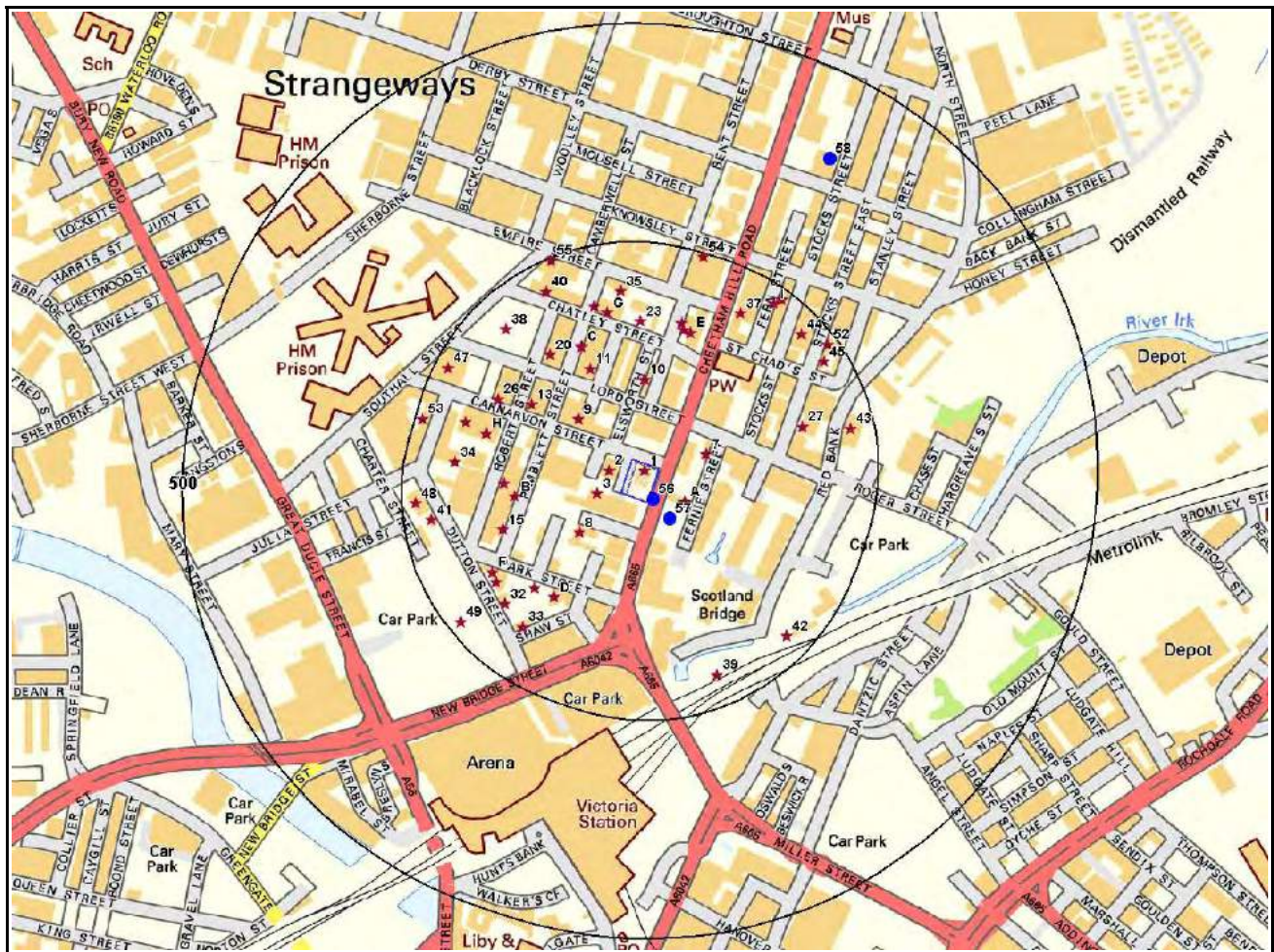
ID	Distance	Direction	NGR	Details
9	203.0	E	384300, 399400	Site Address: Red Bank, Cheetham Hill, Manchester, M8 Type: Mobile Plant Size: < 25000 tonnes Regis Licence Number: MEL002 EPR reference: EA/EPR/LP3292ZH/S002 Operator: Mel Ltd Waste Management licence No: 65243 Annual Tonnage: 75000.0 Issue Date: 17/04/2002 Effective Date: - Modified: - Surrendered Date: 06/02/2007 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Mobile Plant Correspondence Address: -, -

10	302.0	E	384400, 399400	Site Address: - Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: PLT001 EPR reference: EA/EPR/CP3998CM/A001 Operator: Placemix Ltd Waste Management licence No: 50017 Annual Tonnage: 24900.0	Issue Date: 31/03/2000 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Placemix Ltd Transfer Station Correspondence Address: -, -
11A	552.0	E	384650, 399400	Site Address: Land/premises At, Warford Street, Collyhurst, Manchester, M4 4DD Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: FAR008 EPR reference: EA/EPR/YP3594CH/V002 Operator: Farlam Waste Management Ltd Waste Management licence No: 50461 Annual Tonnage: 74999.0	Issue Date: 20/02/2007 Effective Date: - Modified: 12/11/2010 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Farlam Waste Management Ltd Correspondence Address: -, -
12A	552.0	E	384650, 399400	Site Address: Warford Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: FPL001 EPR reference: EA/EPR/DP3098CF/A001 Operator: Farlam Properties Ltd Waste Management licence No: 50118 Annual Tonnage: 24999.0	Issue Date: 27/08/2002 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Farlam Properties Ltd Correspondence Address: -, -
13A	552.0	E	384650, 399400	Site Address: Warford Street, Collyhurst, Manchester, M4 4DD Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: FAR008 EPR reference: - Operator: Farlam Waste Management Ltd Waste Management licence No: 50461 Annual Tonnage: 0.0	Issue Date: 20/02/2007 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Farlam Waste Management Ltd Correspondence Address: -, Warford Street, Off Dantzic Street, Collyhurst, Manchester, M4 4DD
14B	593.0	E	384690, 399449	Site Address: Dulwich Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: JR001 EPR reference: - Operator: J Ryan & Co Ltd Waste Management licence No: 50084 Annual Tonnage: 0.0	Issue Date: 15/03/2002 Effective Date: - Modified: 26/07/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: J Ryan & Co Ltd Correspondence Address: Brian Cook, Pearl Environmental Services, 13, Middleton Road, Reddish, Stockport, Cheshire, SK5 6SG
15B	593.0	E	384690, 399449	Site Address: Dulwich Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: JR001 EPR reference: - Operator: J Ryan & Co Ltd Waste Management licence No: 50084 Annual Tonnage: 0.0	Issue Date: 15/03/2002 Effective Date: - Modified: 26/07/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: J Ryan & Co Ltd Correspondence Address: -, Pearl Environmental Services, 13, Middleton Road, Reddish, Stockport, Cheshire, SK5 6SG
16B	593.0	E	384690, 399449	Site Address: Land/premises At, Dulwich Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: JRC001 EPR reference: EA/EPR/WP3898CJ/T003 Operator: Ryan John Waste Management licence No: 50084 Annual Tonnage: 75000.0	Issue Date: 15/03/2002 Effective Date: 04/07/2007 Modified: 26/07/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: J Ryan Correspondence Address: -, -

17B	593.0	E	384690, 399449	Site Address: Dulwich Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: JR001 EPR reference: - Operator: J Ryan & Co Ltd Waste Management licence No: 50084 Annual Tonnage: 0.0	Issue Date: 15/03/2002 Effective Date: - Modified: 26/07/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: J Ryan & Co Ltd Correspondence Address: -, Pearl Environmental Services, 13, Middleton Road, Reddish, Stockport, Cheshire, SK5 6SG
18	596.0	E	384690, 399487	Site Address: Dulwich Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: JR001 EPR reference: - Operator: J Ryan & Co Ltd Waste Management licence No: 50084 Annual Tonnage: 25000.0	Issue Date: 15/03/2002 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: J Ryan & Co Correspondence Address: -, Pearl Environmental Services, 13, Middleton Road, Reddish, Stockport, Cheshire, SK5 6SG
19C	612.0	NE	384610, 399750	Site Address: 23, Honey Street, Collyhurst, Manchester, M8 8RG Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: MBS001 EPR reference: - Operator: Manchester And Bury Skip Hire Ltd Waste Management licence No: 50136 Annual Tonnage: 0.0	Issue Date: 02/01/2003 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Honey Street Transfer Station Correspondence Address: -, 28, Alnwick Drive, Bury, Lancashire, BL9 8BZ
20C	612.0	NE	384610, 399750	Site Address: 2123, Honey Street, Collyhurst, Manchester, M8 8RG Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: UKS001 EPR reference: EA/EPR/YP3498CV/T002 Operator: U K Skip Hire Ltd Waste Management licence No: 50136 Annual Tonnage: 24999.0	Issue Date: 02/01/2003 Effective Date: 14/05/2005 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Honey Street Transfer Station Correspondence Address: -, -
21C	612.0	NE	384610, 399750	Site Address: 23, Honey Street, Collyhurst, Manchester, M8 8RG Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Regis Licence Number: UKS001 EPR reference: - Operator: Uk Skip Hire Ltd Waste Management licence No: 50136 Annual Tonnage: 0.0	Issue Date: 02/01/2003 Effective Date: 14/05/2005 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Honey Street Transfer Station Correspondence Address: -, 23, Honey Street, Collyhurst, Manchester, M8 8RG
Not shown	709.0	W	383354, 399493	Site Address: 23, Cottenham Lane, Salford, Manchester, M7 1TH Type: ELV Facility Size: < 25000 tonnes Regis Licence Number: MOT002 EPR reference: EA/EPR/SP3694CX/A001 Operator: Motor Body Services (salford) Ltd Waste Management licence No: 50240 Annual Tonnage: 2500.0	Issue Date: 13/07/2004 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: M B S & Partfirst Correspondence Address: -, -
Not shown	753.0	NW	383690, 400076	Site Address: - Type: Material Recycling Treatment Facility Size: < 25000 tonnes Regis Licence Number: KSD001 EPR reference: EA/EPR/KP3592CV/S002 Operator: Kains Steel Drums Waste Management licence No: 53472 Annual Tonnage: 75000.0	Issue Date: 17/11/1998 Effective Date: - Modified: - Surrendered Date: 22/08/2001 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Kains Steel Drums Correspondence Address: -, -

