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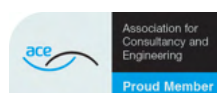
Phase 2 Geo-Environmental Investigation Report

For: Great Places Housing Group Limited

great
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HOUSING GROUP

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1.0 INTRODUCTION

This Phase 2 Geo-Environmental Investigation Report has been prepared at the request of Great Places Housing Group Limited. The ground investigation was undertaken in August 2024 however instructions to proceed with this report were received in November 2025.

This report pertains to a c. 0.33 Ha site located to the north of Drake Street, Rochdale, c. 0.5km south of Rochdale Town centre, at the approximate postcode OL16 1PJ. The National Ordnance Survey Grid Reference for the centre of the site is 389439E, 412859N.

The site currently comprises an overgrown plot of vacant land, with evidence of fly tipping across the entire site. The site is currently disused, however there is evidence of historical development across the site including mounds of bricks, demolition rubble underfoot and hardstanding in the western site section. The site is bound by Broadfield Stile to the east and Drake Street to the south, with residential properties beyond and Broadfield Park to the north. Garages are present at the western site boundary with residential properties and the A58 beyond. Access to the site is off Broadfield Stile along the eastern boundary. An aerial photo of the site is included below:



Figure 1: Aerial image of the site dated May 2019

This Phase 2 Geo-Environmental Investigation Report is to be used for submission to the Local Authority as part of a planning application. It is the client's intention to develop the site into a low-rise residential development comprising 26 No. dwellings consisting of 4 No. semi-detached dwellings and an apartment block with associated private gardens, soft landscaping and car parking.

A proposed development plan is contained in Appendix 2 with an extract below:



Figure 2: Extract of the proposed development plan

1.1 Brief

The brief was to carry out an intrusive geo-environmental ground investigation for the site based upon the findings of the IGE Consulting *Phase 1 Geo-Environmental Report* (3931-01, dated September 2024) and the proposed development outlined in Section 1.0. The investigation was to include the following tasks:

- a) Undertake / install appropriate exploratory holes and collect representative samples from exploratory holes and arrange appropriate chemical testing in accordance with the latest legal framework, record olfactory and / or visual

evidence of contamination during intrusive works and undertake on site in-situ and laboratory geotechnical testing;

- b) Formulate conceptual models to accommodate the findings of the ground investigation works in terms of the risk to human health, ground gas, controlled waters and the wider environment;
- c) Identify the risks and evaluate whether a Phase 3 numerical risk assessment and / or a Remedial Strategy, is required.
- d) Undertake an assessment of the ground conditions to provide outline recommendations for the proposed foundations.

A report was to be provided to summarise the findings and recommendations.

2.0 SCOPE OF INVESTIGATION WORK

This Phase 2 Geo-Environmental Investigation has been designed based on the findings of the IGE Consulting *Phase 1 Geo-Environmental Report* (3931-01, dated September 2024) and the client's requirements in relation to the proposed development outlined in Section 1.0.

The ground investigation works were undertaken between the 13th and 14th August 2024 and comprised 10 No. dynamic sampling boreholes undertaken spatially across the site. Subsequent laboratory testing was undertaken between 13th August and 4th September 2024.

Drilling of dynamic sampling boreholes was carried out by GP Drilling Ltd. Testing of soil samples for environmental purposes was carried out by i2 Analytical in accordance with the Environment Agency's MCERTS (Monitoring Certification) quality assurance accreditation scheme. Testing of soils for geotechnical laboratory analysis was undertaken by The Testing Lab Ltd, a UKAS accredited laboratory. These organisations were appointed directly by IGE Consulting to carry out these contracting works.

The locations of the exploratory holes were topographically surveyed (X-Y-Z axis) with an accuracy of 20mm.

The ground investigation was undertaken in general accordance with:

- BS 5930 (2015) + A1 (2020) Code of Practice for Ground Investigation;
- BS EN ISO 17892 Geotechnical Investigation and Testing - Laboratory Testing of Soil;
- BS 10175 (2026) Investigation of Potentially Contaminated Sites – Code of Practice;
- BS EN 1997-2 (2007) Eurocode 7 – Geotechnical Design – Ground Investigation and Testing;
- BS 8485 (2015) + A1 (2019) Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings;

- BS 8576 (2013) Guidance on Investigations for Ground Gas – Permanent gases and Volatile Organic Compounds; and
- Land Contamination Risk Management (2025).

Further details pertaining to the ground investigation works are outlined in the following sections.

The limitations of the investigation work and report are included in Appendix 1.

2.1 Dynamic Sampling Boreholes

10 No. dynamic sampling boreholes (DS01 to DS10, inclusive) were constructed spatially across the site to depths of 5.45m bgl (138.06m – 139.30m AOD).

The dynamic sample boreholes were undertaken in order to achieve the following:

- to establish the thickness, extent and characteristics of any possible Made Ground and underlying natural superficial deposits;
- to undertake in-situ geotechnical testing within these deposits;
- to obtain samples from these deposits for classification and laboratory testing; and
- to allow for the installation of ground gas and groundwater monitoring wells.



Figure 3: Extract of the exploratory hole location plan (SI-05)

The locations of the dynamic sampling boreholes are shown on the exploratory hole location plan in Appendix 2 and the dynamic sampling borehole logs are contained in Appendix 3.

2.2 Site Testing and Sampling

The following site tests and sampling were carried out:

- a) Retrieval of environmental samples and bulk disturbed samples from dynamic sampling sleeves for the purposes of chemical and geotechnical laboratory testing and classification.
- b) Where possible, in-situ and ex-situ shear strength testing was undertaken within fine grained material (clay) from the dynamic sampling borehole sleeve samples using a 19mm hand shear vane in accordance with BS1377-9.
- c) Standard Penetration Tests (SPTs) were undertaken at regular 1.00m intervals between 1.20m and 5.00m bgl within the dynamic sampling boreholes.

2.3 Laboratory Testing

2.3.1 Chemical Laboratory Testing

13 No. soil samples were obtained during exploratory hole construction and sent to i2 Analytical laboratories for chemical testing. These samples were placed into sterile sealed containers to facilitate MCERTS chemical laboratory testing of potential contaminants. Chemical testing suites are outlined below and are based upon the possible contaminative sources identified in the Phase 1 report.

Asbestos ID, sulfate, pH, nitrate, total and free cyanide, arsenic, barium, beryllium, boron, cadmium, chromium, chromium (hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc, total hydrocarbon screen, total petroleum hydrocarbon speciation (TPH-CWG), volatile organic compounds and speciated polyaromatic hydrocarbons.

2.3.2 Geotechnical Laboratory Testing

The following geotechnical laboratory tests were carried out on selected samples obtained from across the site:

- a) Determination of moisture content, liquid limit and plastic limit in accordance with BS1377 Part 2, Methods 3.2, 4.4 and 5.0 (1990).
- a) Determination of particle size distribution (PSD) with sedimentation in accordance with BS1377 Part 2:1990, clause 9.2.
- b) BRE Special Digest suite for aggressive ground conditions.

3.0 FINDINGS

3.1 Ground Conditions

The typical ground conditions encountered across the site are as follows:

- **Made Ground** comprising greyish brown, gravelly to very gravelly, slightly clayey to clayey, fine to coarse SAND to a depth of between 0.70m and 1.60m bgl (144.05 to 142.06m AOD), underlain by:
- **Glaciofluvial Deposits** comprising medium dense to dense, light brown and orangish brown, slightly gravelly to gravelly, slightly clayey, fine to coarse SAND with very thin to thick bands of soft to firm, brown mottled orange slightly gravelly, silty CLAY and soft, brown, slightly gravelly, slightly sandy SILT to a depth of at least 5.45m bgl (139.30m to 138.06m AOD)

Images of the typical Made Ground and Glaciofluvial Deposits are shown below:



Figure 4: Photographs of the typical Made Ground (left) and Glaciofluvial Deposits (right) encountered.

3.1.1 Notable Exceptions

The following notable exceptions to the aforementioned typical ground conditions were recorded:

- **Made Ground** comprising greyish brown, slightly clayey, ashy, subangular to subrounded, fine to coarse, subangular to subrounded, fine to coarse GRAVEL of red brick, metal, glass and ceramic was recorded in DS06 between 0.20m and 1.60m bgl (144.39m and 142.99m AOD), in DS07

between 0.20m and 0.35m (143.87m and 143.72m AOD) and in DS08 between ground level and 0.25m bgl (144.75m and 144.50m AOD).

- **Made Ground** comprising asphalt was recorded in DS00 between ground level and 0.25m bgl (144.14m and 143.89m AOD).
- **Glaciofluvial Deposits** comprising dense, sandy, rounded to well rounded, fine to coarse GRAVEL of mixed lithologies was encountered in DS01 between 4.50m and 5.45m bgl (139.01m and 138.06m AOD).

3.2 Visual and Olfactory Contamination Findings

During the intrusive exploratory hole investigation works, the soils were examined carefully for both visual and olfactory evidence of contamination.

Olfactory evidence of contamination was encountered in 1 No. exploratory hole only during the ground investigation; A hydrocarbon odour was recorded within Made Ground in DS05 between 0.20m and 1.20m bgl (143.85m to 142.85m AOD). However, ash and clinker was recorded within the Made Ground in 4 No. exploratory holes (DS01, DS03, DS05 and DS06).

3.3 Water Strikes

A water strike was only recorded in DS01 at a depth of 2.40m bgl (141.11m AOD) within Glaciofluvial Deposits comprising medium dense, slightly clayey, very silty, fine to coarse sand.

3.4 Conceptual Ground Model

The findings of the Phase 2 ground investigation works have been used to create a conceptual ground model of the site. The conceptual ground model demonstrates the consistent geological strata encountered across the site:

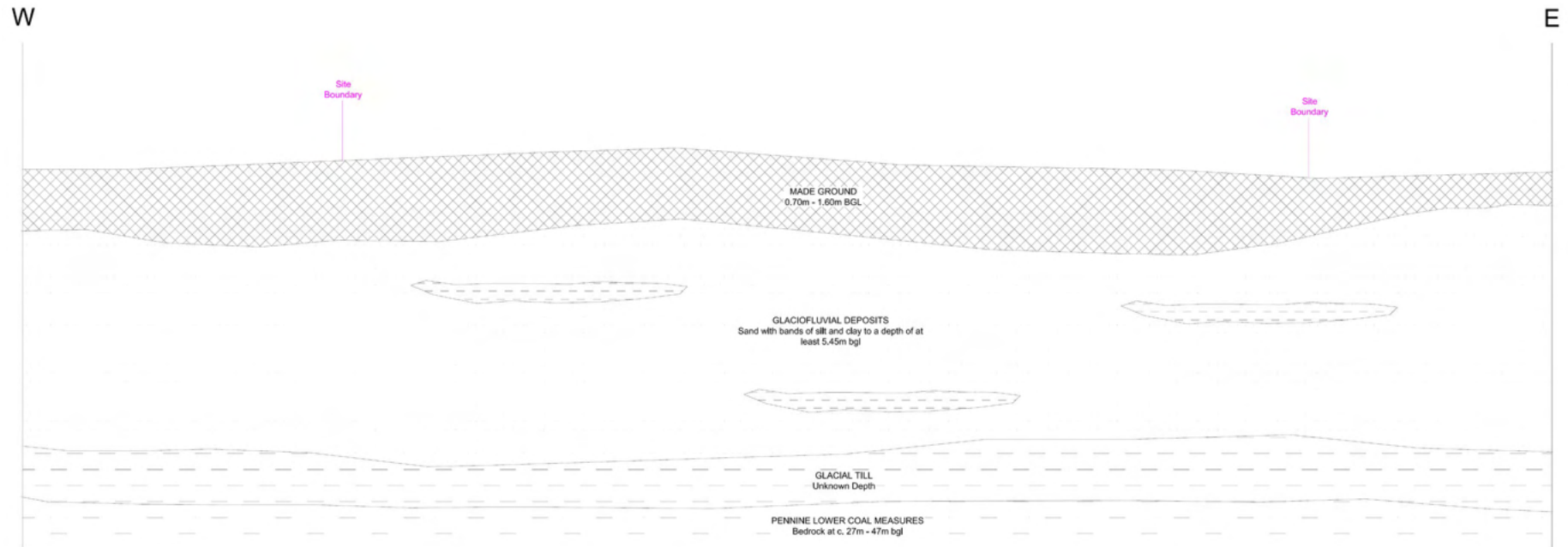


Figure 5: Extract of the conceptual ground model for the site

The detailed conceptual ground model is included in Appendix 2.

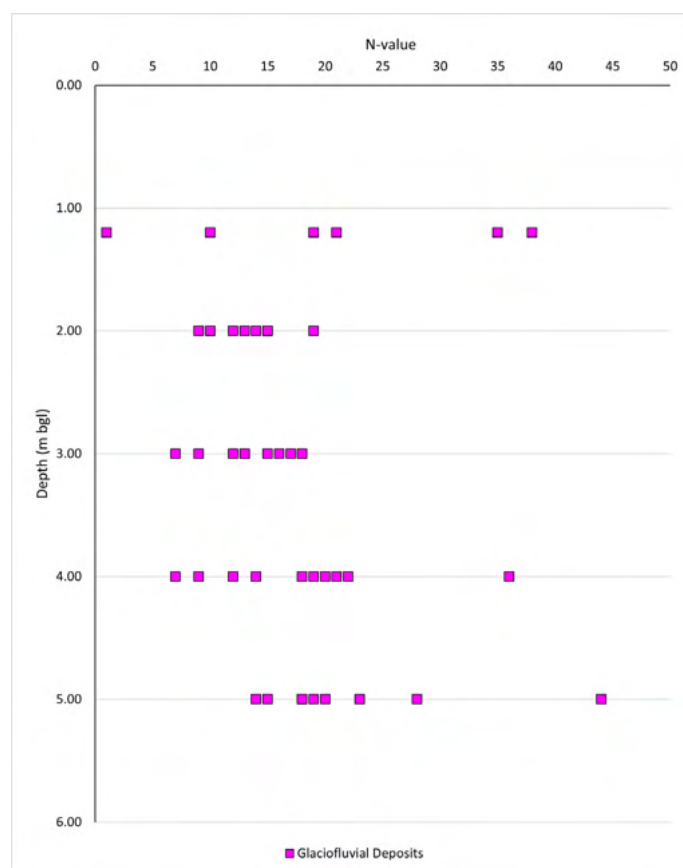
3.5 Geotechnical Site Testing

The results of the geotechnical testing undertaken during the ground investigation are summarised below.

3.5.1 Standard Penetration Tests

Standard penetration tests (SPTs) were undertaken at regular 1.00m intervals during the construction of the dynamic sampling boreholes.

The following scatter graph shows that there was a positive correlation between increasing uncorrected N-value with depth within the Glaciofluvial Deposits, however, the N-values were also noted to be variable, likely due to the variable bands of silt and clay within the sand. Only 3 No. SPTs were undertaken within the Made Ground, all were undertaken at a depth of 1.20m bgl and recorded N-values of between 3 and 6.



SPT results are included on the dynamic sample borehole logs presented in Appendix 3.

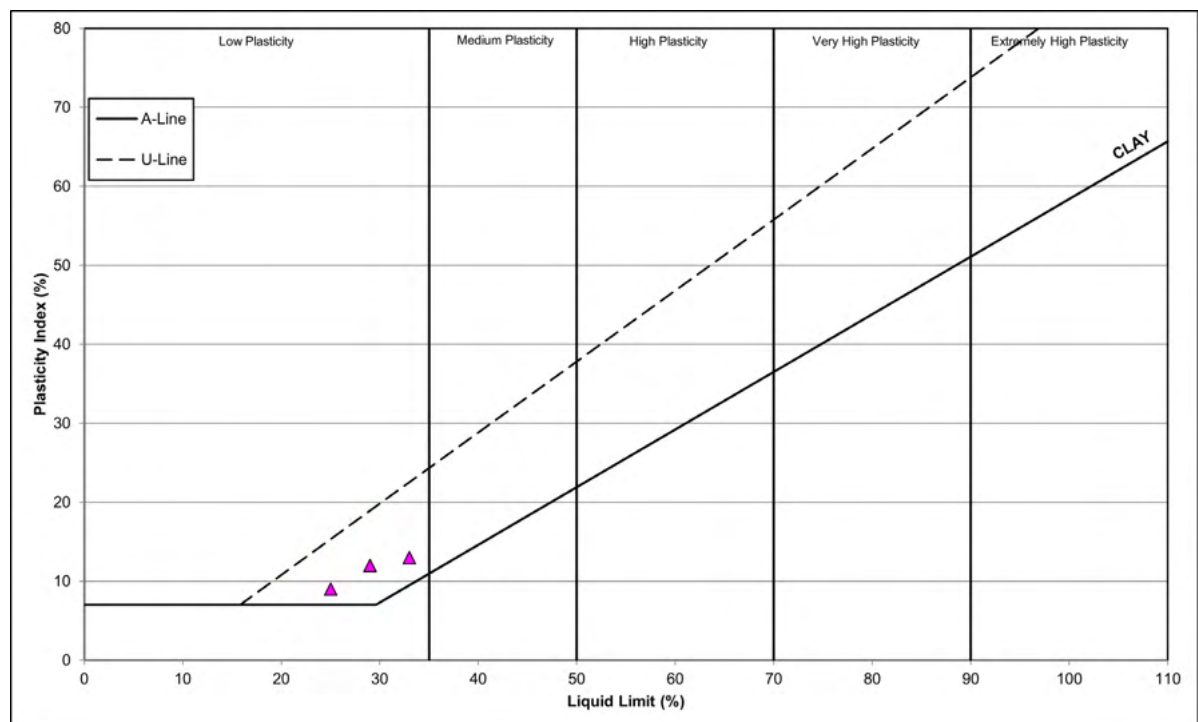
3.6 Geotechnical Laboratory Testing

The results of the geotechnical laboratory tests undertaken during the ground investigation are summarised below. The full geotechnical laboratory test results are included in Appendix 4.

3.6.1 Atterberg Limit Tests

Atterberg limit tests were undertaken on 4 No. samples from natural fine Glaciofluvial Deposits. The results of the Atterberg testing are as follows:

Sample	Sample Depth (m bgl)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Passing through 425 micron (%)	Modified Plasticity Index
DS02	1.40 – 1.60	16	25	16	9	85	8
DS05	2.10 – 2.50	17	33	20	13	86	11
DS07	2.10 – 2.90	14	29	17	12	85	10
DS09	2.00 – 2.60	17	29	17	12	98	12

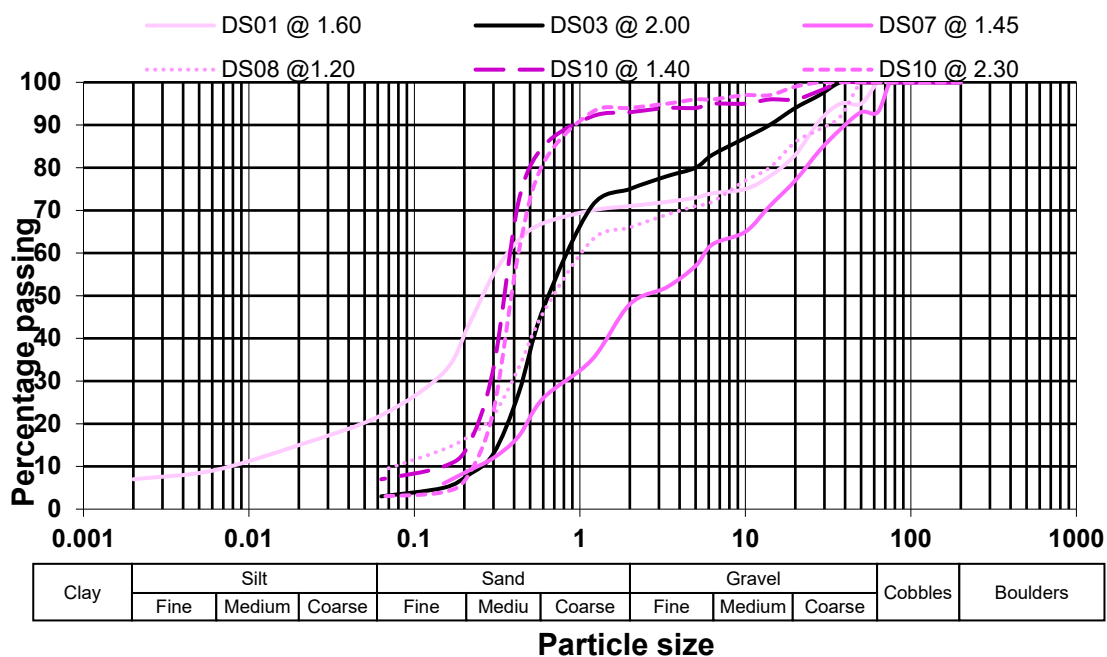


The Atterberg Limit tests indicate that the clay bands within the Glaciofluvial Deposits are generally of low plasticity in-line with BS14688 Part 2 and low volume change potential in-line with NHBC Chapter 4.2 guidance.

3.6.2 Particle Size Distribution and Sedimentation Testing

6 No. particle size distribution tests were undertaken on samples of Glaciofluvial Deposits from the southern section of the site

Exploratory Hole	Depth (m bgl)	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Cobbles (%)
DS01	1.60	7	15	49	24	5
DS03	2.00	3		72	25	0
DS07	1.45	6		46	41	0
DS08	1.20	9		57	34	0
DS10	1.40	7		86	7	0
DS10	2.30	3		91	6	0



3.6.3 BRE Special Digest Suite Testing

In accordance with BRE Special Digest 1: Concrete in Aggressive Ground (2005), the site has been classified as brownfield with mobile groundwater. BRE SD1 testing suites were undertaken on 3 No. samples of Made Ground and 3 No. samples of Glaciofluvial Deposits in order to determine the Design Sulfate (DS) levels and the Aggressive Chemical Environment for Concrete (ACEC), with the findings summarised below:

Sample	Depth (m bgl)	Strata	DS Class	ACEC Class
DS05	0.80	Made Ground	DS-1	AC-1
DS06	1.00	Made Ground	DS-2	AC-2
DS08	0.50	Made Ground	DS-1	AC-1
DS04	1.60	Glaciofluvial Deposits	DS-1	AC-1
DS05	1.35	Glaciofluvial Deposits	DS-2	AC-2
DS10	1.30	Glaciofluvial Deposits	DS-1	AC-2z

3.7 Environmental Laboratory Test Results

The findings of the chemical test results, summarised below, will be assessed against generic assessment criteria (GAC) for the purposes of screening allowable concentrations in comparison to the measured site concentrations. The GAC are defined based on the critical receptors identified at the site, detailed in the Phase 1 Investigation. Receptors are considered in relation to:

- Human health receptors (e.g. end-users, construction workers and the general public) via measured solid concentrations, and;
- Additional receptors which may be relevant e.g. flora/fauna, water, buried concrete.

The GAC adopted for assessment of soils in relation to Human Health are based on published LQM/CIEH S4ULs (2015) for those compounds for which published criteria are available for varying scenarios (residential, commercial, allotment, public open space). In the absence of LQM/CIEH S4ULs (2015) the following GAC defining documents are adopted - CL:AIRE Soil GAC for Human Health Assessment (2010) and Category 4 Screening Levels (C4SLs) (2014).

The primary risk to human receptors from free cyanide in soils is an acute risk (i.e. a single dose could have a lethal effect as opposed to adverse effects from cumulative intake (chronic effect)). There is no current UK guidance available for calculating acute risks from free cyanide, therefore an in-house methodology has been used to derive an acute GAC of 60 mg/kg for all exposure scenarios. The value is given for

Free or Easily Liberatable Cyanide but should be used to assess Total Cyanide in the absence of cyanide speciation. In cases where the Total Cyanide exceeds the GAC then analysis for Free or Easily Liberatable Cyanide should be completed.

Appendix 6 contains the full screening tables for 9 No. samples of Made Ground and 4 No. sample of Glaciofluvial Deposits. All results have been assessed against the relevant GACs for a **residential with home grown produce** scenario based on a measured organic matter content of **1%**.

3.7.1 Asbestos

An asbestos screen was performed on all samples of Made Ground. Asbestos in the form of chrysotile loose fibres at trace concentrations (<0.001%) was recorded in the Made Ground in DS07 at 0.30m bgl. Asbestos was not encountered in the remaining Made Ground samples.

3.7.2 Polycyclic aromatic hydrocarbons (PAHs)

Numerous exceedances of the sixteen PAH compounds were recorded within the Made Ground samples. The exceedances have been summarised in the below table:

Determinand	Location	Depth	Result (mg/kg)	GAC (mg/kg)
Naphthalene	DS06	1.00	2.40	2.30
Phenanthrene	DS05	0.50	100	95
Benzo(a)anthracene	DS01	0.20	16	7.20
	DS05	0.50	79	
	DS07	0.30	42	
Chrysene	DS01	0.20	16	15
	DS05	0.50	85	
	DS07	0.30	41	
Benzo(b)fluoranthene	DS01	0.20	21	2.6
	DS05	0.50	90	
	DS06	1.00	4.9	
	DS07	0.30	44	
	DS07	0.70	7.1	
Benzo(a)pyrene	DS01	0.20	18	2.20

	DS05	0.50	72	
	DS05	0.80	2.3	
	DS06	1.00	4.6	
	DS07	0.30	39	
	DS07	0.70	6.1	
Indeno(1,2,3-cd)pyrene	DS05	0.50	30	27
Dibenz(a,h)anthracene	DS01	0.20	1.7	0.24
	DS05	0.50	8.4	
	DS05	0.80	0.26	
	DS06	1.00	0.57	
	DS07	0.30	5.7	
	DS07	0.70	0.66	

3.7.3 Metals and metalloids

Numerous exceedances of lead were recorded within Made Ground in the following locations:

Determinand	Location	Depth	Result (mg/kg)	GAC (mg/kg)
Lead	DS01	0.20	680	200
	DS03	0.60	1100	
	DS05	0.50	600	
	DS06	1.00	2100	
	DS07	0.30	330	
	DS10	0.15	210	

No other exceedances were recorded.

3.7.4 Total Petroleum Hydrocarbons (TPH)

TPH compounds were recorded in excess of the laboratory detection limit within Made Ground samples, with elevated concentrations of total TPH (1100mg/kg and 920mg/kg) being recorded in 2 No. Samples of Made Ground (DS01 at 0.20m and DS07 at 0.30m bgl). TPH speciation (TPH-CWG) was undertaken on some samples of Made Ground; a single exceedance for the TPH fraction aromatic C16 – C21 was

recorded where 580mg/kg was recorded compared to a GAC of 260mg/kg for the TPH fraction.

3.8 Ground Gas Monitoring

The following dynamic sampling boreholes were installed with a standpipe to allow for monitoring of ground gas concentrations and any underlying groundwater which may be present:

Exploratory Hole	Response Zone Stratum	Response Zone Depth m bgl (m AOD)	
		Top of Response Zone	Base of Response Zone
DS01	Glaciofluvial Deposits comprising medium dense, brown, slightly gravelly to very gravelly, slightly clayey, silty, fine to medium SAND	2.00 (141.51)	3.00 (140.51)
DS04	Glaciofluvial Deposits comprising loose to medium dense, brown, slightly clayey, fine to coarse SAND, soft to firm, light brown mottled orange, slightly gravelly, sandy CLAY and light orangish brown, sandy SILT.	2.00 (142.16)	4.00 (140.16)
DS05	Glaciofluvial Deposits comprising medium dense, light brown, slightly gravelly, silty, fine to medium SAND and soft, brown, slightly gravelly, slightly sandy SILT	3.00 (141.05)	4.00 (140.05)

The monitoring wells are constructed of 51mm diameter HDPE plain pipe to the depth of the response zone. The response zones comprise slotted pipe surrounded by a gravel annulus which are sealed above and below with hydrated bentonite seals. The monitoring wells are topped with a flush lockable cover.

6 No. visits out of a scheduled programme of 6 No. visits have been completed; the results have been summarised below:

Gas Monitoring Well	Steady O ₂ Concentration (%)	Peak CO ₂ Concentration (%)	Peak CH ₄ Concentration (%)	Peak H ₂ S Concentration (ppm)	Atmospheric Pressure (mbar)	Steady Gas Flow (l/hr)
DS01	2.9 – 18.9	0.3 – 11.3	<0.1	<1.0	974 - 1010	<0.1
DS04	15.1 – 20.0	<0.1 – 4.5	<0.1	<1.0	973 - 1010	<0.1
DS05	16.0 – 18.6	3.2 – 4.5	<0.1	<1.0	972 - 1010	<0.1

Ground gas monitoring was undertaken utilising a GFM 4300 gas analyser. The blue cells indicate a flooded response zone.

It should be noted that the response zone of DS01 was mostly to completely flooded during all ground gas monitoring visits therefore the data is deemed unreliable and are not included in the following assessment.

The ground gas monitoring results and calibration certificate are included in Appendix 8.

3.9 Groundwater Depth Monitoring

The above wells were also installed for the purposes of groundwater depth monitoring. Groundwater monitoring is ongoing, however, after 6 No. visits the following range of results has been recorded:

Groundwater Monitoring Well	Response Zone (m bgl)	Water Level (m bgl)	Remarks
DS01	2.00 – 3.00	1.99 - 2.33	DS01 bailed during each visit, recharge noted.
DS04	2.00 – 4.00	Dry – 3.78	-
DS05	3.00 – 4.00	Dry	-

The groundwater monitoring results are included with the gas monitoring results in Appendix 8.

4.0 ENVIRONMENTAL CONCLUSIONS

4.1 Assessment of Environmental Results

Soil sample analyses have assessed the presence of contaminants on a spatial basis, and the concentrations at which they occur across the site.

Numerous GAC exceedances for the '*residential with home grown produce*' land use scenario were recorded within the Made Ground, including PAHs, metals and TPH. No GAC exceedances were recorded within the underlying natural Glaciofluvial Deposits.

A hydrocarbon odour was recorded within Made Ground in DS05 between 0.20m and 1.20m bgl (142.85m – 143.85m AOD). Ash and clinker was recorded within the Made Ground in 4 No. exploratory holes (DS01, DS03, DS05 and DS06).

The existing natural subsoil is anticipated to be suitable for re-use within the proposed development, subject to further testing during earthworks. No topsoil is present on site.