Not shown	871.0	SE	384771, 398842	Site Address: - Type: ELV Facility Size: < 25000 tonnes Regis Licence Number: KER003 EPR reference: EA/EPR/TP3494CL/S002 Operator: Brendan J Kershaw & Winston Brown Waste Management licence No: 50328 Annual Tonnage: 0.0	Issue Date: 10/08/2004 Effective Date: - Modified: - Surrendered Date: 06/07/2010 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: French Parts Uk Correspondence Address: -, -
Not shown	874.0	W	383200, 399566	Site Address: Cambridge Industrial Area, Cottenham Lane, Salford, Lancashire, M7 1GS Type: Special Waste Transfer Station Size: < 25000 tonnes Regis Licence Number: GSC001 EPR reference: EA/EPR/UP3692CM/S002 Operator: Granyte Surface Coatings Plc Waste Management licence No: 53446 Annual Tonnage: 50000.0	Issue Date: 21/09/1999 Effective Date: - Modified: - Surrendered Date: 03/07/2002 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Granyte Surface Coatings Plc Correspondence Address: -, -
Not shown	926.0	W	383201, 399751	Site Address: Unit 26, Caroline Street, Salford, Manchester, M7 1SS Type: Material Recycling Treatment Facility Size: < 25000 tonnes Regis Licence Number: EGR001 EPR reference: EA/EPR/YP3492CM/A001 Operator: Gregson Ernest Waste Management licence No: 53620 Annual Tonnage: 2083.333	Issue Date: 15/03/1996 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Star Drums Correspondence Address: -, -

3. Current Land Use Map



Current Land Use Legend



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-  Site Outline
-  Current Industrial Sites
-  Petrol & Fuel Sites
-  Underground High Pressure Oil & Fuel Pipelines
-  Search Buffers (m)

3. Current Land Uses

3.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

55

The following records are represented as points on the Current Land Uses map.

ID	Distance	Direction	Company	Address	Activity	Category
1	0.0	On Site	Wash & Shine	33-41, Cheetham Hill Road, Manchester, M4 4FT	Vehicle Cleaning Services	Personal, Consumer and Other Services
2	21.0	W	S P Nayar & Co Ltd	9, Carnarvon Street, Manchester, M3 1EZ	Lingerie and Hosiery	Consumer Products
3	28.0	W	Factory	M4	Unspecified Works Or Factories	Industrial Features
4A	40.0	E	Redbank Service Station	58, Cheetham Hill Road, Manchester, M4 4EX	Vehicle Cleaning Services	Personal, Consumer and Other Services
5A	40.0	E	Redbank Service Station	58, Cheetham Hill Road, Manchester, M4 4EX	Petrol and Fuel Stations	Road and Rail
6A	42.0	E	Red Bank Service	58, Cheetham Hill Road, Manchester, M4 4EX	Petrol and Fuel Stations	Road and Rail
7	55.0	E	Factory	M4	Unspecified Works Or Factories	Industrial Features
8	66.0	SW	Amber Jewellery Ltd	1, Park Place, Manchester, M4 4EZ	Jewellery, Gems, Clocks and Watches	Consumer Products
9	77.0	NW	Warehouse	M3	Container and Storage	Transport, Storage and Delivery
10	93.0	N	Visage Textiles Ltd	9-11, Chatley Street, Manchester, M3 1HU	Clothing, Components and Accessories	Consumer Products
11	115.0	NW	Pearl Scan Solutions	48, Lord Street, Manchester, M3 1HN	Printing Related Machinery	Industrial Products
12 B	122.0	W	Warehouse	M3	Container and Storage	Transport, Storage and Delivery
13	132.0	NW	Depot	M3	Container and Storage	Transport, Storage and Delivery
14 B	134.0	W	Marco Services Ltd	16, Robert Street, Manchester, M3 1EY	Distribution and Haulage	Transport, Storage and Delivery
15	141.0	W	Factory	M3	Unspecified Works Or Factories	Industrial Features
16 D	142.0	SW	Works	M3	Unspecified Works Or Factories	Industrial Features
17 C	142.0	NW	H Smith Blinds	52, Lord Street, Manchester, M3 1HN	Curtains and Blinds	Consumer Products
18 C	142.0	NW	Rubitex Ltd	52, Lord Street, Manchester, M3 1HN	Workwear	Industrial Products
19 D	147.0	SW	Electricity Sub Station	M3	Electrical Features	Infrastructure and Facilities
20	153.0	NW	Depot	M60	Container and Storage	Transport, Storage and Delivery
21E	159.0	N	Hurriprint & Design Studios	77, Cheetham Hill Road, Manchester, M4 4ER	Published Goods	Industrial Products
22E	159.0	N	Warehouse	M3	Container and Storage	Transport, Storage and Delivery
23	159.0	N	Works	M3	Unspecified Works Or Factories	Industrial Features
24E	166.0	N	Taylors Supplies Ltd	Augustus Street, Manchester, M3 1HZ	Ropes, Nets and Cordage	Industrial Products

25 H	167.0	W	Warehouse	M3	Container and Storage	Transport, Storage and Delivery
26	168.0	NW	Warehouse	M3	Container and Storage	Transport, Storage and Delivery
27	170.0	E	Warehouse	M4	Container and Storage	Transport, Storage and Delivery
28 G	171.0	N	Warehouse	M3	Container and Storage	Transport, Storage and Delivery
29F	173.0	SW	Arena Autos	29, Park Street, Manchester, M3 1EU	Vehicle Repair, Testing and Servicing	Repair and Servicing
30F	176.0	SW	Works	M3	Unspecified Works Or Factories	Industrial Features
31 G	181.0	N	Warehouse	M3	Container and Storage	Transport, Storage and Delivery
32	184.0	SW	Freelance Market News	8-10, Dutton Street, Manchester, M3 1LE	Published Goods	Industrial Products
33	190.0	SW	Sen Fiber Ltd	2a, Dutton Street, Manchester, M3 1LE	Clothing, Components and Accessories	Consumer Products
34	193.0	W	Manchester Cars & Vans Sales Ltd	6, Cheviot Street, Manchester, M3 1LW	New Vehicles	Motoring
35	194.0	N	David John Lighting Co	19-23, Empire Street, Manchester, M3 1JB	Lampshades and Lighting	Consumer Products
36 H	194.0	W	Depot	M3	Container and Storage	Transport, Storage and Delivery
37	200.0	NE	I A S Leather Goods Ltd	116-118, Cheetham Hill Road, Manchester, M4 4FG	Luggage, Bags, Umbrellas and Travel Accessories	Consumer Products
38	208.0	NW	Depot	M60	Container and Storage	Transport, Storage and Delivery
39	214.0	S	Victoria East Junction	M4	Railway Stations, Junctions and Halts	Public Transport, Stations and Infrastructure
40	216.0	NW	Warehouse	M3	Container and Storage	Transport, Storage and Delivery
41	219.0	W	Works	M3	Unspecified Works Or Factories	Industrial Features
42	221.0	SE	Gantry	M4	Travelling Cranes and Gantries	Industrial Features
43	223.0	E	Boardman Bros Ltd	50, Red Bank, Manchester, M4 4HF	Clothing, Components and Accessories	Consumer Products
44	223.0	NE	Biodata Ltd	10, Stocks Street, Manchester, M8 8QG	Electrical Components	Industrial Products
45	224.0	NE	Works	M8	Unspecified Works Or Factories	Industrial Features
46I	229.0	NE	Warehouse	M8	Container and Storage	Transport, Storage and Delivery
47	235.0	NW	Depot	M3	Container and Storage	Transport, Storage and Delivery
48	235.0	W	Factory	M3	Unspecified Works Or Factories	Industrial Features
49	235.0	SW	Tank	M3	Tanks (Generic)	Industrial Features
50I	237.0	NE	Sign & Print Solutions	9a, Stocks Street, Manchester, M8 8GW	Published Goods	Industrial Products
51I	237.0	NE	Subak Signs	9a, Stocks Street, Manchester, M8 8GW	Published Goods	Industrial Products
52	239.0	NE	Warehouse	M8	Container and Storage	Transport, Storage and Delivery

53	242.0	W	Factory	M3	Unspecified Works Or Factories	Industrial Features
54	246.0	N	Golden Arts Printing	103-105, Cheetham Hill Road, Manchester, M8 8PY	Published Goods	Industrial Products
55	247.0	N	Feline Ltd	40, Southall Street, Manchester, M3 1LG	Clothing, Components and Accessories	Consumer Products

3.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

3

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance	Direction	NGR	Company	Address	LPG	Status
56	6.0	E	384091, 399380	Obsolete	Cheetham Hill Service Station, 37-41, Cheetham Hill Road, Cheetham Hill Road, Manchester, Lancashire, M4 4FT	Not Applicable	Obsolete
57	32.0	SE	384110, 399358	Harvest Energy	Redbank Service Station, 58-76, Cheetham Hill Road, Cheetham Hill Road, Manchester, Lancashire, M4 4EX	No	Open
58	404.0	NE	384292, 399769	Obsolete	Cheetham Hill Filling Station, 111, Cheetham Hill Road, Cheetham Hill Road, Manchester, Lancashire, M8 8PY	Not Applicable	Obsolete

3.3 Underground High Pressure Oil and Gas Pipelines

Records of high pressure underground pipelines within 500m of the study site:

0

Database searched and no data found.

4. Geology

4.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

4.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

4.3 Bedrock and Solid Geology

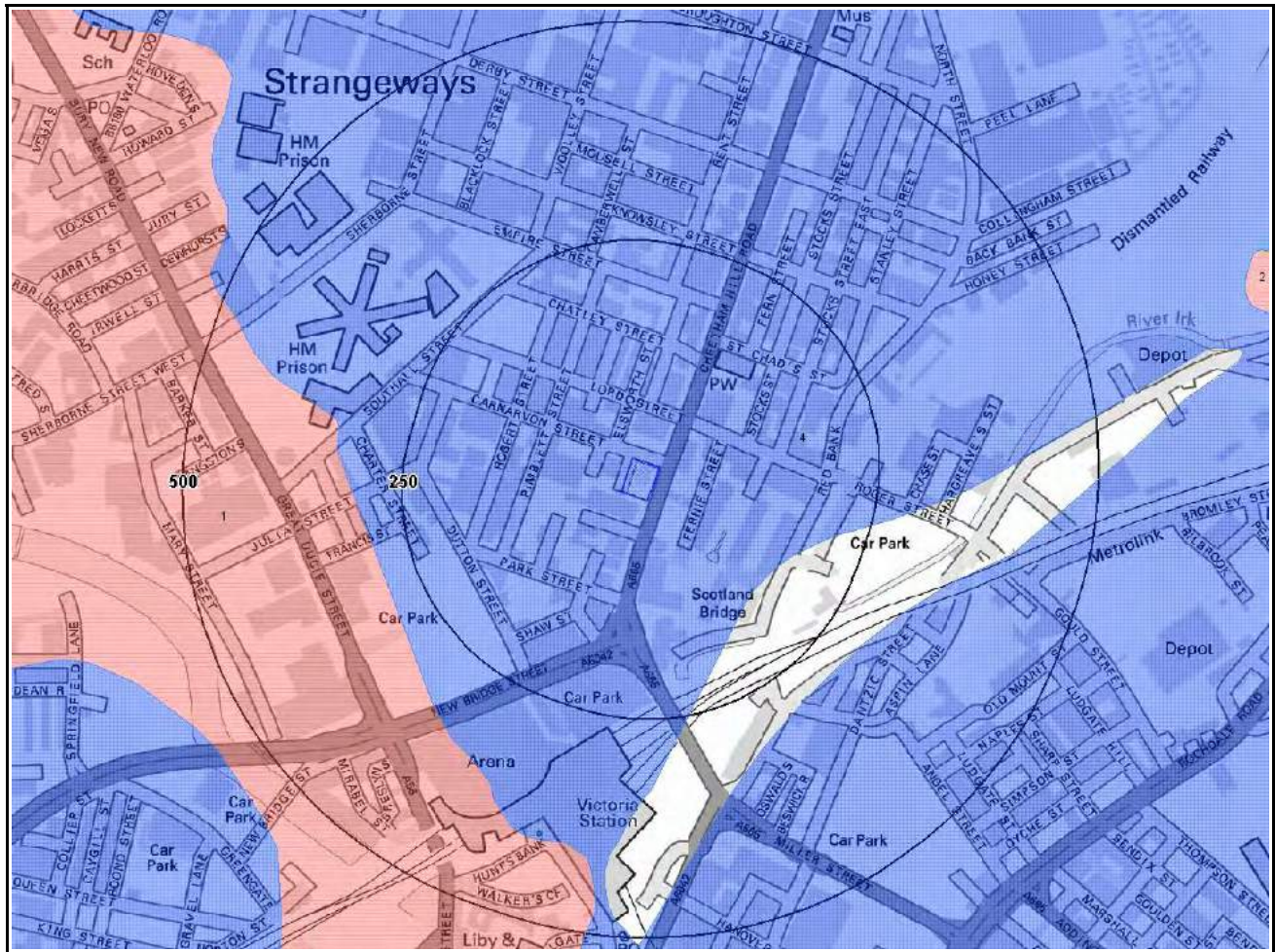
The database has been searched on site, including a 50m buffer.

LEX Code	Description	Rock Type
SSG-SDST	SHERWOOD SANDSTONE GROUP	SANDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

For more detailed geological and ground stability data please refer to the "GroundSure GeoInsight". Available from our website.

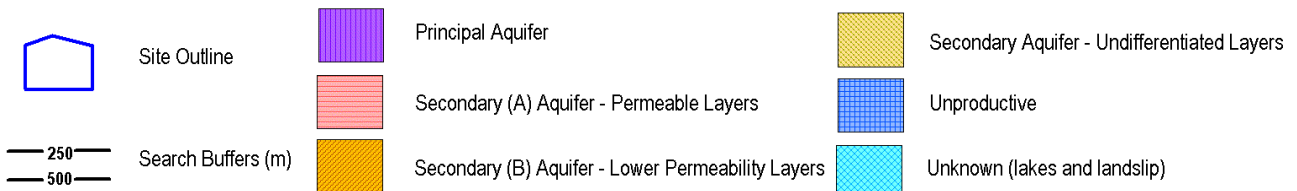
5a. Hydrogeology - Aquifer Within Superficial Geology



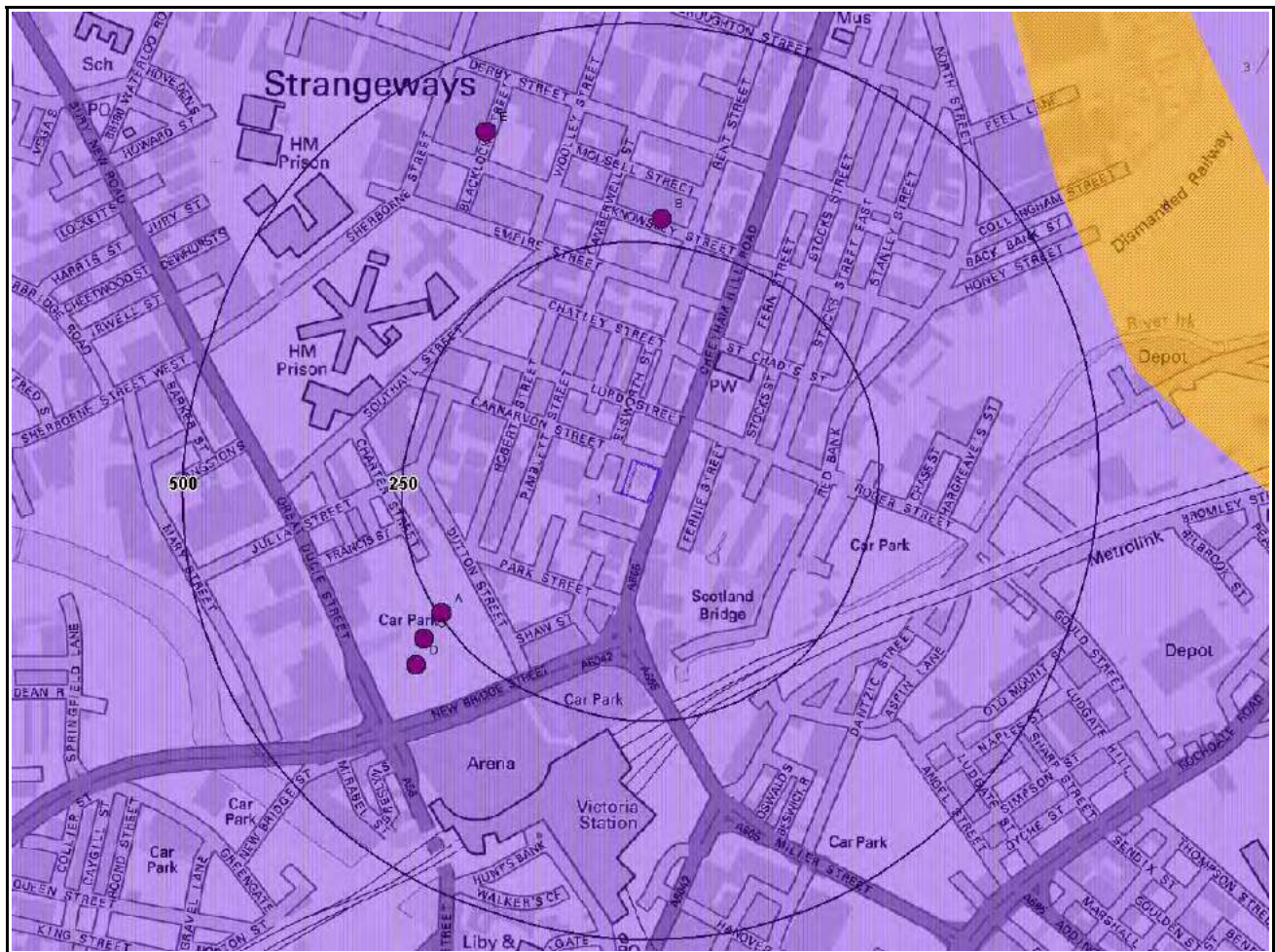
Aquifer Within Superficial Geology Legend



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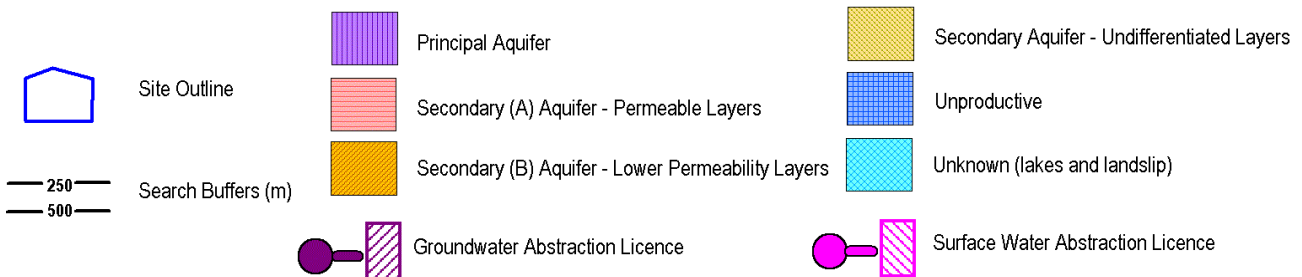
5b. Hydrogeology - Aquifer Within Bedrock Geology and Abstraction Licenses