The original conceptual models produced in the IGE Consulting *Phase 1 Geo-Environmental Investigation Report* have been revised / updated using the findings from the Geo-Environmental Ground Investigation.

4.2 Conceptual Model for Human Health Risk

The possible sources of contamination identified within the Phase 1 report include:

- Made Ground;
- Historical greenhouses (Pre 1930s);
- Off-site current and historical garages (western site boundary); and
- Off-site historical gas works (190m North West).

The human health receptors identified within the Phase 1 report include:

- End users (residential land use scenario);
- Construction workers; and

- The general public and adjacent site users.

The human health pathways identified within the Phase 1 report include:

- Ingestion of dust and soil;
- Dermal contact with dust and soil;
- Inhalation (dust);
- Inhalation (vapours);
- Consumption of homegrown produce; and
- Inhalation and oral backgrounds.

Made Ground was encountered across the site to depths of between 0.70m and 1.60m bgl. Numerous human health GAC exceedances were recorded within the Made Ground including PAHs, metals and TPH. Consequently, the Made Ground across the site remains a contaminative source.

Although herbicides and pesticides were identified as potential contaminants of concern associated with the historical greenhouse on site, a herbicide and pesticide screen was not undertaken as the greenhouses have not been present since between the 1910s and 1930s. If herbicides or pesticides were historically used, they would have been used locally within the greenhouse rather than being spread onto the soil site wide. Additionally, they are not likely to include the persistent organochloride pesticides such as Dieldrin, Aldrin, DDT etc. as these have been phased out. Pesticides and herbicides routinely used in the UK degrade in soils or leach via rainwater infiltration to groundwater. The greenhouses have also not been recorded on site for almost 100 years therefore the presence of residual determinands is unlikely. Consequently, the presence of herbicides and pesticides is not considered a significant risk especially given the time since the greenhouses were present and as no topsoil or similar stratum is present.

A hydrocarbon odour was recorded in the Made Ground in DS05 and elevated concentrations of TPH were recorded within Made Ground in DS01 and DS07. Although no significant evidence of contamination migration was noted (i.e. hydrocarbon free product), all 3 No. exploratory holes where hydrocarbons were

noted are located in the western site section. Therefore, migration from the off-site historical and current garage cannot be discounted.

Given the distance between the site and the historical gas works, the migration of contaminants onto site is considered unlikely.

4.2.1 Human Health Conclusions

Based on the above revised conceptual site models, the site is considered to pose a **moderate risk** to human health of site occupants and construction workers as contamination linkages have been identified. Therefore, remedial measures will be required.

Any potential increase in risk to construction workers associated with acute interaction with soils can be mitigated with appropriate PPE and health and safety procedures.

4.3 **Conceptual Model for Ground Gas Risk**

Potential ground gas sources identified within the Phase 1 report include:

- Made Ground; and
- Off-site Mandale Park Landfill (435m south, 1908 – 1992).

Potential ground gas pathways identified within the Phase 1 report include:

- Migration through fractures and fissures in bedrock;
- Preferential migration along foundations & service ducts;
- Migration within groundwater;
- Ingress through cavity walls & floors; and
- Inhalation.

Potential ground gas receptors identified within the Phase 1 report include:

- End Users (residential land use scenario);
- Construction workers; and
- The general public and adjacent site users.

Made Ground was encountered across the site to depths of between 0.70m and 1.60m bgl. Total organic carbon concentrations of between 1.6% and 4.8% were recorded within the Made Ground samples, with the higher TOC content pertaining to samples with higher concentrations of TPH and PAHs rather than degradable material. Although the Made Ground does not contain a significant quantity of degradable material, it remains a ground gas risk but is considered to be low risk.

Given the granular nature of the superficial deposits beneath the site and in the vicinity, ground gas migration from the off-site landfill is considered unlikely as migration is likely to be vertical into atmosphere rather than lateral migration to the site. Additionally, numerous preferential pathways such as service trenches exist between the site and the landfill.

During the 6 No. ground gas monitoring visits undertaken, no methane or steady flow rates above detection limits (0.1% and 0.1l/hr) were recorded, however, elevated concentrations of carbon dioxide were recorded with a maximum concentration of 11.3% recorded in DS01. However, the response zone of DS01 was flooded during all visits therefore the ground gas monitoring results are deemed unreliable in accordance with BS8485 (2015) +A1 (2018) therefore have been discounted from the below assessment. Carbon dioxide concentrations of 4.5% were recorded in DS03 and DS04 and both wells were noted to be dry.

4.3.1 Gas Screening Value

The results of the 6 No. ground gas monitoring visits have been assessed in accordance with BS 8485 (2015) + A1 (2019). The characteristic Gas Screening Value (GSV) is calculated by dividing the maximum methane or carbon dioxide concentration by 100 and multiplying by the maximum steady flow rate recorded at the same monitoring point (the instrument detection limit of 0.1 l/hr is utilised when below detection limit flow rates are recorded). If required, the worst case GSV can be calculated by dividing the maximum carbon dioxide and methane concentration by 100 and multiplying by the maximum steady flow rate on-site.

Ground gas monitoring has recorded a maximum peak carbon dioxide concentration of 4.5% v/v in DS01. No steady flow rates above detection limits were recorded.

As no steady flow rates were recorded on site, the GSV and the worst case GSV for carbon dioxide at the site can be calculated as $(4.5/100)*0.1 = 0.0045\text{l/hr}$.

4.3.2 Ground Gas Conclusions

Consequently, the ground gas risk on-site is deemed to be **very low** and in-line with Characteristic Situation 1 (CS1). Although concentrations of carbon dioxide above 5% were recorded, based on the conceptual site model an increase to Characteristic Situation 2 is not deemed necessary. Therefore, no ground gas protection measures are deemed necessary in the proposed development, in-line with BS8485 + A1 (2019).

4.3.3 Radon

A site-specific radon map is included in the Groundsure Enviro + Geo Insight report within the IGE *Phase 1 Geo-Environmental Report* (Ref: 3931-01, dated September 2024) which finds that the site lies within an area where less than 1% of homes are above the Action Level and consequently, no radon protection measures are required.

4.4 **Conceptual Model for Controlled Waters Risk**

The possible sources of contamination identified within the Phase 1 report include:

- Made Ground; and
- Historical Greenhouses (Pre 1930s).

The controlled water receptors identified within the Phase 1 report include:

- Groundwater contained within the underlying Secondary A Aquifers; and
- Surface water – off-site river roch (324m north).

The controlled waters pathways identified within the Phase 1 report include:

- Vertical migration through coarse Made Ground and coarse soils;
- Lateral migration along low permeability natural soils & pooling at relative low points;
- Vertical migration along existing and future foundations and pooling at base;

- Migration through porous bedrock;
- Migration within groundwater; and
- Overland flow.

Made Ground was encountered across the site to depths of between 0.70m and 1.60m bgl. Elevated concentrations of metals, PAHs and TPH were recorded within the Made Ground as well as a hydrocarbon odour in the Made Ground in DS05. Therefore, the Made Ground remains a potentially contaminative source.

Given the granular nature of the Made Ground and as most of the shallow natural superficial deposits are granular, feasible vertical pathways have been identified to the underlying aquifers. However, the contaminants of concern are of relatively low solubility and mobility and are not present at a high enough concentration to cause a contaminative plume. The chemical test results within the underlying natural deposits concur with this as there are no elevated concentrations of determinands recorded indicating that migration is not occurring. The Made Ground and the shallow superficial deposits are also unsaturated, further reducing the likelihood of migration.

It should also be noted that a significant thickness of superficial deposits is anticipated beneath the site to between 27m and 47m bgl, comprising Glaciofluvial Deposits underlain by low permeability Glacial Till, which will further reduce the likelihood of vertical migration into the underlying bedrock aquifer.

Lateral migration and overland flow to the surface water receptor is considered highly unlikely given the distance between the site and the receptor and the nature of the underlying ground conditions which will facilitate vertical migration rather than lateral migration.

4.4.1 Controlled Waters Conclusions

The risk to controlled waters is deemed **low** due to a lack of feasible contaminative linkages having been identified. No further assessment or remedial measures are considered necessary.

4.5 Conceptual Model for Building Materials & Services

In accordance with BRE Special Digest 1: Concrete in Aggressive Ground (2005), the site has been classified as brownfield with mobile groundwater, the soils have been classified as Design Sulfate level DS-1 and DS-2 and subsequently within the Aggressive Chemical Environment for Concrete (ACEC) classification of AC-1, AC-2 and AC-2z. Therefore, special precautions are required regarding the use of concrete within the Made Ground and Glaciofluvial Deposits.

The chemical laboratory testing results are contained within Appendix 5.

4.6 Outline Remedial Strategy

As discussed in section 4.2.1, due to the human health GAC exceedances for the residential with plant uptake scenario recorded within the Made Ground on-site as well as the presence of asbestos, remedial measures are required for the proposed development. A clean cover system will be required in all private gardens and areas of soft landscaping in order to break the contaminative linkages. Details of the required clean cover system are included below.

Ground as protection measures are not deemed necessary

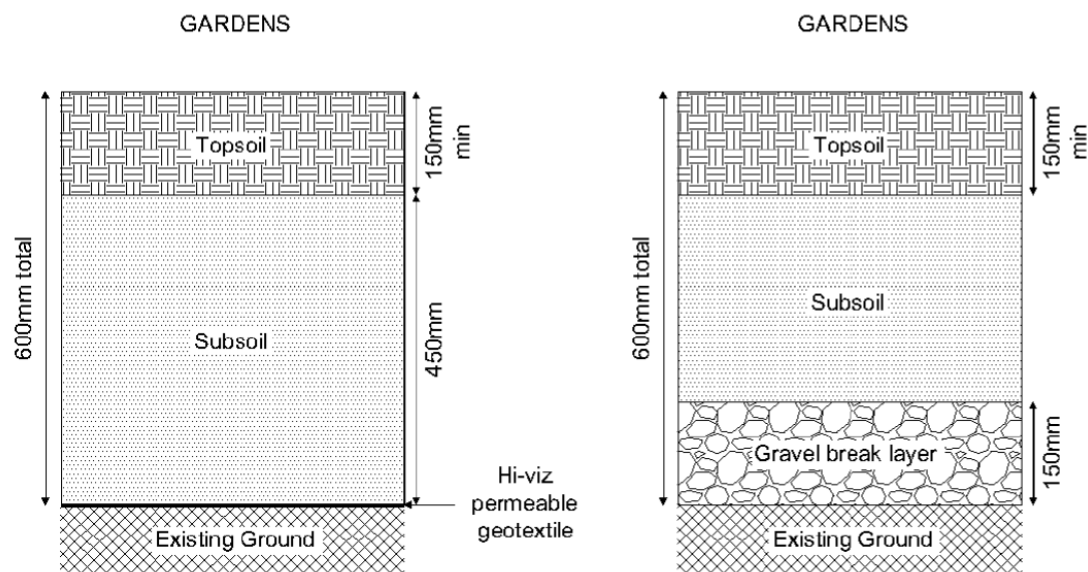
4.6.1 Clean Cover System

The cover system for the private rear gardens is to be 600mm thick and consist of:

- A minimum of 150mm up to a maximum of 300mm suitable topsoil, underlain by:
- Suitable subsoil, to a total thickness of 600mm, underlain by:
- A hi viz permeable geotextile.

Currently the proposed plan does not include any front gardens, however, if the proposed plan changes it is the client's preference to install 600mm cover systems within the front gardens. The Client's build methodology will comprise 150mm topsoil underlain by 450mm subsoil.

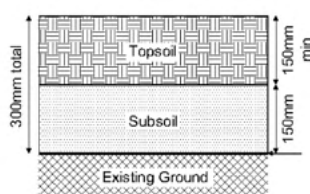
This is shown diagrammatically below:



The cover system for the POS_{resi} is to be 300mm thick, due to the presence of asbestos on site, and consist of:

- A minimum of 150mm up to a maximum of 300mm suitable topsoil, underlain by:
- Suitable subsoil, if required, to a total thickness of 300mm, underlain by:
- A hi viz permeable geotextile.

This is shown diagrammatically below:



Soils for use in the above recommended cover system must be validated as detailed below to ensure their suitability for use.

Clean Cover System Validation

The installation of the clean cover system must be verified. Once the clean cover system has been installed, validation requirements include:

- Details of the source of the cover material;

- Visual inspection to determine the absence of deleterious anthropogenic constituents;
- Waste transfer notes to provide evidence of source (of imported soils);
- Confirmation of cover depth by physical measurement with photographs at the following frequency:
 - Three pits within the POS_{resi} ('amenity space'); and
 - One pit per three plots across all private rear gardens.

No topsoil is present on site therefore all topsoil will need to be imported. Based on the initial chemical test results, the underlying natural subsoils are deemed suitable for re-use subject to further testing in-line with the below.

Imported topsoil and subsoil is required to be tested at source prior to import to confirm suitability. All topsoil and subsoil, whether site-won or imported is required to be tested at the following frequency:

Type	Number of Samples	Testing Schedule	Assessment Criteria
Virgin Quarried Material	1 or 2 depending on the type of stone utilised, to confirm the inert nature of the material.	Standard metals/metalloids (should include as a minimum As, Cd, Cr, CrVI, Cu, Hg, Ni, Pb, Se, Zn)	S4UL and C4SL GACs for a 'residential without plant uptake' end use
Crushed Hardcore, Stone, Brick (excluding asphalt)	Minimum 1 per 500m ³	Standard metals/metalloids (as above), PAH (16 USEPA speciation), asbestos, total TPH. Any additional analysis dependant on the history of the donor site (e.g. phenol, total cyanide, BTEX, MTBE)	
Greenfield/ Manufactured Soils	1 per 200m ³ Minimum 3	Standard metals/metalloids (as above), PAH (16 USEPA speciation), asbestos, pH and soil organic matter (SOM) (or calculated from total organic carbon (TOC)).	
Brownfield/ Screened Soils (including on-site Topsoil)	1 per 50m ³ Minimum 6	Standard metals / metalloids (as above), PAH (16 USEPA speciation), TPH (CWG banded), asbestos, pH and SOM (or calculated from TOC). Any additional analysis dependant on the history of the donor site (e.g. phenol, total cyanide, BTEX, MTBE)	

The following validation samples should be taken:

Soil	Testing Frequency	Testing Suite	Acceptability Criteria
Imported topsoil	Greenfield source 1 per 200m ³ Brownfield source 1 per 50m ³	A, B, C, D, F, H	IGE Acceptability Criteria for appropriate area of the site (gardens / POS / soft landscaping) – see below.
Imported subsoil	Greenfield source 1 per 200m ³ Brownfield source 1 per 100m ³	A, B, C, D, F	IGE Acceptability Criteria for appropriate area of the site (gardens / POS / soft landscaping) – see below.

- 1) Minimum 3 samples regardless of volume.
- 2) In addition to the standard suites given, the laboratory testing suite should include any additional contaminants of concern based on the source of the samples.
- 3) Imported topsoil and subsoil is also required to be tested at source prior to import to confirm suitability.