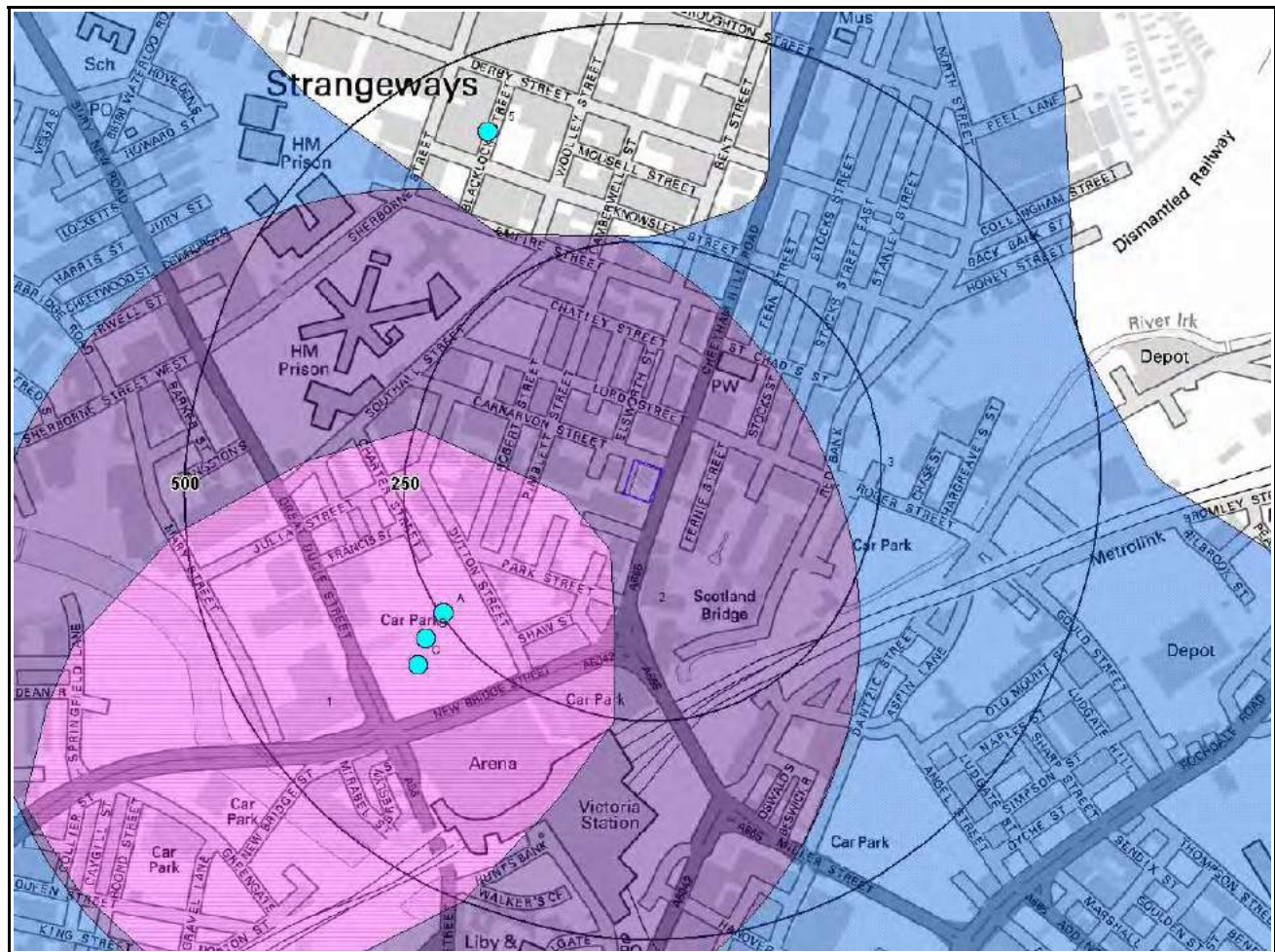
Aquifer Within Bedrock Geology Legend



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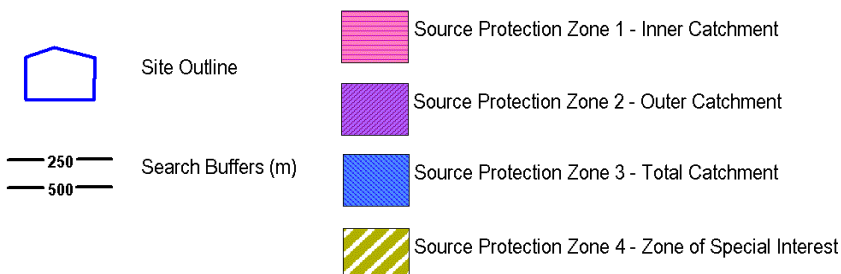
5c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



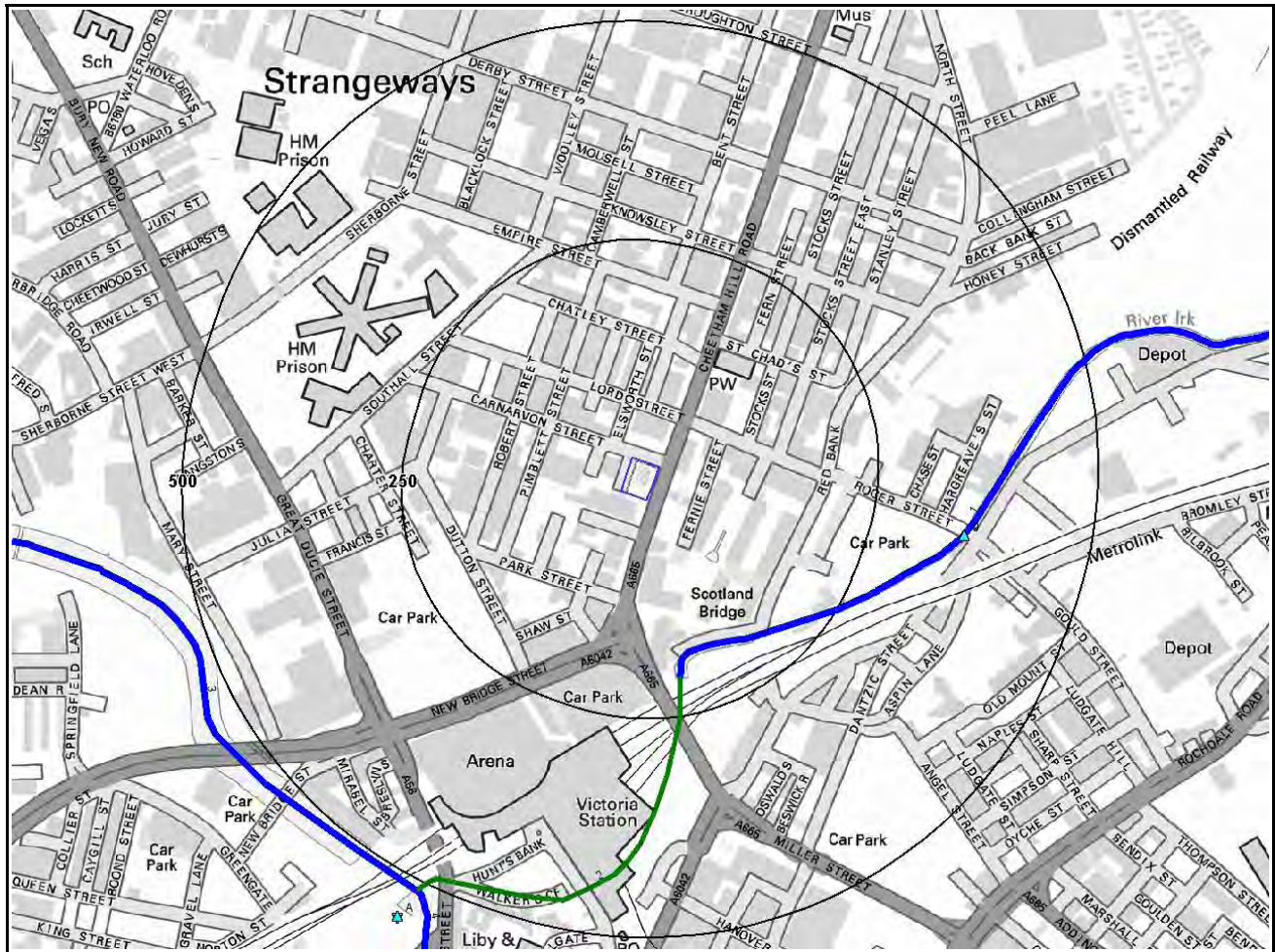
SPZ and Potable Water Abstraction Licenses
Legend



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5d. Hydrology – Detailed River Network and River Quality



Hydrology Legend



5. Hydrogeology and Hydrology

5.1 Aquifer within Superficial Deposits

Are there records of productive strata within the superficial geology at or in proximity to the property?

Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the GroundSure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (5a):

ID	Distance [m]	Direction	Designation	Description
4	0.0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
1	287.0	W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

5.2 Aquifer within Bedrock Deposits

Are there records of productive strata within the bedrock geology at or in proximity to the property?

Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the GroundSure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (5b):

ID	Distance [m]	Direction	Designation	Description
1	0.0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

5.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site?

Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (5b):

ID	Distance	Direction	NGR	Details
9A	247.0	SW	383850, 399250	Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 1) At Premises, Strangeways, Manchester" Data Type: Point Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:

10A	247.0	SW	383850, 399250	Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole (no 1) At Premises, Strangeways, Manchester" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:
11A	247.0	SW	383850, 399250	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 1) At Premises, Strangeways, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
12A	247.0	SW	383850, 399250	Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole (no 1) At Premises, Strangeways, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
13A	247.0	SW	383850, 399250	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 1 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
14A	247.0	SW	383850, 399250	Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole Number 1 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
15B	278.0	N	384100, 399700	Licence No: 2569004011 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole At Derby Brewery, Cheetham, Manchester 3" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 423 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/2/1966 Version End Date:
16B	278.0	N	384100, 399700	Licence No: 2569004011 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "borehole At Derby Brewery, Cheetham, Manchester 3" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 423 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/2/1966 Version End Date:
17B	278.0	N	384100, 399700	Licence No: 2569004011 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: Borehole At Derby Brewery, Cheetham, Manchester 3 Data Type: Point	Annual Volume (m³): 45460 Max Daily Volume (m³): 181.84 Original Application No: 0423 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/2/1966 Version End Date:
18B	278.0	N	384100, 399700	Licence No: 2569004011 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole At Derby Brewery, Cheetham, Manchester 3 Data Type: Point	Annual Volume (m³): 45460 Max Daily Volume (m³): 181.84 Original Application No: 0423 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/2/1966 Version End Date:

19C	280.0	SW	383830, 399220	Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole (no 3) At Premises, Strangeways, Manchester" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:
20C	280.0	SW	383830, 399220	Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 3) At Premises, Strangeways, Manchester" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:
21C	280.0	SW	383830, 399220	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 3) At Premises, Strangeways, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
22C	280.0	SW	383830, 399220	Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole (no 3) At Premises, Strangeways, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
23C	280.0	SW	383830, 399220	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
24C	280.0	SW	383830, 399220	Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
25C	280.0	SW	383830, 399220	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
26C	280.0	SW	383830, 399220	Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
27D	307.0	SW	383820, 399190	Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole (no 2) At Premises, Strangeways, Manchester" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:

28D	307.0	SW	383820, 399190	Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 2) At Premises, Strangeways, Manchester" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:
29D	307.0	SW	383820, 399190	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 2) At Premises, Strangeways, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
30D	307.0	SW	383820, 399190	Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole (no 2) At Premises, Strangeways, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
31D	307.0	SW	383820, 399190	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
32D	307.0	SW	383820, 399190	Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
33D	307.0	SW	383820, 399190	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
34D	307.0	SW	383820, 399190	Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
35E	411.0	NW	383900, 399800	Licence No: 2569004021 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: Borehole At Premises, Derby Street, Cheetham, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1749 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/1993 Version End Date:
36E	411.0	NW	383900, 399800	Licence No: 2569004021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole At Premises, Derby Street, Cheetham, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1749 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/1993 Version End Date:

Not shown	773.0	SW	383700, 398700	Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: "borehole At Dial House, Chapel St, Salford" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 2333 Original Start Date: 27/1/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/1/1971 Version End Date:
Not shown	773.0	SW	383700, 398700	Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: Borehole At Dial House, Chapel St, Salford Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 2333 Original Start Date: 27/1/1971 Expiry Date: - Issue No: 101 Version Start Date: 1/4/1984 Version End Date:
Not shown	773.0	SW	383700, 398700	Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: Borehole At Dial House Chapel Street Salford Data Type: Point	Annual Volume (m³): 45 Max Daily Volume (m³): 30 Original Application No: 2333 Original Start Date: 27/1/1971 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2007 Version End Date:
Not shown	1133.0	NE		Licence No: 2569005015 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "b/hole, Little Green Works, Collyhurst Rd, Manchester 10" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 689 Original Start Date: 16/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/2/1995 Version End Date:
Not shown	1133.0	NE		Licence No: 2569005015 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: B/hole, Little Green Works, Collyhurst Rd, Manchester 10 Data Type: Point	Annual Volume (m³): 438689 Max Daily Volume (m³): 1636.56 Original Application No: NPS/WR/006003 Original Start Date: 16/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/2/2011 Version End Date:
Not shown	1295.0	SW		Licence No: 2569007089 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: 2 Boreholes At Gartside Street Manchester Data Type: Line	Annual Volume (m³): 200000 Max Daily Volume (m³): 1179 Original Application No: 7546 Original Start Date: 26/1/2005 Expiry Date: 31/3/2011 Issue No: 2 Version Start Date: 10/7/2008 Version End Date:
Not shown	1377.0	S		Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "borehole At George St, Manchester" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 2332 Original Start Date: 27/1/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/1/1971 Version End Date:
Not shown	1377.0	S		Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: Borehole At George St, Manchester Data Type: Point	Annual Volume (m³): 1100 Max Daily Volume (m³): 860 Original Application No: 2332 Original Start Date: 1/4/1984 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2007 Version End Date:
Not shown	1670.0	S		Licence No: NW0690006001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: Boreholes At Origin Developments, Manchester Data Type: Point	Annual Volume (m³): 139128 Max Daily Volume (m³): 1010 Original Application No: 7623 Original Start Date: 19/1/2009 Expiry Date: 31/3/2015 Issue No: 1 Version Start Date: 19/1/2009 Version End Date:
Not shown	1670.0	S		Licence No: NW/069/0006/001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: Boreholes At Origin Developments, Manchester Data Type: Point	Annual Volume (m³): 139128 Max Daily Volume (m³): 1010 Original Application No: 7623 Original Start Date: 19/1/2009 Expiry Date: 31/3/2015 Issue No: 1 Version Start Date: 19/1/2009 Version End Date:

5.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site?

No

Database searched and no data found.

5.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site?

Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (5c):

ID	Distance	Direction	NGR	Details	
4A	247.0	SW	383850, 399250	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 1) At Premises, Strangeways, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
5A	247.0	SW	383850, 399250	Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 1) At Premises, Strangeways, Manchester" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
6A	247.0	SW	383850, 399250	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 1 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
7B	280.0	SW	383830, 399220	Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 3) At Premises, Strangeways, Manchester" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
8B	280.0	SW	383830, 399220	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:

9B	280.0	SW	383830, 399220	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 3) At Premises, Strangeways, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
10B	280.0	SW	383830, 399220	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
11C	307.0	SW	383820, 399190	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
12C	307.0	SW	383820, 399190	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 2) At Premises, Strangeways, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
13C	307.0	SW	383820, 399190	Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 2) At Premises, Strangeways, Manchester" Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
14C	307.0	SW	383820, 399190	Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
15	411.0	NW	383900, 399800	Licence No: 2569004021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole At Premises, Derby Street, Cheetham, Manchester Data Type: Point	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1749 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:

5.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site?

Yes

The following Source Protection Zones records are represented on the SPZ and Potable Water Abstraction Map (5c):

ID	Distance	Direction	Type	Description
2	0.0	On Site	2	Outer Catchment
1	53.0	SW	1	Inner Catchment
3	171.0	NE	3	Total Catchment

Report Reference: CMAPS-CM-230777-21956-210513

5.7 River Quality

Is there any Environment Agency information on river quality within 1500m of the study site? **Yes**

Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (5d):

ID	Distance [m]	Direction	NGR	River Details	Biological Quality Grade				
					2005	2006	2007	2008	2009
5A	550.0	SW	383800, 398900	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: End of Stretch NGR	E	E	E	E	E
Not shown	942.0	NE	384900, 399910	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: Start of Stretch NGR	E	E	E	E	E
Not shown	942.0	NE	384900, 399910	River Name: Moston Bk Reach: Qsl At Hale Lane Failsworth To Irk End/Start of Stretch: End of Stretch NGR	F	F	F	F	E
Not shown	942.0	NE	384900, 399910	River Name: Irk Reach: Wince Brook To Moston Bk. End/Start of Stretch: End of Stretch NGR	E	E	E	E	E

Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAH). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (5d):

ID	Distance [m]	Direction	NGR	River Details	Chemical Quality Grade (Headline Indicator)				
					2005	2006	2007	2008	2009
9	356.0	E	384445, 399335	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: Sample Point NGR	C	C	C	C	D
10A	550.0	SW	383800, 398900	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: End of Stretch NGR	C	C	C	C	D
Not shown	942.0	NE	384900, 399910	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: Start of Stretch NGR	C	C	C	C	D
Not shown	942.0	NE	384900, 399910	River Name: Irk Reach: Wince Brook To Moston Bk. End/Start of Stretch: End of Stretch NGR	C	C	C	C	C

Not shown	1269.0	SE	384950, 398450	River Name: Rochdale Canal Reach: Empress Processing To Ashton Canal End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
Not shown	1269.0	SE	384950, 398450	River Name: Rochdale Canal Reach: Qsl At Summit To Empress Processing End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	1404.0	SE	384850, 398200	River Name: Rochdale Canal Reach: Empress Processing To Ashton Canal End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	1445.0	SE	384830, 398140	River Name: Rochdale Canal Reach: Ashton Canal To Knott Mill End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A

5.8 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site?

Yes

The following Detailed River Network records are represented on the Hydrology Map (5d):

ID	Distance	Direction	Details
1	179.0	S	River Name: River Irk Water Course Name: IRK Welsh River Name: - Alternative Name: - River Type: Primary River Catchment: - Drain: NO Main River Status: Currently Undefined
2	207.0	S	River Name: - Water Course Name: IRK Welsh River Name: - Alternative Name: - River Type: Extended Culvert (greater than 50m) Catchment: - Drain: NO Main River Status: Currently Undefined

5.9 Surface Water Features

Are there any surface water features within 250m of the study site?

Yes

The following surface water records are not represented on mapping:

Distance to Surface Water (m)	on-site	0-50	51-250
Surface water features within 250m of the study site	No	No	Yes