Testing Suites:

- A. Asbestos ID, Asbestos quantification.
- B. pH, total and free cyanide, soluble sulfate, TOC.
- C. Arsenic, Beryllium, Boron, Cadmium, Chromium (III and VI) Copper, Lead, Inorganic Mercury, Nickel, Selenium, Vanadium, Zinc.
- D. Speciated PAHs: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(ghi)perylene.
- E. Total (non-speciated) PAHs.
- F. Speciated Total Petroleum Hydrocarbons (TPH): Aliphatic >EC5 - EC6, >EC6 - EC8, >EC8 - EC10, >EC10 - EC12, >EC12 - EC16, >EC16 - EC21, >EC21 - EC35, and > EC35 - EC44, and Aromatic >EC5 - EC7, >EC7 - EC8, >EC8 - EC10, >EC10 - EC12, >EC12 - EC16, >EC16 - EC21, >EC21 - EC35, >EC35 - EC44.
- G. Total Petroleum Hydrocarbons (TPH): TPH EC6 – EC40.
- H. BTEX: Benzene, Toluene, Ethylbenzene, p- & m-xylene, o-xylene. Methyl tertiary butyl ether (MTBE).

Once tested, the results are to be compared against the following Acceptability Criteria:

Suite	Determinant (mg/kg unless stated)	Acceptability Criteria for:		
		Private Gardens	Public Open Space (residential)	Soft Landscaping or Public Open Space (Park)
A	Asbestos (%)	ND	ND	ND
B	pH	>6 - <8 ⁽³⁾	>6 - <8 ⁽³⁾	>6 - <8 ⁽³⁾
	Total Cyanide	0.5 ⁽³⁾	0.5 ⁽³⁾	0.5 ⁽³⁾
	Free Cyanide	0.5 ⁽³⁾	0.5 ⁽³⁾	0.5 ⁽³⁾
	Soluble Sulfate (mg/l)	500 ⁽³⁾	500 ⁽³⁾	500 ⁽³⁾
C	Arsenic	37	79	170
	Beryllium	1.7	2.2	63
	Boron	290	21000	46000
	Cadmium	11	120	560
	Chromium (III)	910	1500	33000
	Chromium (VI)	6	7.7	220
	Copper	2400	12000	44000
	Lead	200 ⁽¹⁾	630 ⁽¹⁾	1300
	Inorganic Mercury	40	120	240
	Nickel	130	230	800
	Selenium	250	1100	1800
	Vanadium	410	2000	5000
	Zinc	3700	81000	170000
	Naphthalene	2.3	4900	1200
D	Acenaphthylene	170	15000	29000
	Acenaphthene	210	15000	29000
	Fluorene	170	9900	20000
	Phenanthrene	95	3100	6200

	Anthracene	2400	74000	150000
	Fluoranthene	280	3100	6300
	Pyrene	620	7400	15000
	Benzo(a)anthracene	7.2	29	49
	Chrysene	15	57	93
	Benzo(b)fluoranthene	2.6	7.1	13
	Benzo(k)fluoranthene	77	190	370
	Benzo(a)pyrene	2.2	5.7	11
	Indeno(1,2,3-cd)pyrene	27	82	150
	Dibenz(a,h)anthracene	0.24	0.57	1.1
	Benzo(ghi)perylene	320	640	1400
E	Total PAHs			
F	TPH-CWG - Aliphatic >EC5 - EC6	42	570000	95000
	TPH-CWG - Aliphatic >EC6 - EC8	100	600000	150000
	TPH-CWG - Aliphatic >EC8 - EC10	27	13000	14000
	TPH-CWG - Aliphatic >EC10 - EC12	130	13000	21000
	TPH-CWG - Aliphatic >EC12 - EC16	1100	13000	25000
	TPH-CWG - Aliphatic >EC16 - EC21			
	TPH-CWG - Aliphatic >EC21 - EC35	65000	250000	450000
	TPH-CWG - Aliphatic > EC35 - EC44	65000	250000	450000
	TPH-CWG - Aromatic >EC5 - EC7	70	56000	76000
	TPH-CWG - Aromatic >EC7 - EC8	130	56000	87000
	TPH-CWG - Aromatic >EC8 - EC10	34	5000	7200
	TPH-CWG - Aromatic >EC10 - EC12	74	5000	9200
	TPH-CWG - Aromatic >EC12 - EC16	140	5100	10000
	TPH-CWG - Aromatic >EC16 - EC21	260	3800	7600
	TPH-CWG - Aromatic >EC21 - EC35	1100	3800	7800
	TPH-CWG - Aromatic > EC35 - EC44	1100	3800	7800
G	TPH > EC6 - EC40			
H	Benzene	0.087	72	90
	Toluene	130	56000	87000*
	Ethylbenzene	47	24000	17000*
	p & m-xylene	56	41000	17000***
	o-xylene	60	41000	17000*
	MTBE (Methyl Tertiary Butyl Ether)	LOD ⁽³⁾	LOD ⁽³⁾	LOD ⁽³⁾

LQM/CIEH S4ULs for Human Health Risk Assessment (3rd edition, 2015) used unless stated:

- 1) Category 4 Screening Levels (March 2014)
- 2) CL:AIRE Soil GAC for Human Health Assessment (January 2010)
- 3) In-house screening criteria used as no GAC methodology currently exists
- 4) Hazardous waste thresholds. This limit only applies to imported material, not to in-situ soil.

Assumed 1% SOM (most conservative) for those values dependent upon SOM.

ND = Not Detected

LOD = Limit of Detection

*Exceeds vapour saturation limit

**Exceeds solubility saturation limit

The above acceptability criteria for PAHs for imported topsoil and subsoil are based on the published LQM/CIEH S4ULs (2015) for each individual PAH and not based on the Category 4 Screening Level using BaP as a surrogate marker. This is as the source of the imported material is unknown therefore using the surrogate marker approach may not be suitable as the distribution of PAHs in the imported material may not be similar to those in the Culp et al. (1998)¹ study. Once chemical testing had been undertaken on imported soil and the distribution of PAHs compared to the distribution in the Culp et al. (1998) study, it may be suitable to use the surrogate marker approach / C4SL.

Once complete, the information gathered should be compiled into a Validation Report for the site detailing the completion of the remedial and verification measures.

Clean Cover System Verification Report

The verification report shall include, as a minimum, the following:

- Site Name / location, developer name, development use

¹ Culp et al. (1998), *A comparison of the tumors induced by coal tar and benzo[a]pyrene in a 2-year bioassay*, Carcinogenesis, vol.19, no.1, pp.117–124.

- Plot No / description of landscaped area (incl. plan of inspection areas) and National Grid Reference
- Inspection visit date
- Description of remediation (as per agreed Remediation Strategy including depths / thickness checks, topographical readings)
- Material tracking information (including way tickets etc.)
- Name of groundwork's remediation contractor
- Name of supervising environmental consultant
- Site Specific chemical analysis results
- Verification Photographs (inc. remarks)
- Pass/fail and if material fails, how will this be managed i.e. removed, treated
- Detail any further remedial works and/or inspection
- 'Signed off'

4.6.2 Asbestos and Dust Management

Asbestos in the form of chrysotile loose fibres (<0.001%) was recorded in a Made Ground sample. Consequently, based on the findings of the chemical laboratory test results, a risk assessment has been undertaken for the made ground using the *JIWG Decision Support Tool for the Categorisation of Work Activities Involving Asbestos in Soil or Construction & Demolition Materials in accordance with CAR 2012* (FINAL Version 2.1, March 2017).

The risk assessment for the made ground has been undertaken based on the worst-case scenario; identified <0.001% chrysotile loose fibres.

The risk assessments were undertaken separately, however, resulted in the same conclusion. The JIWG risk assessment, concludes that the widespread and reservoir made ground and the stockpile material is suitable for re-use in the proposed development outside of private gardens are areas of soft landscaping (i.e. beneath hardstanding or beneath a cover system). According to the above risk assessment, **control of asbestos regulations (CAR) do not apply to the re-use of the Made Ground** and no dust suppression or decontamination is required. However, care should be taken during earthworks as possible asbestos containing material (ACM) may be present within the Made Ground.

5.0 GEOTECHNICAL CONCLUSIONS

5.1 Geotechnical Assessment of Ground Conditions

The intrusive investigation works have revealed that the ground conditions at the site generally comprise Made Ground underlain by Glaciofluvial Deposits.

The principal strata identified are outlined in further detail below.

5.1.1 Made Ground

Made Ground was recorded in every exploratory hole and was recorded to be relatively consistent, comprising greyish brown, gravelly to very gravelly, slightly clayey to clayey, fine to coarse SAND to a depth of between 0.70m and 1.60m bgl (142.06m – 144.05m AOD). The Made Ground is not considered a suitable founding stratum for even lightly loaded structures and will not be considered further.

5.1.2 Glaciofluvial Deposits

Glaciofluvial Deposits were encountered beneath the Made Ground in each exploratory hole comprising medium dense to dense, light brown and organism brown, slightly gravelly to gravelly, slightly clayey, silty, fine to coarse SAND with very thin to thick bands of soft to firm, brown mottled orange slightly gravelly, silty CLAY and soft, brown, slightly gravelly, slightly sandy SILT to a depth of at least 5.45m bgl (139.30m to 138.06m AOD)

47 No. SPTs were undertaken in this stratum recording N-values of between 1 and 44 (average 17) which increased with depth. The N-values were recorded to increase with depth but were noted to be variable due to the presence of bands of silt and clay. The N-value of 1 was recorded in DS08 at 1.20m bgl with no clear reason for the low N-value, the remaining SPTs resulted in N-values of 7 and higher.

4 No. Atterberg tests were undertaken on samples of fine-grained Glaciofluvial Deposits which indicated that they are clays of low plasticity and low volume change potential. As the bands of clay were thin and no reliable hand shear vanes could be undertaken within the bands, a correlation between plasticity index and undrained shear strength has not been undertaken.

6 No. particle size distribution tests were undertaken within the Glaciofluvial Deposits, one with sedimentation. The tests indicated that the deposits were mostly sand with varying proportions of fine clay and silt and gravel.

5.2 Groundwater

Groundwater was only recorded in 1 No. dynamic sample borehole during the ground investigation, in DS01 at 2.40m bgl. During subsequent ground gas monitoring visits, groundwater was recorded at depths of between 1.99m and 2.33m bgl in DS01. DS03 and DS04 were noted to be dry during the ground investigation. DS04 was noted to be dry during all subsequent ground gas monitoring visits. DS03 was also noted to be dry during visits 1 to 4, with groundwater recorded at 3.78 and 3.77m bgl during visits 5 and 6.

Consequently, significant groundwater control is not anticipated to be required for excavation work, however, it is advised that localised groundwater control is allowed for.

5.3 Foundations

Based on existing site levels, the shallow Glaciofluvial Deposits are considered a suitable founding stratum for the proposed low-rise development.

Plots 1 – 4

For the low-rise houses (plots 1 – 4) mass fill trench foundations are deemed suitable at depths of between 1.40m and 1.80m bgl. Assuming a traditional mass fill trench foundation of 600mm width lain at least 200mm into the suitable founding strata, a minimum allowable net bearing pressure of 125kN/m² (125kN load) with differential settlement less than 25mm should be readily achievable, achieving the required direct load of 60kN/m and live load of 40kN/m as specified by the structural engineers.

Apartment Block

For the apartment block mass fill trench foundations are deemed suitable at depth of 2.00m bgl. Very loose deposits (N-value of 1) have been recorded between 0.70m

and 2.00m bgl in DS08 therefore it is considered prudent to extend the foundations to 2.00m bgl into medium dense deposits.

Assuming a traditional mass fill trench foundation of 600mm width lain at least 200mm into the suitable founding strata, a minimum allowable net bearing pressure of 125kN/m² (125kN load) with differential settlement less than 25mm should be readily achievable, achieving the required direct load of 110kN/m and live load of 50kN/m as specified by the structural engineers.

Due to the presence of loose deposits as well as thin bands of soft clay and silt, it is recommended that all foundations (plots and apartment block) are reinforced.

Alternatively, the use of piled foundations or ground improvement via vibratory stone columns are also deemed suitable. Based on the required theoretical trench depths, it is the clients preferred option to utilise vibratory stone columns for the apartment block and the plots 1 – 4 which is deemed a suitable approach based on consultation with a specialist contractor. The specialist contractors have stated that VSC treatment will provide the necessary uniformity to achieve the minimum bearing capacity of up to 150kN/m².

It is recommended that any localised 'soft spot' areas encountered during excavation works should be removed and foundations extended down to suitable formation strata. To minimise issues with potential differential settlement of the foundation structure, it is recommended that foundations are not constructed upon more than one stratum type, as delineated within the exploratory hole logs. Where silt or clay bands are encountered, the foundation should be extended to beneath the band.

Heave precaution and foundation deepening will not be required given the primarily granular nature of the shallow deposits on site. It is recommended that a detailed foundation zoning plan is undertaken once finalised proposed levels and loadings are confirmed.

An assessment of the impact of existing services upon the proposed foundations should be made before selecting a final foundation solution.

5.4 Floor Slabs

Based on existing site levels, it is envisaged that in line with NHBC Guidance, suspended floor slabs will be required due to the presence of greater than 600mm of Made Ground. It is the client's intention to utilise beam and block suspended floor slabs which is in-line with the guidance.

5.5 Earthworks and External Areas

5.5.1 Highways and External areas

Given the granular nature of the Made Ground and Glaciofluvial Deposits, it is envisaged that any soft spots can be re-engineered, therefore the hard-surfaced external works including the access road and pavements may be constructed on proof-rolled Made Ground or natural sub-grade formations across the site dependent on proposed levels, achieving a CBR in excess of 5%. Following completion of an engineering earthworks specification, it is recommended that CBR determinations are undertaken for detailed design of the highway / external areas.

5.5.2 Earthworks

A full earthworks programme should be designed and completed for the works once finalised levels are known.

5.5.3 Stockpile Management

During the course of the development there will also be areas of stockpiled soils intended for use within the proposed gardens. These will have been subjected to off-site testing and approved for use on site. It is imperative that the stockpiles are well managed to avoid inadvertent mixing or depositing of surplus or deleterious materials that would compromise the continued use. We would recommend that the site management reviews the proposed positions for placement of stockpiles and places either fencing or warning signs to ensure compliance.

5.5.4 Export of Materials

Any soils to be removed from site must be classified in accordance with WM3 under the definition of waste and chemically tested to determine their destination, i.e. reuse

or landfill. Waste ticket records must also be retained as proof of the export of materials from site.

6.0 RECOMMENDATIONS

- Following any variation in a finalised proposed development detailed design including earthworks design, proposed levels and arboricultural survey (tree survey) it is recommended that the above conclusions are re-appraised to determine the suitability.
- The conclusions of this report should be agreed with relevant regulatory authorities prior to the commencement of works.
- No ground gas protection measures are deemed necessary.
- Remedial measures are deemed necessary within private gardens and areas of soft landscaping in the form of a clean cover system. No remedial measures are deemed necessary with respect to groundwater at the site.
- If any hereto unidentified visual or olfactory evidence of contamination is encountered during earthworks or construction work, then the Local Authority Environmental Health Officer and Environment Agency should be contacted immediately to determine appropriate mitigation measures.