6. Environment Agency Flood Map

NW

▲
N

NE

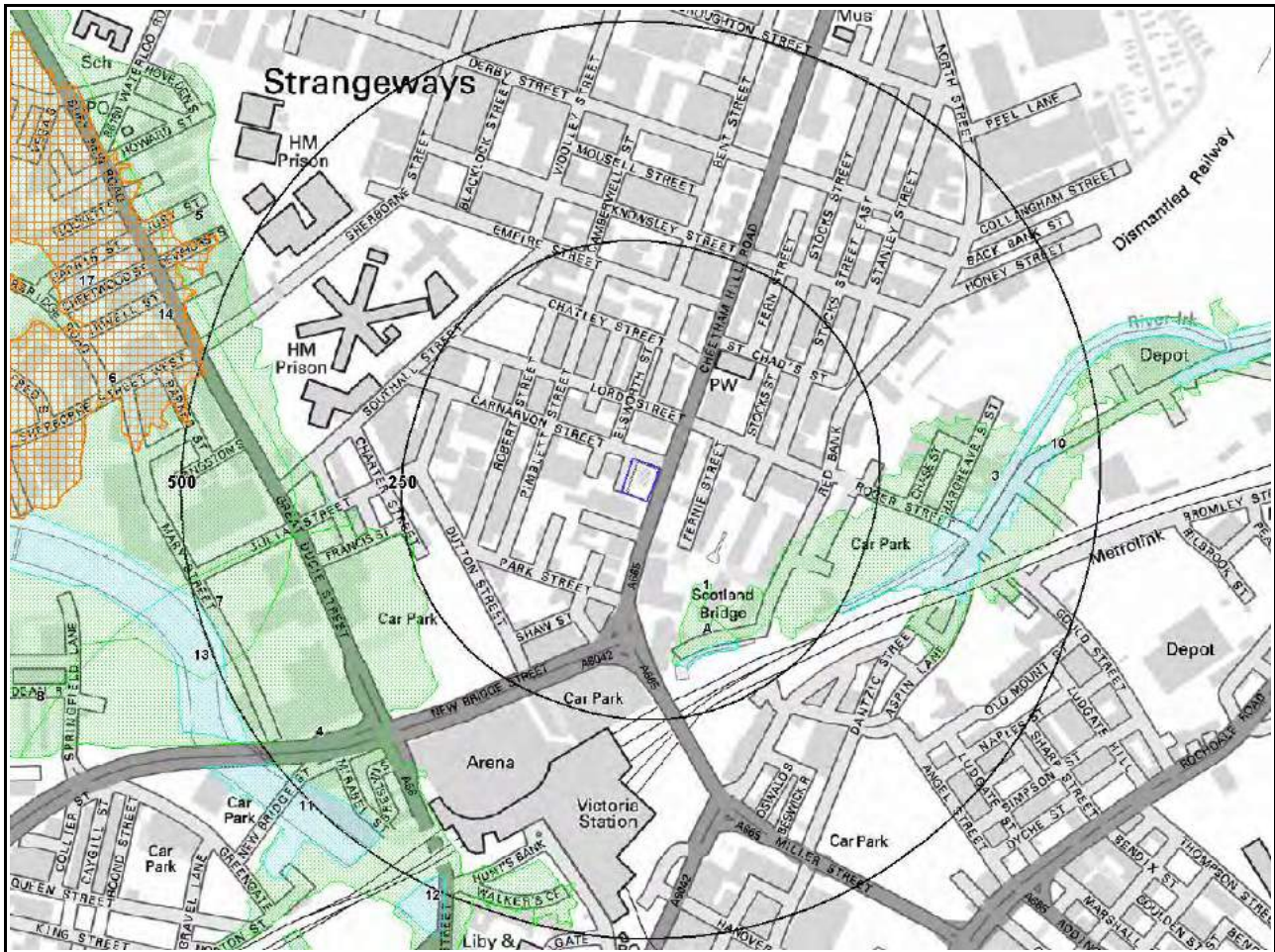
◀W

▶E

SW

▼
S

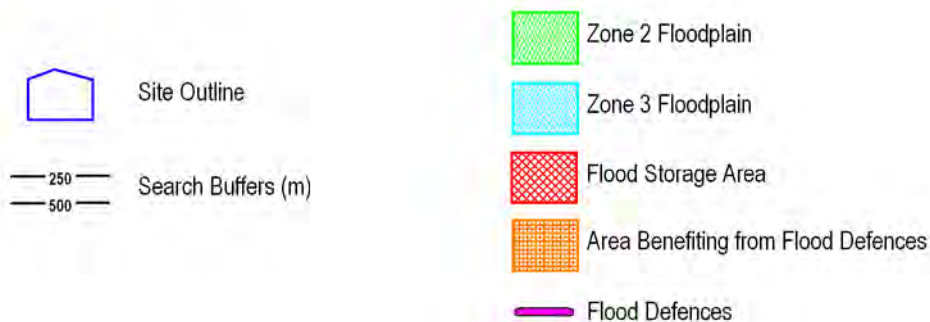
SE



Environment Agency Flood Legend



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6. Flooding

6.1 Zone 2 Flooding

Zone 2 floodplain estimates the annual probability of flooding as one in one thousand (0.1%) or greater from rivers and the sea but less than 1% from rivers or 0.5% from the sea. Alternatively, where information is available they may show the highest known flood level.

Is the site within 250m of an Environment Agency indicative Zone 2 floodplain?

Yes

The following floodplain records are represented as green shading on the Flood Map:

ID	Distance	Direction	Update	Type
2A	124.0	SE	13-Mar-2013	Zone 2 - (Fluvial Models) Flood Mapping of the Manchester Ship Canal in Trafford, Salford and Warrington was updated 9 August 2012 as a result of a judgment of the High Court. The judgment concluded that the Ship Canal sluice gates should not be regarded as formal flooddefences and that the Environment Agency's decision to map the Ship Canal flood zones as if the sluice gates were closed was unlawful. The Environment Agency have applied to the Court of Appeal to appeal against this judgment. For further information please contact the Environment Agency on 03708 506 506.
4	245.0	W	13-Mar-2013	Zone 2 - (Fluvial Models) Flood Mapping of the Manchester Ship Canal in Trafford, Salford and Warrington was updated 9 August 2012 as a result of a judgment of the High Court. The judgment concluded that the Ship Canal sluice gates should not be regarded as formal flooddefences and that the Environment Agency's decision to map the Ship Canal flood zones as if the sluice gates were closed was unlawful. The Environment Agency have applied to the Court of Appeal to appeal against this judgment. For further information please contact the Environment Agency on 03708 506 506.
1	110.0	SE	13-Mar-2013	Zone 2 - (Fluvial Models)
3	143.0	SE	13-Mar-2013	Zone 2 - (Fluvial Models)

6.2 Zone 3 Flooding

Zone 3 estimates the annual probability of flooding as one in one hundred (1%) or greater from rivers and a one in two hundred (0.5%) or greater from the sea. Alternatively, where information is available they may show the highest known flood level.

Is the site within 250m of an Environment Agency indicative Zone 3 floodplain?

Yes

The following floodplain records are represented as blue shading on the Flood Map:

ID	Distance	Direction	Update	Type
9A	181.0	SE	13-Mar-2013	Zone 3 - (Fluvial Models) Flood Mapping of the Manchester Ship Canal in Trafford, Salford and Warrington was updated 9 August 2012 as a result of a judgment of the High Court. The judgment concluded that the Ship Canal sluice gates should not be regarded as 'formal' flooddefences and that the Environment Agency's decision to map the Ship Canal flood zones as if the sluice gates were closed was unlawful. The Environment Agency have applied to the Court of Appeal to appeal against this judgment. For further information please contact the Environment Agency on 03708 506 506.
10	247.0	SE	13-Mar-2013	Zone 3 - (Fluvial Models)

6.3 Flood Defences

Are there any Flood Defences within 250m of the study site?

No

Report Reference: CMAPS-CM-230777-21956-210513

6.4 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? **No**

6.5 Areas used for Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? **No**

6.6 Groundwater Flooding Susceptibility Areas

Are there any British Geological Survey groundwater flooding susceptibility flood areas within 50m of the boundary of the study site? **Yes**

What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions? **Moderate**

6.7 Groundwater Flooding Confidence Areas

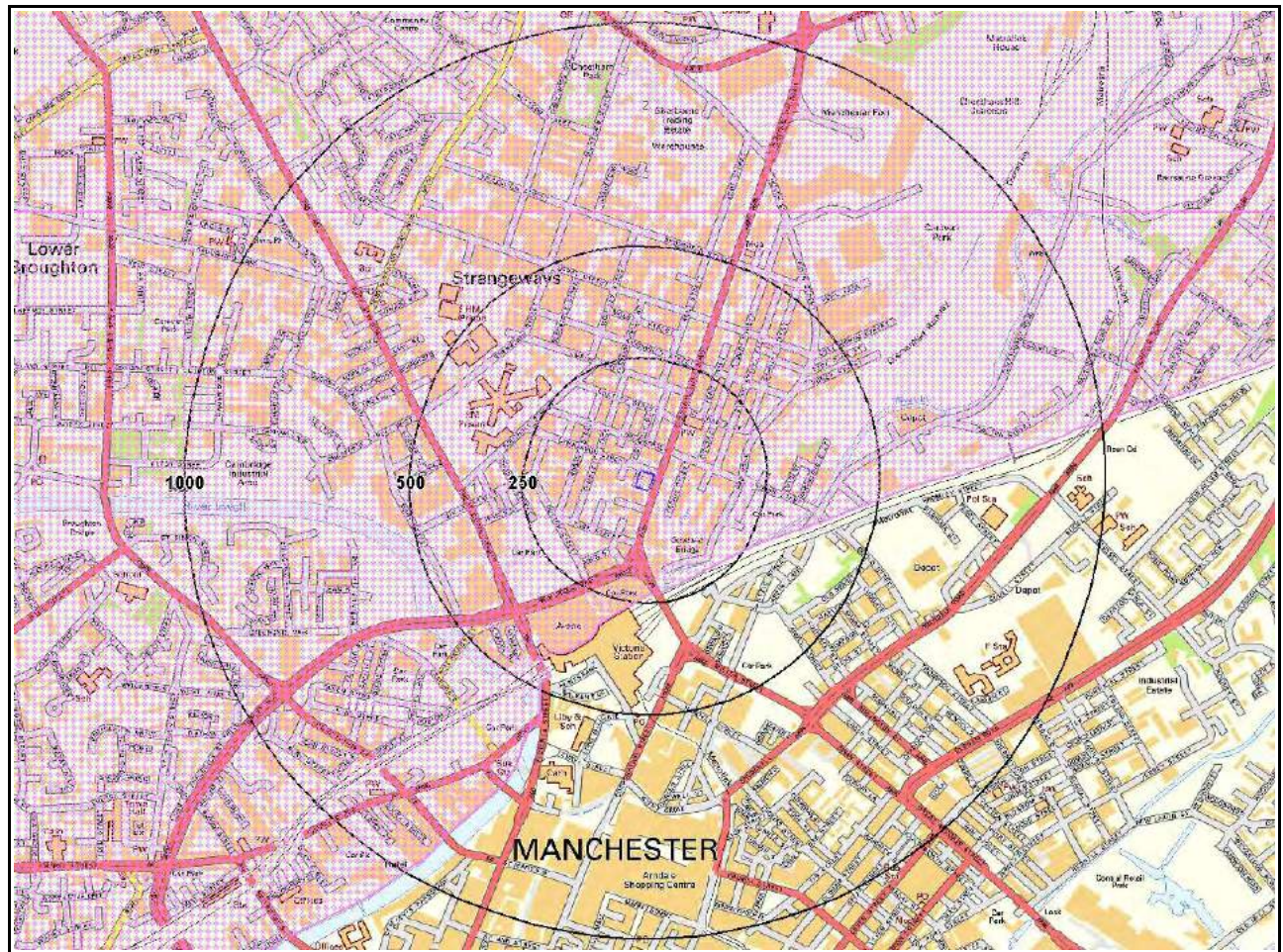
What is the British Geological Survey confidence rating in this result? **Low**

Notes:

Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The **confidence rating** is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

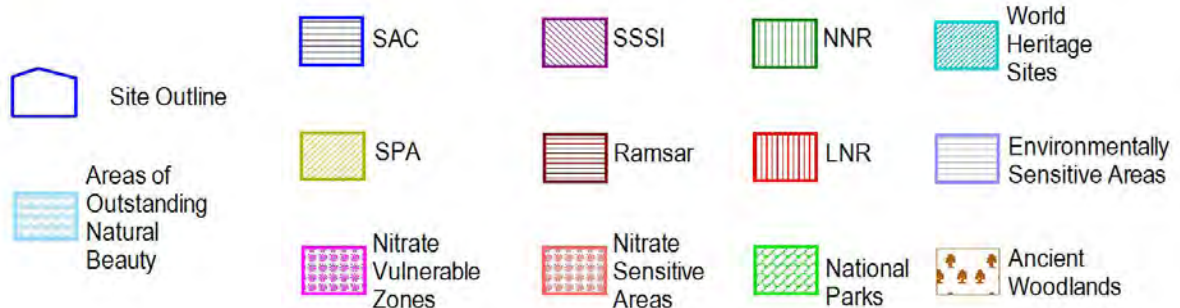
7.Designated Environmentally Sensitive Sites Map



Designated Environmentally Sensitive Sites Legend

Mapping sourced from
Ordnance Survey

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7. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? **Yes**

Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site: **0**

Database searched and no data found.