APPENDIX 1

LIMITATIONS OF INVESTIGATION WORK AND REPORT

LIMITATIONS OF REPORT

This consultancy report was compiled and carried out by IGE Consulting Limited ('IGE') for the client, as defined in the main report (the 'client'), on the basis of a defined programme and scope of works and the terms of a contract between IGE and the client. IGE undertook this with all reasonable skill and care, taking into account the limits of the scope of works required by the client, the prevailing site conditions, the time scale involved and the resources, including financial and manpower resources, agreed between IGE and the client. IGE cannot accept responsibility to any parties whatsoever, following the issue of this report, for any matters arising which may be considered outwith the agreed scope of works.

Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices. This report may not be relied upon, or transferred to, by any other party without the written agreement of its author. If a third party relies on this report, it does so wholly at its own and sole risk and IGE disclaims any liability to such parties.

It is IGE's understanding that this report is to be used for the purpose described in the 'Brief' section of this report. That purpose was a significant factor in determining the scope and the services to be provided. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without IGE's review and advice shall be at the client's sole and own risk.

The information contained in this report is protected by disclosure under Part 3 of the Environmental Information Regulations 2004 pursuant to the provisions of Regulation 12(5) without the consent in writing of a Director of IGE.

This report is a function of the date it was written and should be read in light of any subsequent changes in legislation, statutory requirements and industry practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of IGE. In the absence of such written advice of IGE, reliance on the report in the future shall be at the client's own and sole risk. Should IGE be requested to review the report in the future, IGE shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between IGE and the client.

The observations and conclusions described in this report are based solely upon the scope of works agreed between the client and IGE. IGE has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report. IGE is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the agreed scope of works. For the avoidance of doubt, this report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species (e.g. Japanese Knotweed). It is recommended that the client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the identification of asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace full and proper surveys.

LIMITATIONS OF INVESTIGATION WORK

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations, the potential exists for ground conditions to be encountered which are different to those considered in this report. The explored extent of the site area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried

out for a limited number of parameters, based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Exploratory Holes

Where exploratory holes have been carried out as part of this investigation, the spacing has been determined to provide a reasonable indication of the general ground conditions across the site, but the number has ultimately been limited by commercial constraints. The findings of the exploratory holes relate specifically to the exploratory hole locations and are no absolute guarantee of the ground conditions between such locations. Due allowance should be made for the possibility of variation in conditions between exploratory hole locations.

Extent of Contamination Testing

The extent of contaminated land testing carried out on samples obtained from the site has been determined in accordance with the latest legal guidance issued by the government to provide, with reasonable certainty, the probable general levels of contamination present on site that could pose a significant hazard to human health or waters. The extent of site investigation works including chemical testing has also been limited by reasonable commercial constraints. Although extensive testing of samples has been carried out, the volume of samples taken for testing are a minute fraction of the total volume of soils and groundwater present on site. Therefore, there is a residual risk that undetected pockets of contamination may be present on site, situated between testing locations.

When investigating or developing potentially contaminated land it is important to recognise that sub-surface conditions may vary spatially and temporally. The absence of certain ground, ground gas, contamination or groundwater conditions at the positions tested is not a guarantee that such conditions do not exist anywhere across the site. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Extent of Geo-Environmental Studies

This report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species e.g. Japanese Knotweed. It is recommended that the Client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the identification asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace a full and proper survey. If an Unexploded Ordnance (UXO) report has been obtained within the report, it has been so on the basis of Health and Safety concerns and no assessment has been made other than transcribing the recommendations of the sub-contractor contained within the report. In terms of a potential contaminative source, unless ordnance has been manufactured / stored on site, UXOs will only be determined as a contaminative source following a positive identification on site.

APPENDIX 2

FIGURES AND DRAWINGS



Notes: This drawing is the copyright Paddock Johnson Partnership Limited and may not be used without their prior written consent.
Written dimensions to be taken in preference to scaled dimensions.
Due to the inaccuracies of scanning, scanned images should not be scaled.

REV:	DATE:	DESCRIPTION:	BY:
A	15.01.26	Constraints indicated	CT
B	28.01.26	Issued for Comment	CT
C	02.02.26	Pre Application Status Issue	CT
D	11.03.26	Amendments following PreApp meeting	CT
E	13.03.26	Revised following client comments	CT
F	16.03.26	Revised following updated topographic survey	CT

Indicative Planting



VISUAL SCALE 1:500 @ A3

1 Proposed Site Plan
Scale: 1: 500

CLIENT:
Great Places Housing Group

PROJECT:
New Residential Development
Drake Street, Rochdale, OL16 1PJ

DRAWING TITLE:
Proposed Site Plan

DRAWING NUMBER:
19146-PJA-00-ZZ-DR-A-1200-F

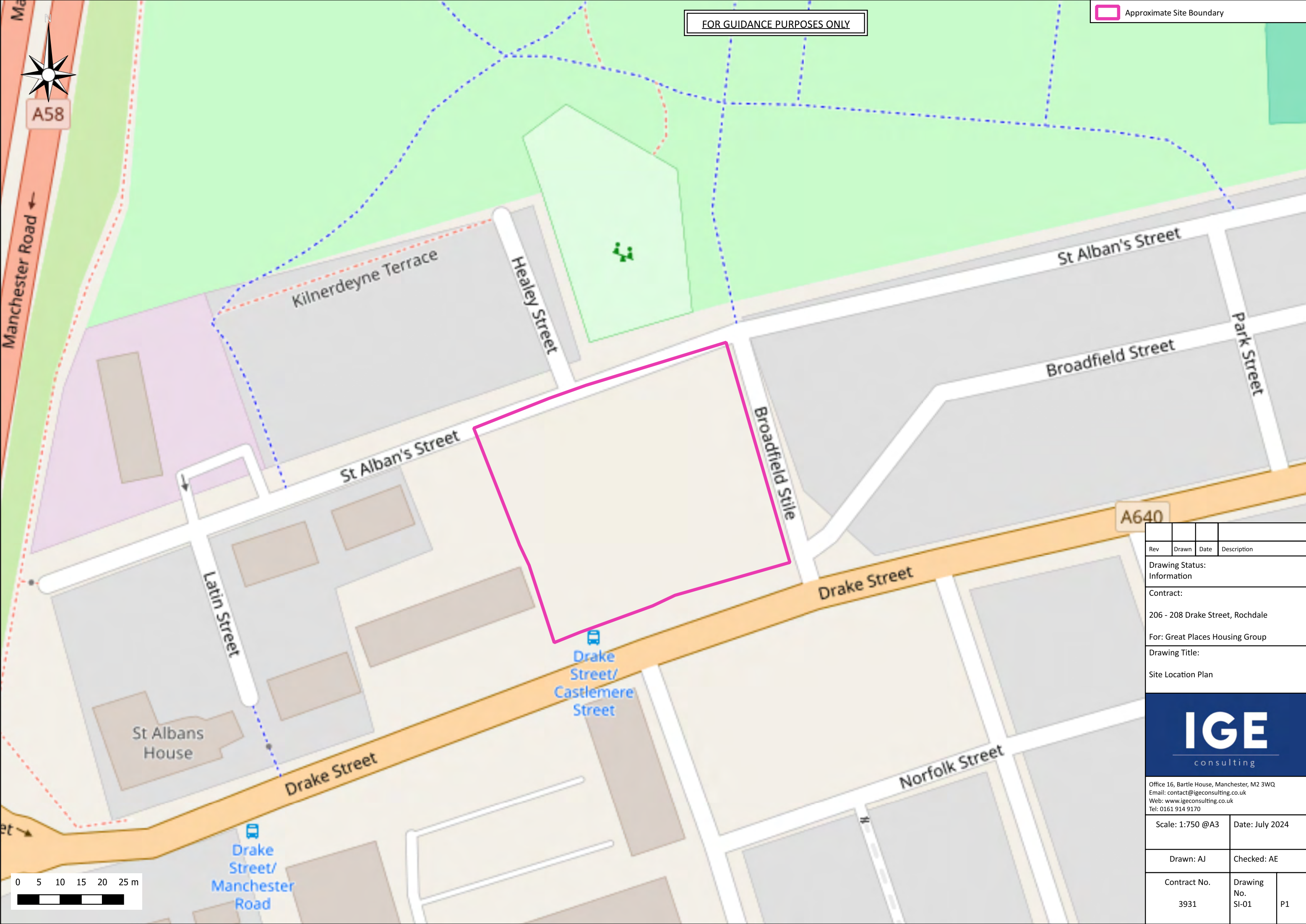
STATUS:
PRE APPLICATION

\\pjd01\Cubefiles\Generated Docs\1897\Drawings\PJA-00-ZZ-M3-A-9000\19146-PJA-00-ZZ-M3-A-9000-B.rvt

SCALE: DATE:
As 22.12.25
indicated@A3
BY: CHECKED:
CT MK

PADDOCK
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FOR GUIDANCE PURPOSES ONLY

Approximate Site Boundary

Rev	Drawn	Date	Description
-----	-------	------	-------------

Drawing Status:
Information

Contract:

206 - 208 Drake Street, Rochdale

For: Great Places Housing Group

Drawing Title:

Site Location Plan



Office 16, Bartle House, Manchester, M2 3WQ
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:750 @A3	Date: July 2024
------------------	-----------------

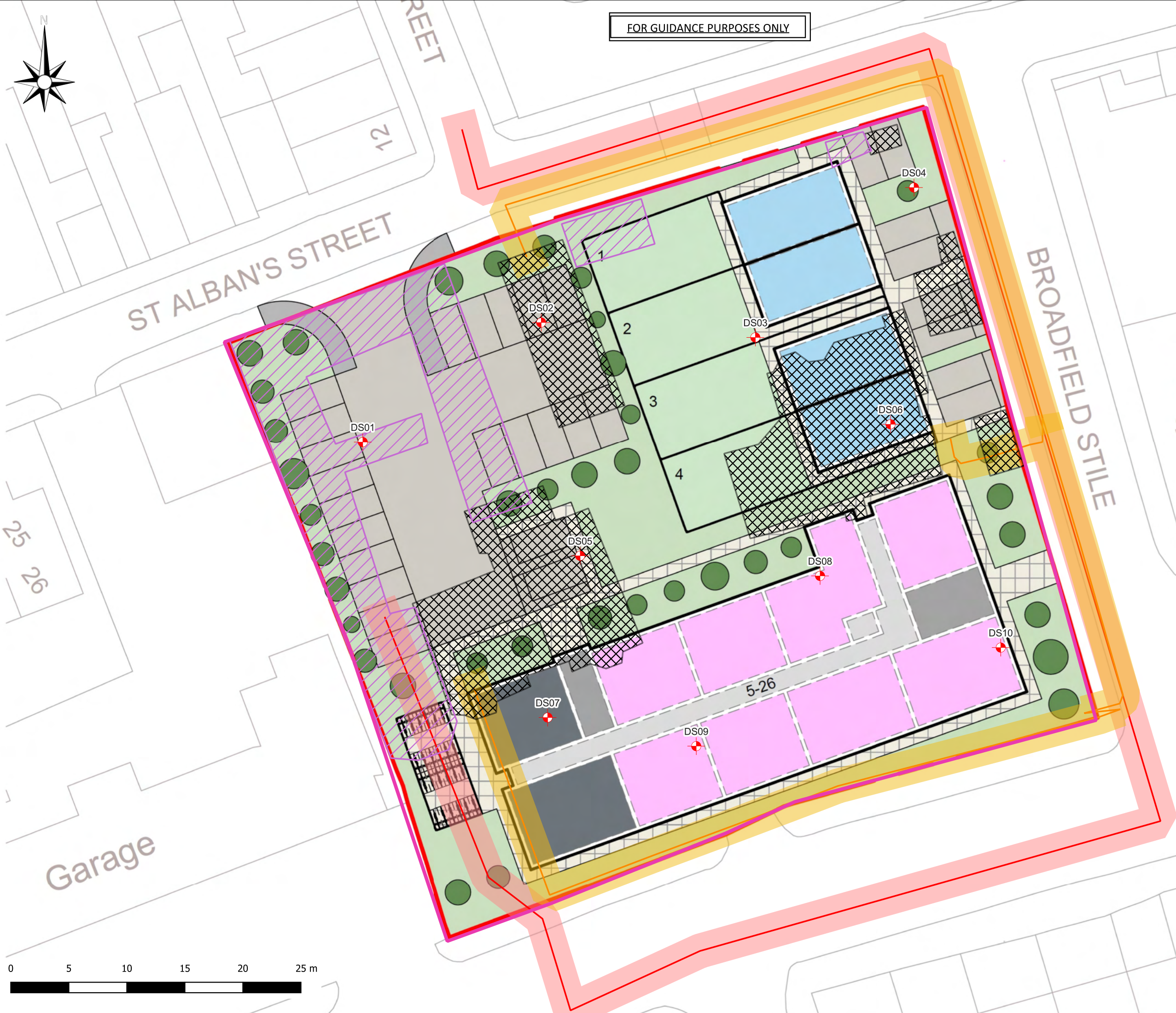
Drawn: AJ	Checked: AE
-----------	-------------

Contract No.	Drawing No.	
3931	SI-01	P1



FOR GUIDANCE PURPOSES ONLY

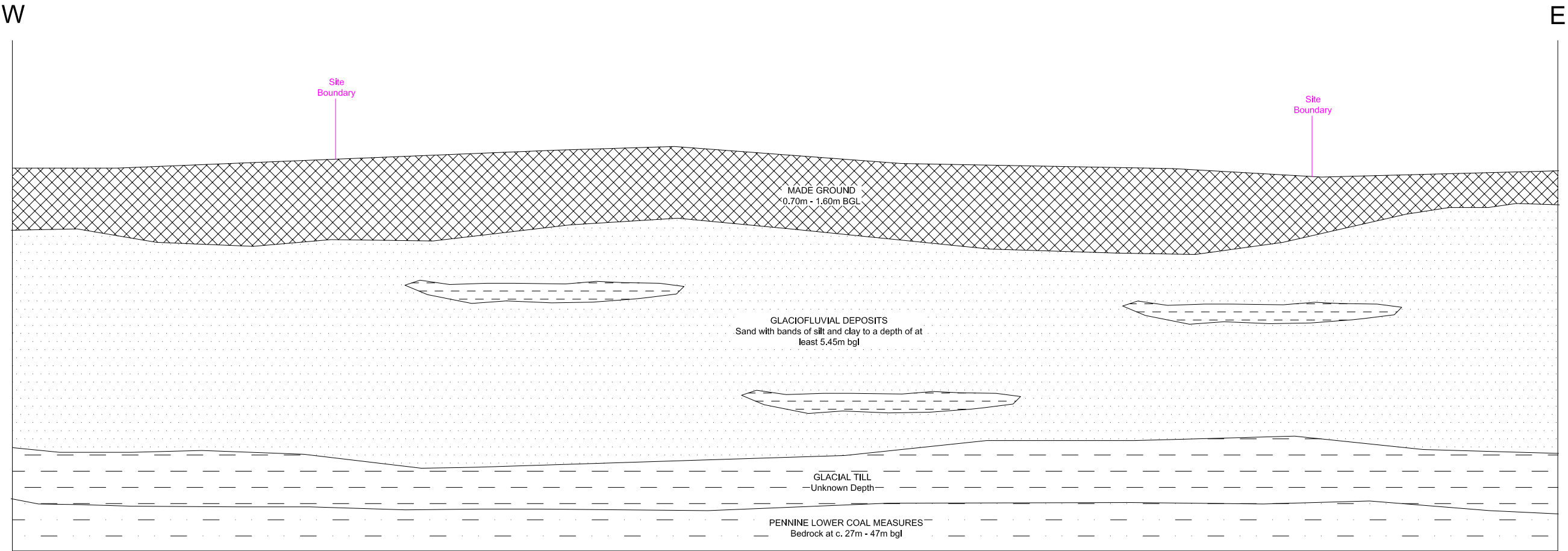
- Approximate Site Boundary
- Proposed Plots
- Historical Buildings 1892
- Historical Greenhouses 1910
- IGE Site Investigation
 - Dynamic Sample Boreholes
- Services
 - ELNW LV Electricity Cable
 - LP Gas Main



Rev	Drawn	Date	Description
Drawing Status: Information			
Contract: 206 - 208 Drake Street, Rochdale			
For: Great Places Housing Group			
Drawing Title: Exploratory Hole Location Plan			
IGEconsulting 1st Floor, 15 Oxford Court, Manchester, M2 3WQ Email: contact@igeconsulting.co.uk Web: www.igeconsulting.co.uk Tel: 0161 914 9170			
Scale: 1:500 @A3		Date: Nov 2025	
Drawn: AJ		Checked: AE	
Contract No. 3931	Drawing No. SI-05	P1	

Notes

- 1
- This drawings is Indicative and not to scale.
- 2
- This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.



Rev	Drawn	Date	Description
Drawing Status			
INFORMATION			
Contract			
206 - 208 Drake Street, Rochdale			
For: Great Place Housing Group			
Drawing Title			
Conceptual Ground Model			
IGEconsulting			
1st Floor, 15 Oxford Court, Manchester, M2 3WQ email: contact@igeconsulting.co.uk web: www.igeconsulting.co.uk tel: 0161 914 9170			
Scale	NTS	Date	Nov 2025
Drawn	AJ	Checked	AE
Contract No.	3931	Drawing No.	SI - 06
			P1

APPENDIX 3

DYNAMIC SAMPLING BOREHOLE LOGS

Dynamic Sample Borehole Photos

DS01

Drake Street



Image 1. DS01 Pit:

DS01 Pit

View left to right

0.00m - 1.20m bgl

Dynamic Sample Borehole Photos

DS01

Drake Street



Image 2. DS01 Runs:

DS01 Runs

View from right to left, top to bottom:

1.20m - 2.00m

2.00m - 3.00m

3.00m - 4.00m

4.00m - 5.00m

Office 16, Bartle House, Oxford Court Manchester M2 3WQ email: contact@igeconsulting.co.uk web: www.igeconsulting.co.uk tel: 0161 914 9170				Dynamic Sample Borehole Log				Dynamic Sample No. DS02 Sheet 1 of 1																	
Project Name: Drake Street						Co-ords: 389419E - 412876N		Project No. 3931																	
Location: Rochdale						Level (m AOD): 143.55		Logged By FR																	
Client: Great Places Housing Group						Date: 13/08/2024		Checked By LM																	
						Weather: Showers																			
Well / Backfill	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m AOD)	Stratum Description																		
		Depth(m)	Type	Results																					
		0.15	ES		0.45	143.10	Greyish brown, very gravelly, slightly clayey, fine to coarse SAND with cobbles. Gravel is angular to subrounded, fine to coarse of mixed lithologies, red brick, ceramic and glass. Cobbles are angular to subrounded of red brick. MADE GROUND																		
								Brown, gravelly, clayey, fine to coarse SAND with cobbles. Gravel is subangular to rounded, fine to coarse of mixed lithologies, red brick and clinker. Cobbles are angular to subangular of red brick and mixed lithologies MADE GROUND																	
		1.20	SPT	N=19 (5,6/7,5,3,4)	1.20	142.35	Medium dense, orangish brown, very gravelly, silty, fine to coarse SAND. Gravel is subangular to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS																		
		1.25	ES		1.40	142.15	Firm, brown mottled orange slightly gravelly, silty CLAY. Gravel is subangular to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS																		
		1.40	B		1.60	141.95	Brown, slightly gravelly, fine to coarse SAND. Gravel is subrounded to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS																		
					1.85	141.70	Becoming silty from 1.75m bgl. Soft, brown, slightly gravelly, slightly sandy SILT. Gravel is subangular to subrounded, fine to medium of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS																		
		2.00	SPT	N=10 (3,4/2,2,3,3)	2.10	141.45	Medium dense, light brown, slightly gravelly, silty, fine to medium SAND. Gravel is subrounded to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS																		
		2.10	B																						
		3.00	SPT	N=16 (3,3/4,3,4,5)	3.20	140.35	Soft, brown, slightly gravelly, slightly sandy SILT. Gravel is subangular to subrounded, fine to medium of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS																		
					3.50	140.05	Medium dense, light brown, slightly gravelly, silty, fine to medium SAND. Gravel is subrounded to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS																		
		4.00	SPT	N=20 (2,3/3,5,5,7)																					
		5.00	SPT	N=18 (2,3/3,4,5,6)																					
					5.45	138.10	Dynamic Sample terminated at 5.45m.																		
		Remarks:						Depth Strike		Water Strike		Remarks		Casing Details		Depth Base		Diameter		Sample Sleeve Runs		Depth Top (m)		Depth Base (m)	
Borehole terminated at target depth.										Well dipped upon completion of borehole, base dry at 5.41m bgl.								1.20		2.00		87 100%			
																		2.00		3.00		77 100%			
																		3.00		4.00		67 80%			
																		4.00		5.00		57 70%			



Image 1. DS02 Pit:

DS02 Pit

View right to left:

0.00m - 1.20m

Dynamic Sample Borehole Photos

DS02

Drake Street



Image 2. DS02 Runs:

DS02 Runs

View right to left, top to bottom:

1.20m - 2.00m

2.00m - 3.00m

3.00m - 4.00m

4.00m - 5.00m

IGE consulting		Office 16, Bartle House, Oxford Court Manchester M2 3WQ email: contact@igeconsulting.co.uk web: www.igeconsulting.co.uk tel: 0161 914 9170		Dynamic Sample Borehole Log ver. 1.5				Dynamic Sample No. DS03 Sheet 1 of 1										
Project Name: Drake Street				Co-ords: 389438E - 412875N		Project No. 3931												
Location: Rochdale				Level (m AOD): 144.51		Logged By FR												
Client: Great Places Housing Group				Date: 12/08/2024		Checked By LM												
Well / Backfill		Water Strikes		Sample and In Situ Testing			Depth (m)		Level (m AOD)		Stratum Description							
				Depth(m)	Type	Results												
				0.60	ES						Dark greyish brown, clayey, fine to coarse ashy SAND and angular to subangular, fine to coarse GRAVEL of red brick, glass, ceramic and concrete with cobbles. Cobbles are angular to subangular of red brick. MADE GROUND							
				1.20	SPT	N=4 (2,1/1,1,1,1)	1.20	143.31			Dark brown, gravelly, very clayey, fine to coarse SAND. Gravel is subangular to rounded, fine to coarse of red brick and mixed lithologies.							
				1.25	ES		1.40	143.11			MADE GROUND							
				1.50	ES						Orangish brown, gravelly, slightly clayey, silty, fine to coarse SAND. Gravel is subangular to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS							
				2.00	B		1.95	142.56			Medium dense, orangish brown, gravelly, slightly clayey, fine to coarse SAND. Gravel is subrounded to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS							
				2.00	SPT	N=15 (3,3/3,4,4,4)												
											Becoming very gravelly from 2.75m bgl.							
				3.00	SPT	N=18 (5,5/5,5,4,4)	3.00	141.51			Soft, brown mottled orange, gravelly, slightly sandy CLAY. Gravel is subrounded to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS							
				3.30	B		3.20	141.31			Medium dense, light brown, silty, fine to medium SAND. GLACIOFLUVIAL DEPOSITS							
				4.00	SPT	N=12 (2,3/2,3,4,3)												
							4.50	140.01			Soft, brown, slightly gravelly, slightly sandy SILT. Gravel is subangular to subrounded, fine to medium of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS							
							4.65	139.86			Medium dense, light brown, silty, fine to medium SAND. GLACIOFLUVIAL DEPOSITS							
				5.00	SPT	N=20 (4,4/5,5,5,5)												
							5.45	139.06			Dynamic Sample terminated at 5.45m.							
Remarks:												Water Strike		Casing Details		Sample Sleeve Runs		
												Depth Strike	Remarks	Depth Base	Diameter	Depth Top (m)	Depth Base (m)	Diameter (mm)
Borehole terminated at target depth.													Well dipped upon completion of borehole, base dry at 5.52m bgl.			1.20	2.00	87 100%
																2.00	3.00	77 80%
																3.00	4.00	67 85%
																4.00	5.00	57 60%



Image 1. DS03 Pit:

DS03 Pit

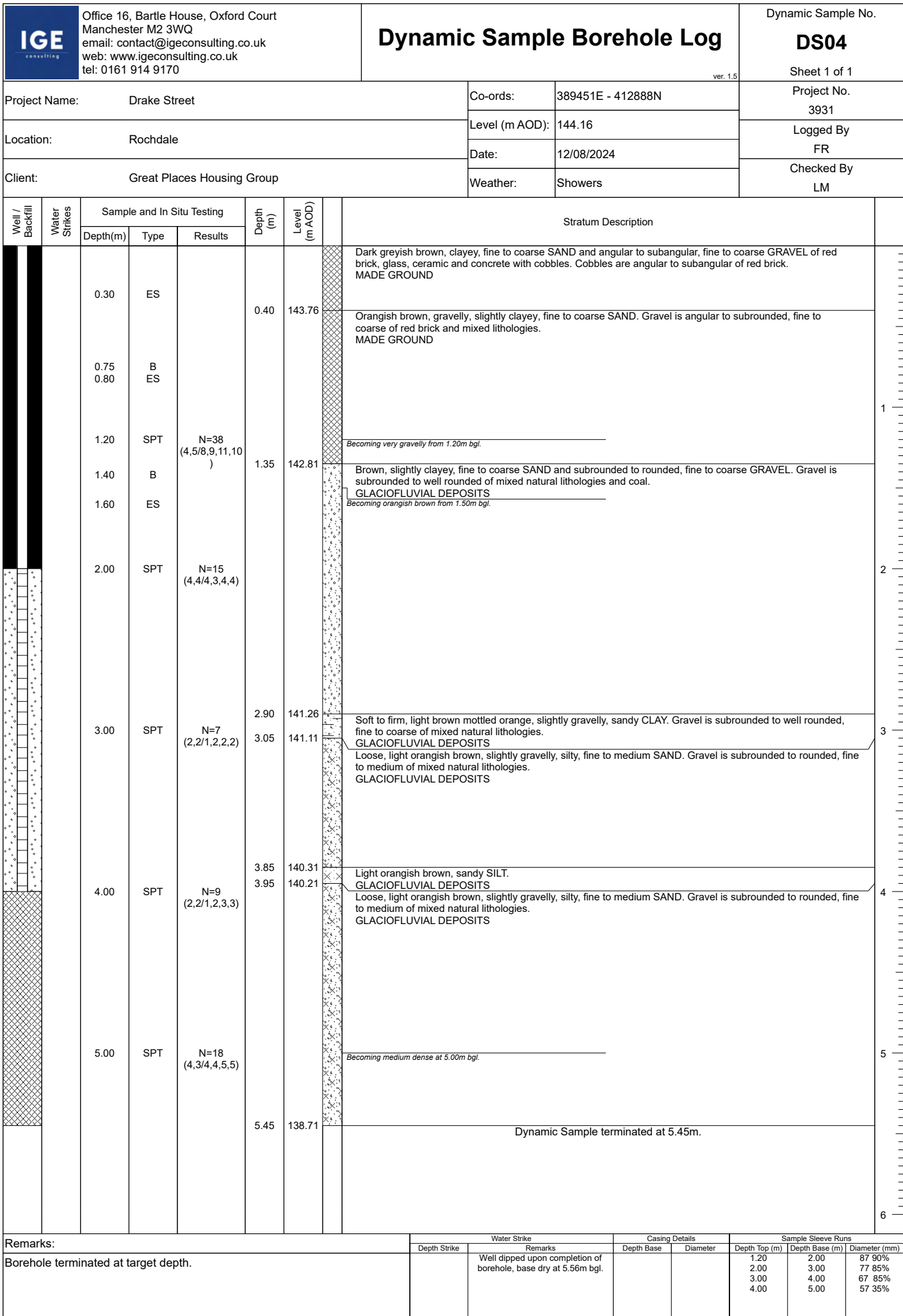
View right to left:

0.00m - 1.20m bgl



Image 2. DS03 Runs:
DS03 Runs
View right to left, top to bottom:

1.20m - 2.00m
2.00m - 3.00m
3.00m - 4.00m
4.00m - 5.00m



Dynamic Sample Borehole Photos

DS04

Drake Street



Image 1. DS04 Pit:

DS04 Pit

View left to right

0.00m - 1.20m bgl



Image 2. DS04 Runs:

DS04 Runs

View right to left, top to bottom:

1.20m - 2.00m

2.00m - 3.00m

3.00m - 4.00m

4.00m - 5.00m

IGE consulting		Office 16, Bartle House, Oxford Court Manchester M2 3WQ email: contact@igeconsulting.co.uk web: www.igeconsulting.co.uk tel: 0161 914 9170		Dynamic Sample Borehole Log ver. 1.5				Dynamic Sample No. DS05 Sheet 1 of 1		
Project Name: Drake Street				Co-ords: 389423E - 412856N		Project No. 3931				
Location: Rochdale				Level (m AOD): 144.05		Logged By FR				
Client: Great Places Housing Group				Date: 12/08/2024		Checked By LM				
Weather: Showers.										
Well / Backfill	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m AOD)		Stratum Description		
		Depth(m)	Type	Results						
		0.20	ES	N=10 (2,1/1,2,3,4)	0.20	143.85		Brown, slightly clayey, very gravelly, silty, fine to coarse SAND with cobbles. Gravel is subangular to rounded, fine to coarse of red brick and mixed lithologies. Cobbles are subrounded to well rounded of mixed lithologies. MADE GROUND	1	
		0.50	ES		0.60	143.45		Dark greyish brown, very gravelly, slightly silty, ashy fine to coarse SAND with a mild hydrocarbon odour. Gravel is angular to subangular, fine to coarse of clinker, red brick and coal. MADE GROUND		
		0.80	ES		1.20	142.85		Brown, gravelly, clayey, fine to coarse SAND with a mild hydrocarbon odour. Gravel is angular to subangular, fine to coarse of clinker, ceramic and red brick. MADE GROUND		
		1.20	SPT	N=15 (2,3/5,3,3,4)	1.35	ES	1.20	142.85	Very loose to loose, dark brown, slightly clayey, silty, fine to coarse SAND and subangular to subrounded, fine to coarse GRAVEL of mixed natural lithologies with cobbles. Cobbles are angular to subangular of sandstone. GLACIOFLUVIAL DEPOSITS	2
		2.00	SPT		2.10	B	2.00	142.05	Becoming clayey from 1.85m bgl	
		2.10	B		2.10	141.95	Firm, brown mottled orange, gravelly, slightly sandy CLAY Gravel is subangular to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS			
		2.60		N=13 (2,2/3,2,4,4)	2.60		2.60	141.45	Stiff, brown mottled orange, slightly gravelly, silty CLAY. Gravel is subangular to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS	3
		3.00	SPT		3.40		3.40	140.65	Medium dense, light brown, slightly gravelly, silty, fine to medium SAND. Gravel is subrounded to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS	
		3.70			3.70	140.35	Band of soft, sandy SILT from 2.85m to 2.95m bgl.			
		4.00	SPT	N=18 (2,3/5,3,3,5)	4.00		4.00		Soft, brown, slightly gravelly, slightly sandy SILT. Gravel is subangular to subrounded, fine to medium of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS	4
		5.00	SPT		5.00		5.00		Medium dense, light brown, slightly gravelly, silty, fine to medium SAND. Gravel is subrounded to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS	
		5.45			5.45	138.60	Band of coarse SAND from 4.65m to 4.75m bgl.			
Dynamic Sample terminated at 5.45m.									6	
Remarks:										
Borehole terminated at target depth.										
Water Strike										
Depth Strike										
Remarks										
Casing Details										
Depth Base										
Diameter										
Sample Sleeve Runs										
Depth Top (m)										
Depth Base (m)										
Diameter (mm)										
1.20									87 95%	
2.00									77 100%	
3.00									67 85%	
4.00									57 80%	