Records of National Nature Reserves (NNR) within 2000m of the study site: **0**

Database searched and no data found.

Records of Special Areas of Conservation (SAC) within 2000m of the study site: **0**

Database searched and no data found.

Records of Special Protection Areas (SPA) within 2000m of the study site: **0**

Database searched and no data found.

Records of Ramsar sites within 2000m of the study site: **0**

Database searched and no data found.

Records of Local Nature Reserves (LNR) within 2000m of the study site: **0**

Database searched and no data found.

Records of World Heritage Sites within 2000m of the study site: **0**

Database searched and no data found.

Records of Environmentally Sensitive Areas within 2000m of the study site: **0**

Database searched and no data found.

Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site: **0**

Database searched and no data found.

Records of National Parks (NP) within 2000m of the study site: **0**

Database searched and no data found.

Report Reference: CMAPS-CM-230777-21956-210513

Records of Nitrate Sensitive Areas within 2000m of the study site: **0**

Database searched and no data found.

Records of Nitrate Vulnerable Zones within 2000m of the study site: **2**

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance	Direction	NVZ Type	Data Source
1	0.0	On Site	NVZ Area	DEFRA
2	576.0	N	NVZ Area	DEFRA

Records of Ancient Woodland within 2000m of the study site: **0**

Database searched and no data found.

8. Natural Hazards Findings

8.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a GroundSure GeoInsight, available from our website. The following information has been found:

8.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? **Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

8.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? **Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

8.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? **Null - Negligible**

Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

8.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? **Negligible**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

8.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

8.1.6 Running Sand

What is the maximum Running Sand* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

* This indicates an automatically generated 50m buffer and site.

9. Mining

9.1 Coal Mining

Are there any coal mining areas within 75m of the study site?

Yes

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

9.2 Shallow Mining

What is the subsidence hazard relating to shallow mining on-site*?

Negligible

*Please note this data is searched with a 150m buffer.

9.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site?

No

Guidance: No Guidance Required.

10. Contacts

CENTREMAPS

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groundsure@centremaps.co.uk
CENTREMAPS, Brockamin House, Leigh, Worcester, London,
WR6 5JU

Directors: M C Walker, MInst C.E.S., C M Walker,
S J Hawkins BSc (Hons), S E Stewart BSc (Hons)
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Brockamin House, Leigh, Worcester, WR6 5JU.

British Geological Survey (England & Wales)

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143. Fax: 0115 936 3276. Email:
enquiries@bgs.ac.uk
Web: www.bgs.ac.uk
BGS Geological Hazards Reports and general geological
enquiries

centremapslive.com
the mapping portal from Laser Surveys



Environment Agency

National Customer Contact Centre
PO Box 544
Rotherham
S60 1BY
Tel: 08708 506 506
Web: www.environment-agency.gov.uk
Email: enquiries@environment-agency.gov.uk



Health Protection Agency

Chilton, Didcot, Oxon, OX11 0RQ
Tel: 01235 822622 www.hpa.org.uk/radiation
Radon measures and general radon information and
guidance

The Coal Authority

200 Lichfield Lane, Mansfield, Notts NG18 4RG
Tel: 0845 762 6848
DX 716176 Mansfield 5
Web: www.groundstability.com



Ordnance Survey

Romsey Road
Southampton SO16 4GU
Tel: 08456 050505



Local Authority

Authority: Manchester City Council
Phone: 0161 234 5000
Web: www.manchester.gov.uk
Address: Town Hall, Albert Square, Manchester, M60 2LA

Get Mapping PLC

Virginia Villas, High Street, Hartley Witney, Hampshire RG27
8NW
Tel: 01252 845444



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This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.

Standard Terms and Conditions

1 Definitions

In these conditions unless the context otherwise requires:

"Beneficiary" means the Client or the customer of the Client for whom the Client has procured the Services.

"Commercial" means any building which is not Residential.

"Commission" means an order for Consultancy Services submitted by a Client.

"Consultancy Services" mean consultancy services provided by GroundSure including, without limitation, carrying out interpretation of third party and in-house environmental data, provision of environmental consultancy advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Contract" means the contract between GroundSure and the Client for the performance of the Services which arises upon GroundSure's acceptance of an Order or Commission and which shall incorporate these conditions, the relevant GroundSure User Guide, proposal by GroundSure and the content of any subsequent report, and any agreed amendments in accordance with clause 11.

"Client" means the party that submits an Order or Commission.

"Data Provider" means any third party providing Third Party Content to GroundSure.

"Data Report" means reports comprising factual data with no professional interpretation in respect of the level of likely risk and/or liability available from GroundSure.

"GroundSure" means GroundSure Limited, a company registered in England and Wales under number 03421028 and whose registered office is at GroundSure Ltd, c/o Top Right Group Limited, The Prow, 1 Wilder Walk, London W1B 5AP, United Kingdom.

"GroundSure Materials" means all materials prepared by GroundSure as a result of the provision of the Services, including but not limited to Data Reports, Mapping and Risk Screening Reports.

"Intellectual Property" means any patent, copyright, design rights, service marks, moral rights, data protection rights, know-how, trade mark or any other intellectual property rights.

"Mapping" an historical map or a combination of historical maps of various ages, time periods and scales available from GroundSure.

"Order" means an order form submitted by the Client requiring Services from GroundSure in respect of a specified Site.

"Order Website" means online platform via which Orders may be placed.

"Report" means a Risk Screening Report or Data Report for commercial or residential property available from GroundSure relating to the Site prepared in accordance with the specifications set out in the relevant User Guide.

"Residential" means any building used as or suitable for use as an individual dwelling.

"Risk Screening Report" means one of GroundSure's risk screening reports, comprising factual data with interpretation in respect of the level of likely risk and/or liability, excluding **"Consultancy Services"**.

"Services" means the provision of any Report, Mapping or Consultancy Services which GroundSure has agreed to carry out for the Client/Beneficiary on these terms and conditions in respect of the Site.

"Site" means the landsite in respect of which GroundSure provides the Services.

"Third Party Content" means any data, database or other information contained in a Report or Mapping which is provided to GroundSure by a Data Provider.

"User Guide" means the relevant current version of the user guide, available upon request from GroundSure.

2 Scope of Services

2.1 GroundSure agrees to carry out the Services in accordance with the Contract and to the extent set out therein.

2.2 GroundSure shall exercise all the reasonable skill, care and diligence to be expected of experienced environmental consultants in the performance of the Services.

2.3 The Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in the Contract.

2.4 Terms and conditions appearing on a Client's order form, printed stationery or other communication, including invoices, to GroundSure, its employees, servants, agents or other representatives or any terms implied by custom, practice or course of dealing shall be of no effect and these terms and conditions shall prevail over all others.

2.5 If a Client/Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to procure such insurance, but makes no warranty that such insurance shall be available from insurers or offered on reasonable terms. GroundSure does not endorse or recommend any particular insurance product, policy or insurer. Any insurance purchased shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. The Client/Beneficiary should take independent advice to ensure that the insurance policy requested and/or offered is suitable for its requirements.

2.6 GroundSure's quotations/proposals are valid for a period of 30 days only. GroundSure reserves the right to withdraw any quotation at any time before GroundSure accepts an Order or Commission. GroundSure's acceptance of an Order or Commission shall be effective only where such acceptance is in writing and signed by GroundSure's authorised representative or where accepted via GroundSure's Order Website.

3 The Client's obligations

3.1 The Client shall ensure the Beneficiary complies with and is bound by the terms and conditions set out in the Contract and shall provide that GroundSure may in its own right enforce such terms and conditions against the Beneficiary pursuant to the Contracts (Rights of Third Parties) Act 1999. The Client shall be liable for all breaches of the Contract by the Beneficiary as if they were breaches by the Client. The Client shall be solely responsible for ensuring that the Report/Mapping ordered is appropriate and suitable for the Beneficiary's needs.

3.2 The Client shall (or shall procure that the Beneficiary shall) supply to GroundSure as soon as practicable and without charge all information necessary and accurate relevant data including any specific and/or unusual environmental information relating to the Site known to the Client/Beneficiary which may pertain to the Services and shall give such assistance as GroundSure shall reasonably require in the performance of the Services (including, without limitation, access to a Site, facilities and equipment as agreed in the Contract).

3.3 Where Client/Beneficiary approval or decision is required, such approval or decision shall be given or procured in reasonable time as not to delay or disrupt the performance of any other part of the Services.

3.4 The Client shall not and shall not knowingly permit the Beneficiary to, save as expressly permitted by these terms and conditions, re-sell, alter, add to, amend or use out of context the content of any Report, Mapping or, in respect of any Services, information given by GroundSure. For the avoidance of doubt, the Client and Beneficiary may make the Report, Mapping or GroundSure's findings available to a third party who is considering acquiring the whole or part of the Site, or providing funding in relation to the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.5 The Client is responsible for maintaining the confidentiality of its user name and password if using GroundSure's internet ordering service and accepts responsibility for all activity that occurs under such account and password.

4 Reliance

4.1 Upon full payment of all relevant fees and subject to the provisions of these terms and conditions, the Client and Beneficiary are granted an irrevocable royalty-free licence to access the information contained in a Report, Mapping or in a report prepared by GroundSure in respect of or arising out of Consultancy Services. The Services may only be used for the benefit of the Client and those persons listed in clauses 4.2 and 4.3.

4.2 In relation to Data Reports, Mapping and Risk Screening Reports, the Client shall be entitled to make Reports available to (i) the Beneficiary, (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate), (iv) the first purchaser or first tenant of the Site (v) the professional advisers and lenders of the first purchaser or tenant of the Site. Accordingly GroundSure shall have the same duties and obligations to those persons in respect of the Services as it has to the Client and those persons shall have the benefit of any of the Client's rights under the Contract as if those persons were parties to the Contract. For the avoidance of doubt, the limitations of GroundSure's liability as set out in clauses 7 and 11.6 shall apply.

4.3 In relation to Consultancy Services, reliance shall be limited to the Client, Beneficiary and named parties on the Report.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise agreed in writing with GroundSure, any other party considering the information supplied by GroundSure as part of the Services, including (but not limited to) insurance underwriters, does so at their own risk and GroundSure has no legal obligations to such party unless otherwise agreed in writing.