Dynamic Sample Borehole Photos

DS05

Drake Street



Image 1. DS05 Pit:

DS05 Pit

View right to left:

0.00m - 1.20m bgl



Image 2. DS05 Runs:

DS05 Runs

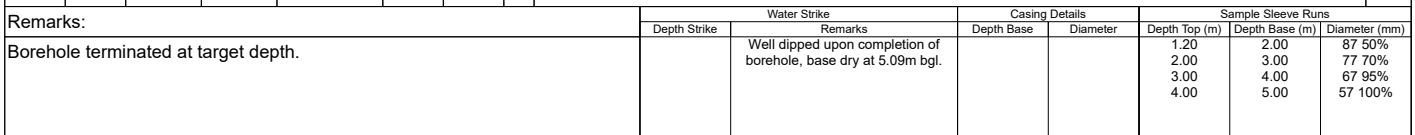
View right to left, top to bottom:

1.20m - 2.00m

2.00m - 3.00m

3.00m - 4.00m

4.00m - 5.00m



Dynamic Sample Borehole Photos

DS06

Drake Street



Image 1. DS06 Pit:

DS06 Pit

View right to left:

0.00m - 1.20m bgl

Dynamic Sample Borehole Photos

DS06

Drake Street



Image 2. DS06 Runs:

DS06 Runs

View right to left, top to bottom:

1.20m - 2.00m

2.00m - 3.00m

3.00m - 4.00m

4.00m - 5.00m

IGEconsulting Office 16, Bartle House, Oxford Court Manchester M2 3WQ email: contact@igeconsulting.co.uk web: www.igeconsulting.co.uk tel: 0161 914 9170		Dynamic Sample Borehole Log ver. 1.5		Dynamic Sample No. DS07 Sheet 1 of 1				
Project Name: Drake Street		Co-ords: 389420E - 412842N		Project No. 3931				
Location: Rochdale		Level (m AOD): 144.07		Logged By FR				
Client: Great Places Housing Group		Date: 13/08/2024		Checked By LM				
Weather: Showers.								
Well / Backfill	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m AOD)	Stratum Description	
		Depth(m)	Type	Results				
		0.30	ES		0.20	143.87	ASPHALT. MADE GROUND	
					0.30	143.77	Light grey, sandy, slightly clayey GRAVEL. Gravel is angular to subangular, fine to coarse of sandstone. MADE GROUND	
					0.35	143.72	Light greyish brown, sandy, slightly clayey GRAVEL. Gravel is angular to subangular, fine to coarse of sandstone, red brick and coal. MADE GROUND	
		0.70	ES				Brown, gravelly, clayey, fine to coarse SAND. Gravel is angular to subangular, fine to coarse of ceramic and red brick. MADE GROUND	
		1.20	SPT	N=35 (2,2/6,9,10,10)	1.20	142.87	Dense, orangish brown, slightly clayey, fine to coarse SAND and subrounded to well rounded, fine to coarse GRAVEL of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS	
					1.30	142.62	Orangish brown, gravelly, slightly clayey, fine to coarse SAND with cobbles. Gravel is subrounded to well rounded, fine to coarse of mixed natural lithologies. Cobbles are subrounded to well rounded of mixed natural deposits. GLACIOFLUVIAL DEPOSITS	
		1.45	ES B					
		2.00	SPT	N=13 (7,8/5,2,3,3)	1.90	142.17	Brown, sandy, slightly clayey, subrounded to well rounded, fine to coarse GRAVEL of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS	
					2.10	141.97	Firm, brown mottled orange, slightly gravelly, slightly sandy, silty CLAY with thin beds of soft, sandy SILT. Gravel is subrounded to well rounded of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS	
							Band of coarse SAND from 2.50m to 2.60m bgl.	
		3.00	SPT	N=15 (2,2/3,4,4,4)	2.90	141.17	Medium dense, light brown, slightly gravelly, silty, fine to medium SAND. Gravel is subrounded to rounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS	
4.00	SPT	N=21 (3,5/6,5,5,5)						
5.00	SPT	N=15 (4,4/4,4,3,4)						
			5.45	138.62	Dynamic Sample terminated at 5.45m.			
Remarks:		Water Strike		Casing Details		Sample Sleeve Runs		
Borehole terminated at target depth.		Depth Strike	Remarks	Depth Base	Diameter	Depth Top (m)	Depth Base (m)	Diameter (mm)
			Well dipped upon completion of borehole, base dry at 5.38m bgl.			1.20	2.00	87 65%
						2.00	3.00	77 90%
						3.00	4.00	67 90%
						4.00	5.00	57 55%

Dynamic Sample Borehole Photos

DS07

Drake Street



Image 1. DS07 Pit:

DS07 Pit

View right to left:

0.00m - 1.20m bgl

Dynamic Sample Borehole Photos

DS07

Drake Street



Image 2. DS07 Runs:

DS07 Runs

View right to left, top to bottom:

1.20m - 2.00m

2.00m - 3.00m

3.00m - 4.00m

4.00m - 5.00m

IGE consulting		Office 16, Bartle House, Oxford Court Manchester M2 3WQ email: contact@igeconsulting.co.uk web: www.igeconsulting.co.uk tel: 0161 914 9170		Dynamic Sample Borehole Log ver. 1.5				Dynamic Sample No. DS08 Sheet 1 of 1		
Project Name: Drake Street				Co-ords: 389443E - 412854N		Project No. 3931				
Location: Rochdale				Level (m AOD): 144.75		Logged By FR				
Client: Great Places Housing Group				Date: 12/08/2024		Checked By LM				
Weather: Showers.										
Well / Backfill	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m AOD)		Stratum Description		
		Depth(m)	Type	Results						
		0.10	ES		0.25	144.50		Light grey, sandy, slightly clayey GRAVEL. Gravel is angular to subangular, fine to coarse of sandstone and red brick. MADE GROUND	1	
		0.50	ES		0.70	144.05		Brown, very gravelly, slightly clayey, silty, fine to coarse SAND with cobbles. Gravel is subangular to rounded, fine to coarse of red brick and mixed lithologies. Cobbles are subrounded to well rounded of mixed lithologies. MADE GROUND		
		0.85	ES		Orangish brown, gravelly, clayey, fine to coarse SAND. Gravel is angular to subrounded, fine to coarse of mixed natural lithologies. GLACIOFLUVIAL DEPOSITS					
		1.20	B SPT	N=1 (1,0/0,0,1,0)				Becoming slightly gravelly from 1.20m bgl.		
		1.20								
		2.00	SPT	N=10 (3,2/3,2,2,3)				Becoming loose to medium dense from 2.00m bgl.	2	
		3.00	B SPT	N=12 (3,3/4,2,3,3)						
		3.00								
		4.00	SPT	N=22 (3,4/7,5,5,5)					3	
		5.00	SPT	N=18 (2,3/3,4,5,6)						4
								5		
								6		
Remarks:				Water Strike		Casing Details		Sample Sleeve Runs		
Borehole terminated at target depth.				Depth Strike	Remarks	Depth Base	Diameter	Depth Top (m)	Depth Base (m)	Diameter (mm)
					Well dipped upon completion of borehole, base dry at 5.38m bgl.			1.20	2.00	87 70%
								2.00	3.00	77 85%
								3.00	4.00	67 95%
								4.00	5.00	57 80%

Dynamic Sample Borehole Photos

DS08

Drake Street



Image 1. DS08 Pit:

DS08 Pit

View right to left:

0.00m - 1.20m bgl

Dynamic Sample Borehole Photos

DS08

Drake Street



Image 2. DS08 Runs:

DS08 Runs

View right to left, top to bottom:

1.20m - 2.00m

2.00m - 3.00m

3.00m - 4.00m

4.00m - 5.00m

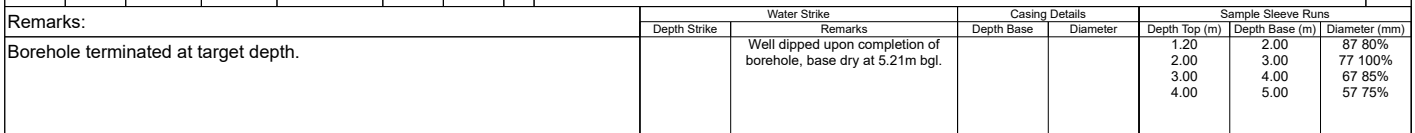




Image 1. DS09 Pit:

DS09 Pit

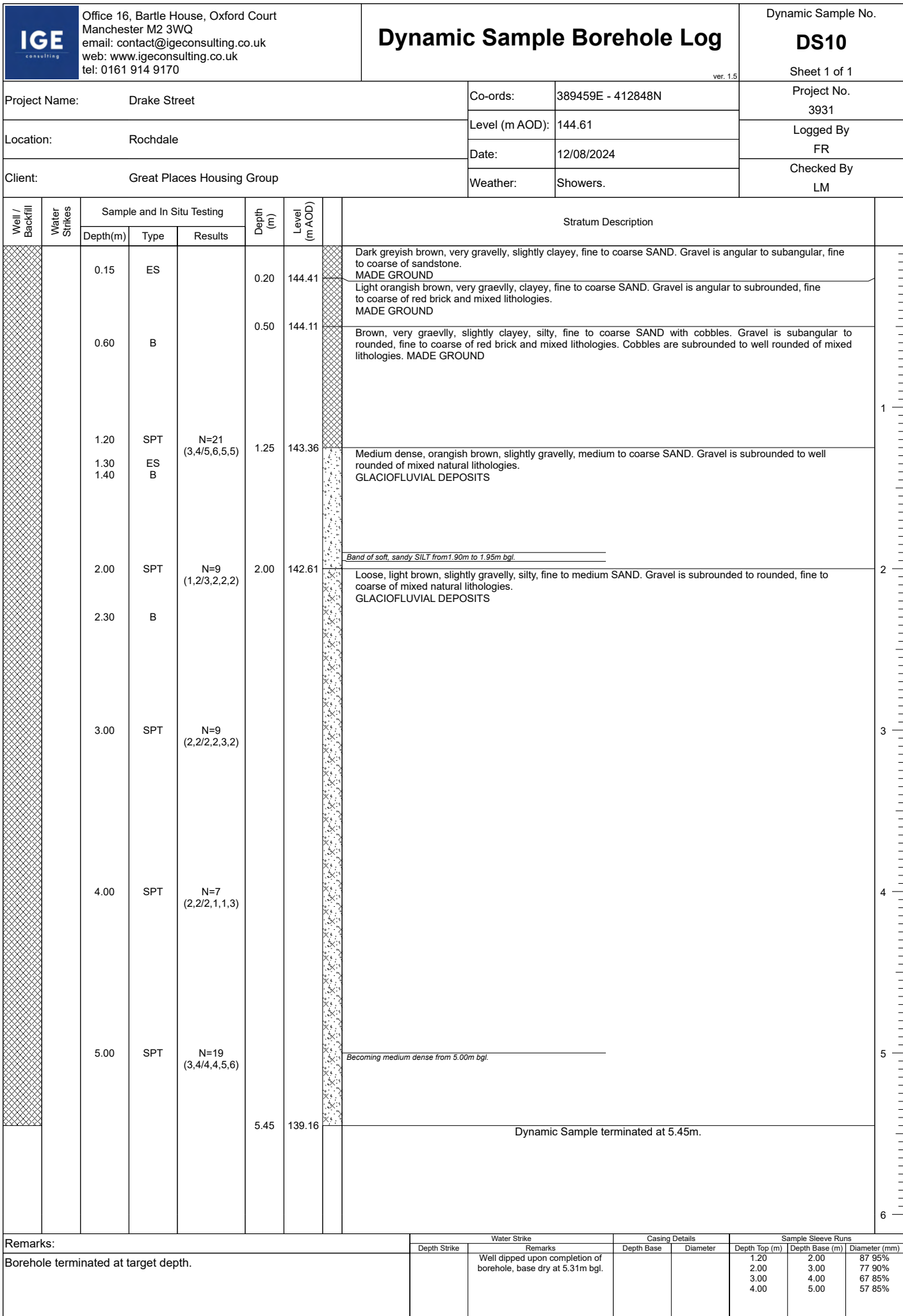
View left to right:

0.00m - 1.20m bgl



Image 2. DS09 Runs:
DS09 Runs
View right to left, top to bottom:

1.20m - 2.00m
2.00m - 3.00m
3.00m - 4.00m
4.00m - 5.00m



Dynamic Sample Borehole Photos

DS10

Drake Street



Image 1. DS10 Pit:

DS10 Pit

View right to left:

0.00m - 1.20m bgl

Dynamic Sample Borehole Photos

DS10

Drake Street



Image 2. DS10 Runs:

DS10 Runs

View right to left, top to bottom:

1.20m - 2.00m

2.00m - 3.00m

3.00m - 4.00m

4.00m - 5.00m

APPENDIX 4

GEOTECHNICAL LABORATORY TEST RESULTS

Project Name

Drake Street

[illegible]