4.5 The Client shall not and shall not knowingly permit any person (including the Beneficiary) who is provided with a copy of any Report, (except as permitted herein or by separate agreement with GroundSure) to: (a) remove, suppress or modify any trade mark, copyright or other proprietary marking from the Report or Mapping; (b) create any product which is derived directly or indirectly from the data contained in the Report or Mapping; (c) combine the Report or Mapping with, or incorporate the Report or Mapping into any other information data or service; or (d) re-format or otherwise change (whether by modification, addition or enhancement) data or images contained in the Report or Mapping.

4.6 Notwithstanding clause 4.5, if the Client acts in a professional capacity, it may make reasonable use of a Report and/or findings made as a result of Consultancy Services to advise Beneficiaries. However, GroundSure shall have no liability in respect of any opinion or report given to such Beneficiaries by the Client or a third party.

5 Fees and Disbursements

5.1 GroundSure shall charge the Client fees at the rate and frequency specified in the Contract together, in the case of Consultancy Services, with all proper disbursements incurred by GroundSure in performing the Services. For the avoidance of doubt, the fees payable for the Services are as set out in GroundSure's written proposal, Order Website or Order acknowledgement form. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services.

5.2 Unless GroundSure requires prepayment, the Client shall promptly pay all fees disbursements and other monies due to GroundSure in full without deduction, counterclaim or set off together with such value added tax or other tax as may be required within 30 days from the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("**Payment Date**"). GroundSure reserves the right to charge interest which shall accrue on a daily basis from 30 days after the date of Payment Date until the date of payment (whether before or after judgment) at the rate of five per cent per annum above the Bank of England base rate from time to time.

5.3 In the event that the Client disputes the amount payable in respect of GroundSure's invoice it shall notify GroundSure no later than 28 days after the date thereof that it is in dispute. In default of such notification the Client shall be deemed to have agreed the amount thereof. As soon as reasonably practicable following receipt of a notification in respect of any disputed invoice, a member of the management team at GroundSure shall contact the Client and the parties shall use all reasonable endeavours to resolve the dispute.

6 Intellectual Property and Confidentiality

6.1 Subject to the provisions of clause 4.1, the Client and the Beneficiary hereby acknowledge that all Intellectual Property in the Services and Content are and shall remain owned by either GroundSure or the Data Providers and nothing in these terms purports to transfer or assign any rights to the Client or the Beneficiary in respect of the Intellectual Property.

6.2 The Client shall acknowledge the ownership of the **Third Party Content** where such **Third Party Content** is incorporated or used in the Client's own documents, reports, systems or services whether or not these are supplied to a third party.

6.3 Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client acknowledges that the proprietary rights subsisting in copyright, database rights and any other intellectual property rights in respect of any data and information contained in any Report are and shall remain (subject to clause 11.1) the property of GroundSure and/or any third party that has supplied data or information used to create a Report, and that these conditions do not purport to grant, assign or transfer any such rights in respect thereof to a Client and/or a Beneficiary.

6.5 The Client shall (and shall procure that any recipients of the Report as permitted under clause 4.2 shall):

(i) not remove, suppress or modify any trademark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

- (iii) not create any product or report which is derived directly or indirectly from the data contained in the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);
 - (iv) not combine the Services with or incorporate such Services into any other information data or service; and
 - (v) not reformat or otherwise change (whether by modification, addition or enhancement), data contained in the Services (save that those acting in a professional capacity to the Beneficiary shall not be in breach of this clause 6.5(v) where such reformatting is in the normal course of providing advice based upon the Services), in each case of parts (iii) to (v) inclusive, whether or not such product or report is produced for commercial profit or not.
- 6.6 The Client and/or Beneficiary shall and shall procure that any party to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.
- 6.8 Save as otherwise set out in these terms and conditions, any information provided by one party ("**Disclosing Party**") to the other party ("**Receiving Party**") shall be treated as confidential and only used for the purposes of these terms and conditions, except in so far as the Receiving Party is authorised by the Disclosing Party to provide such information in whole or in part to a third party.

7 Liability

THE CLIENT'S ATTENTION IS DRAWN TO THIS PROVISION

- 7.1 Subject to the provisions of this clause 7, GroundSure shall be liable to the Beneficiary only in relation to any direct losses or damages caused by any negligent act or omission of GroundSure in preparing the GroundSure Materials and provided that the Beneficiary has used all reasonable endeavours to mitigate any such losses.
- 7.2 GroundSure shall not be liable for any other losses or damages incurred by the Beneficiary, including but not limited to:
- (i) loss of profit, revenue, business or goodwill, losses relating to business interruption, loss of anticipated savings, loss of or corruption to data or for any special, indirect or consequential loss or damage which arise out of or in connection with the GroundSure Materials or otherwise in relation to a Contract;
 - (ii) any losses or damages that arise as a result of the use of all or part of the GroundSure Materials in breach of these terms and conditions or contrary to the terms of the relevant User Guide;
 - (iii) any losses or damages that arise as a result of any error, omission or inaccuracy in any part of the GroundSure Materials where such part is based on any Third Party Content or any reasonable interpretation of Third Party Content. The Client accepts, and shall procure that any other Beneficiary shall accept, that it has no claim or recourse to any Data Provider in relation to Third Party Content; and/or
 - (iv) any loss or damage to a Client's computer, software, modem, telephone or other property caused by a delay or loss of use of GroundSure's internet ordering service.
- 7.3 GroundSure's total liability in contract, tort (including negligence or breach of statutory duty), misrepresentation, restitution or otherwise, arising in connection with the GroundSure Materials or otherwise in relation to the Contract shall be limited to £10 million in total (i) for any one claim or (ii) for a series of connected claims brought by one or more parties.
- 7.4 For the duration of the liability periods set out in clauses 7.5 and 7.6 below, GroundSure shall maintain professional indemnity insurance in respect of its liability under these terms and conditions provided such insurance is readily available at commercially viable rates. GroundSure shall produce evidence of such insurance if reasonably requested by the Client. A level of cover greater than GroundSure's current level of cover may be available upon request and agreement with the Client.
- 7.5 Any claim under the Contract in relation to Data Reports, Mapping and Risk Screening Reports, must be brought within six years from the date when the Beneficiary became aware that it may have a claim and in no event may a claim be brought twelve years or more after completion of such a Contract. For the avoidance of doubt, any claim in respect of which proceedings are notified to GroundSure in writing prior to the expiry of the time periods referred to in this clause 7.5 shall survive the expiry of those time periods provided the claim is actually commenced within six months of notification.
- 7.6 Any claim under the Contract in relation to Consultancy Services, must be brought within six years from the date the Consultancy Services were completed.
- 7.7 The Client accepts and shall procure that any other Beneficiary shall accept that it has no claim or recourse to any Data Provider or to GroundSure in respect of the acts or omissions of any Data Provider and/or any Third Party Content provided by a Data Provider.
- 7.8 Nothing in these terms and conditions:
- (i) excludes or limits the liability of GroundSure for death or personal injury caused by GroundSure's negligence, or for fraudulent misrepresentation; or
 - (ii) shall affect the statutory rights of a consumer under the applicable legislation.

8 GroundSure right to suspend or terminate

- 8.1 In the event that GroundSure reasonably believes that the Client or Beneficiary as applicable has not provided the information or assistance required to enable the proper performance of the Services, GroundSure shall be entitled on fourteen days written notice to suspend all further performance of the Services until such time as any such deficiency has been made good.
- 8.2 GroundSure may additionally terminate the Contract immediately on written notice in the event that:
- (i) the Client shall fail to pay any sum due to GroundSure within 28 days of the Payment Date; or
 - (ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an Administration Order made against it or if a Receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or
 - (iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or
 - (iv) the Client or the Beneficiary breaches any material term of the Contract (including, but not limited to, the obligations in clause 4) incapable of remedy or if remediable, is not remedied within 14 days of notice of the breach.

9 Client's Right to Terminate and Suspend

- 9.1 Subject to clause 10.2, the Client may at any time after commencement of the Services by notice in writing to GroundSure require GroundSure to terminate or suspend immediately performance of all or any of the Services.
- 9.2 The Client waives all and any right of cancellation it may have under the Consumer Protection (Distance Selling) Regulations 2000 (as amended) in respect of the Order of a Report/Mapping. This does not affect the Beneficiary's statutory rights.

10 Consequences of Withdrawal, Termination or Suspension

- 10.1 Upon termination or any suspension of the Services, GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client/Beneficiary any property of the Client/ Beneficiary in GroundSure's possession or control.
- 10.2 In the event of termination/suspension of the Contract under clauses 8 or 9, the Client shall pay to GroundSure all and any fees payable in respect of the performance of the Services up to the date of termination/suspension. In respect of any Consultancy Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination/suspension of the Contract.

11 General

- 11.1 The mapping contained in the Services is protected by Crown copyright and must not be used for any purpose outside the context of the Services or as specifically provided in these terms.
- 11.2 GroundSure reserves the right to amend these terms and conditions. No variation to these terms shall be valid unless signed by an authorised representative of GroundSure.
- 11.3 No failure on the part of GroundSure to exercise and no delay in exercising, any right, power or provision under these terms and conditions shall operate as a waiver thereof.
- 11.4 Save as expressly provided in clauses 4.2, 4.3, 6.3 and 11.5, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.
- 11.5 The Secretary of State for Communities and Local Government acting through Ordnance Survey may enforce breach of clause 6.1 of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.
- 11.6 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:
- (i) the Client or Beneficiary's failure to provide facilities, access or information;
 - (ii) fire, storm, flood, tempest or epidemic;
 - (iii) Acts of God or the public enemy;
 - (iv) riot, civil commotion or war;
 - (v) strikes, labour disputes or industrial action;
 - (vi) acts or regulations of any governmental or other agency;
 - (vii) suspension or delay of services at public registries by Data Providers; or
 - (viii) changes in law.
- 11.7 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.
- 11.8 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email and on the second working day after the day of posting if sent by first class post.
- 11.9 The Contract constitutes the entire contract between the parties and shall supersede all previous arrangements between the parties.
- 11.10 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.
- 11.11 These terms and conditions shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with these terms and conditions shall be subject to the exclusive jurisdiction of the English courts.
- 11.12 If the Client or Beneficiary has a complaint about the Services, notice can be given in any format eg writing, phone, email to the Compliance Officer at GroundSure who will respond in a timely manner.

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4.3 SITE PHOTOGRAPHS

Photograph 1 Disused petrol filling station operating as a hand car wash



Photograph 2 Hand car wash on-Site



Photograph 3 The Site viewed from the south



Photograph 4 Neighbouring land uses (north of the Site)



Photograph 5 Neighbouring filling station (to the east)



Photograph 6 Neighbouring filling station