04/09/2024

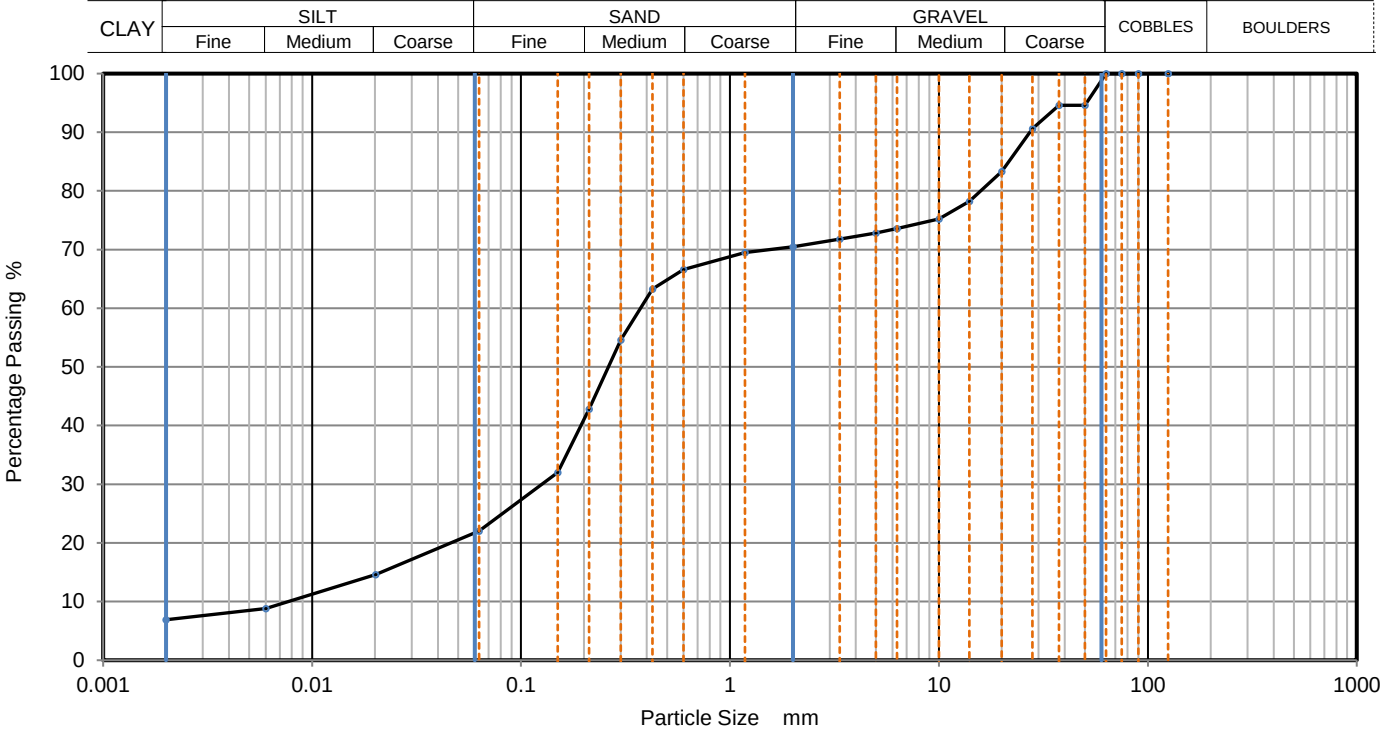
1pt - single point test



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INDEX

GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J282429
				Borehole/Pit No.	DS01
Project Name	Drake Street			Sample No.	
Soil Description	Brown slightly gravelly sandy CLAY			Depth, m	1.60
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	TTLP2024081515



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0201	15
90	100	0.0060	9
75	100	0.0020	7
63	100		
50	95		
37.5	95		
28	91		
20	83		
14	78		
10	75		
6.3	74		
5	73		
3.35	72		
2	71		
1.18	70		
0.6	67	Particle density (assumed) 2.65 Mg/m3	
0.425	63		
0.3	55		
0.212	43		
0.15	32		
0.063	22		

Dry Mass of sample, g	3517
-----------------------	------

Sample Proportions	% dry mass
Very coarse	0
Gravel	30
Sand	49
Silt	15
Clay	7

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Date Printed	04/09/2024
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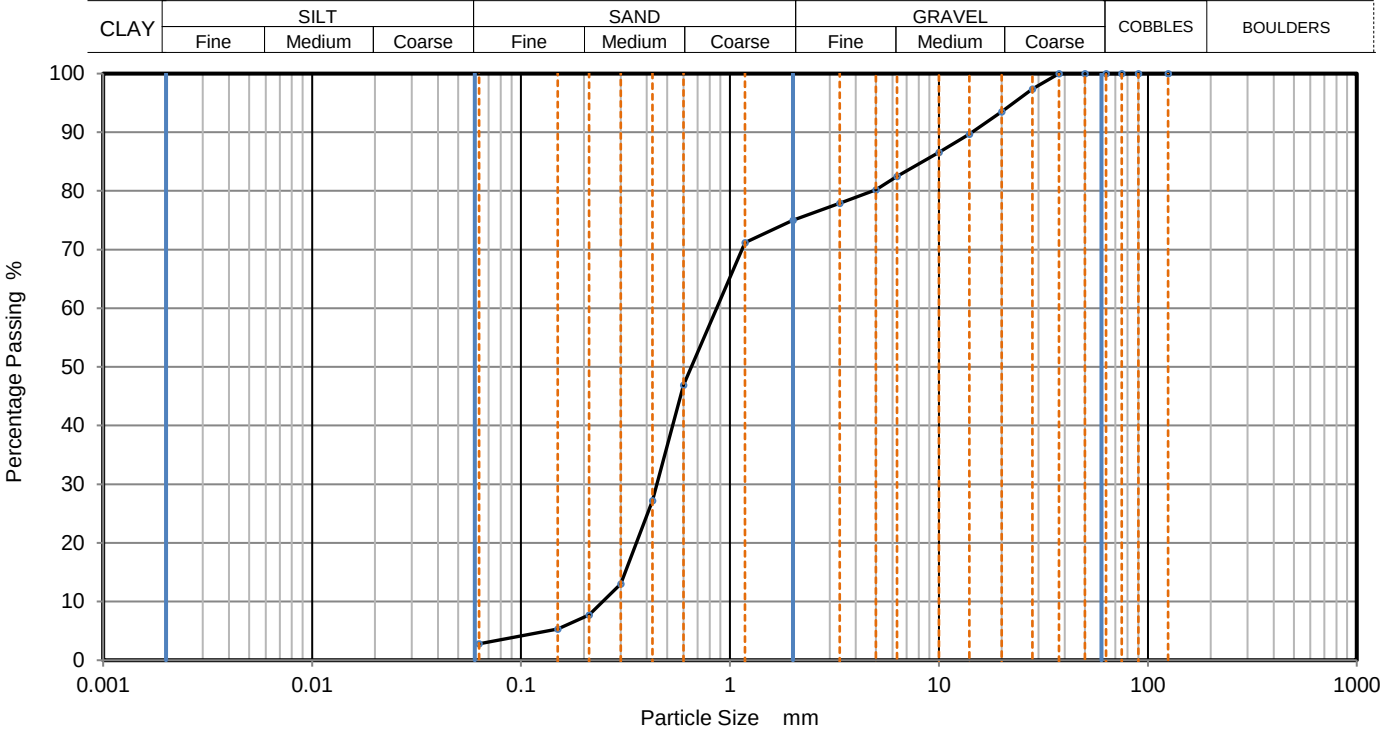


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GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J282429
				Borehole/Pit No.	DS03
Project Name	Drake Street			Sample No.	1
Soil Description	Brown gravelly SAND			Depth, m	2.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	TTLP2024081513



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	97		
20	94		
14	90		
10	87		
6.3	83		
5	80		
3.35	78		
2	75		
1.18	71		
0.6	47		
0.425	27		
0.3	13		
0.212	8		
0.15	5		
0.063	3		

Dry Mass of sample, g	3250
-----------------------	------

Sample Proportions	% dry mass
Very coarse	0
Gravel	25
Sand	72
Fines <0.063mm	3

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Date Printed	04/09/2024
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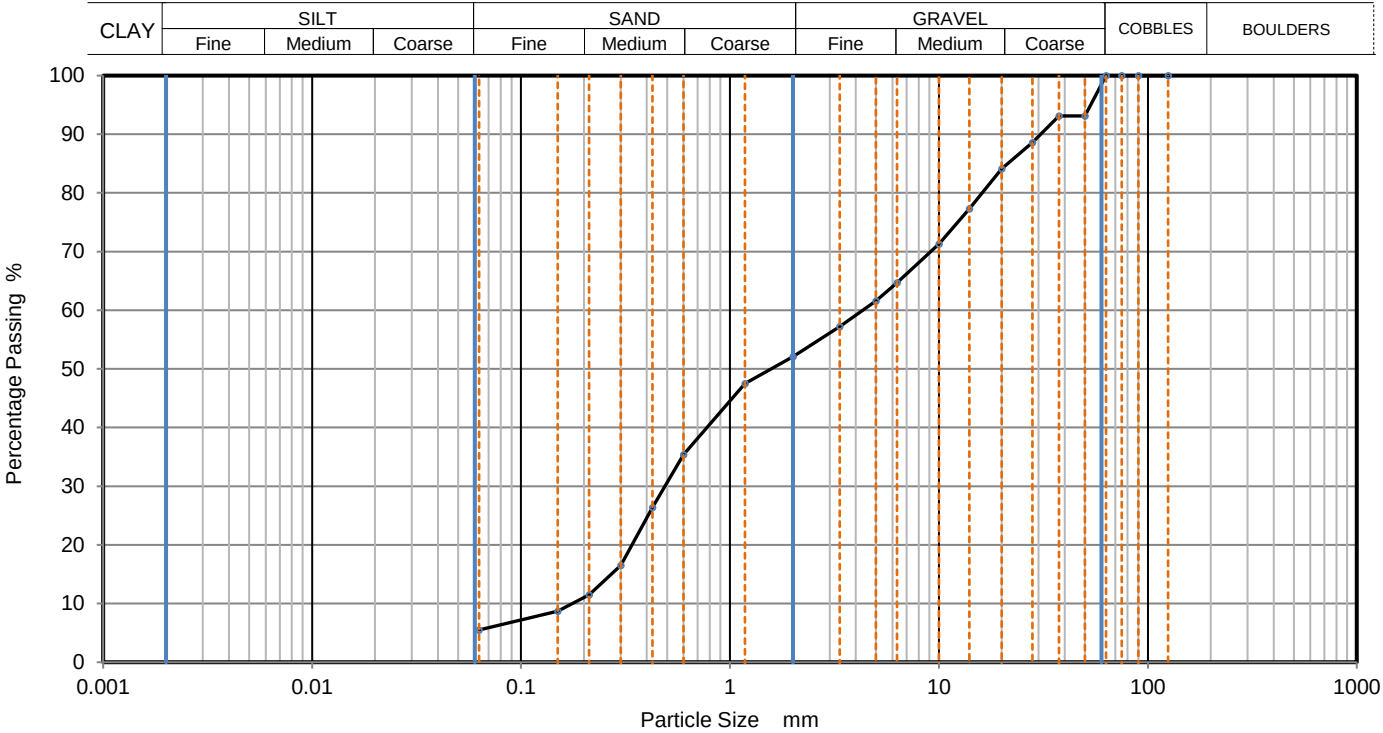


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PSD

GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J282429
				Borehole/Pit No.	DS07
Project Name	Drake Street			Sample No.	
Soil Description	Brown clayey SAND and GRAVEL			Depth, m	1.45
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	TTLP2024081510



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	93		
37.5	93		
28	89		
20	84		
14	77		
10	71		
6.3	65		
5	62		
3.35	57		
2	52		
1.18	48		
0.6	35		
0.425	26		
0.3	17		
0.212	12		
0.15	9		
0.063	6		

Dry Mass of sample, g	3582
-----------------------	------

Sample Proportions	% dry mass
Very coarse	0
Gravel	48
Sand	47
Fines <0.063mm	6

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	25
Curvature Coefficient	0.31

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Date Printed	04/09/2024
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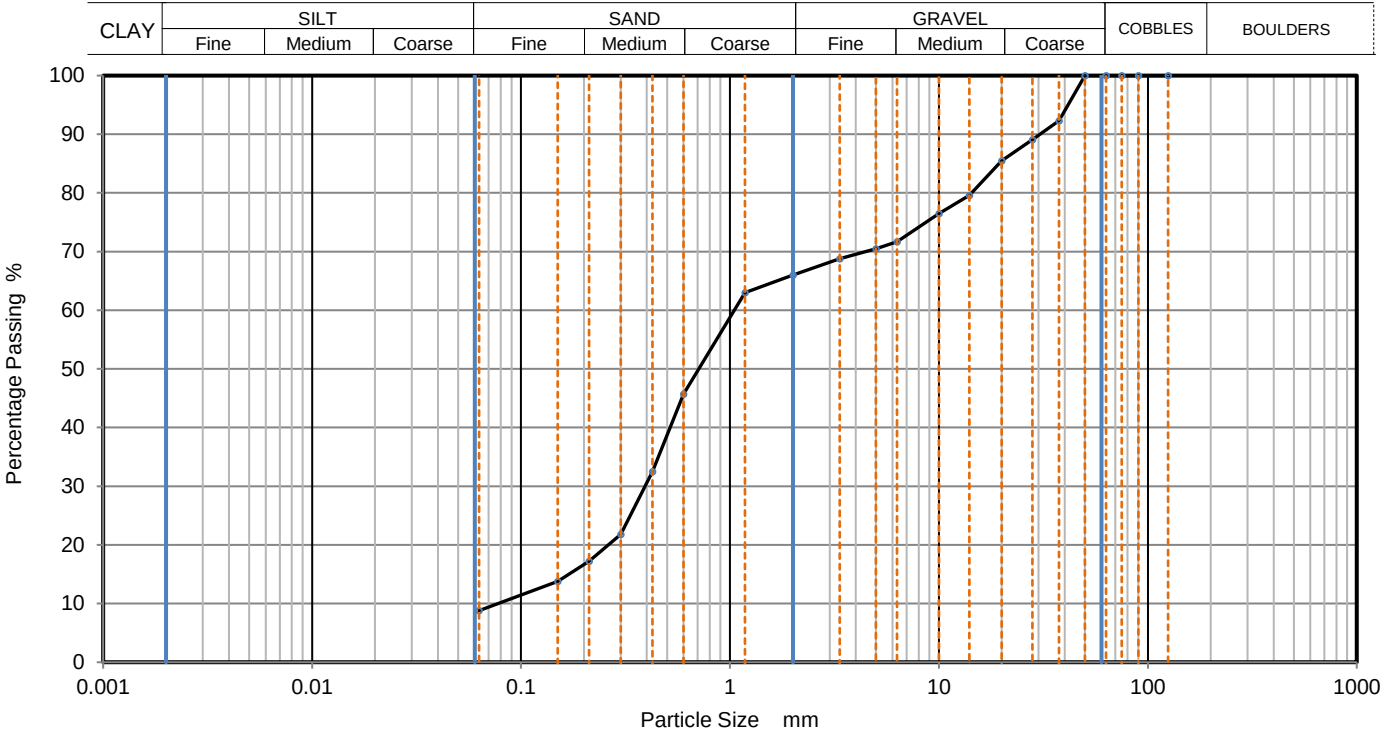


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GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J282429
				Borehole/Pit No.	DS08
Project Name	Drake Street			Sample No.	1
Soil Description	Brown clayey gravelly SAND			Depth, m	1.20
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	TTLP202408159



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	92		
28	89		
20	86		
14	80		
10	77		
6.3	72		
5	71		
3.35	69		
2	66		
1.18	63		
0.6	46		
0.425	33		
0.3	22		
0.212	17		
0.15	14		
0.063	9		

Dry Mass of sample, g	4469
-----------------------	------

Sample Proportions	% dry mass
Very coarse	0
Gravel	34
Sand	57
Fines <0.063mm	9

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	14
Curvature Coefficient	1.9

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Date Printed	04/09/2024
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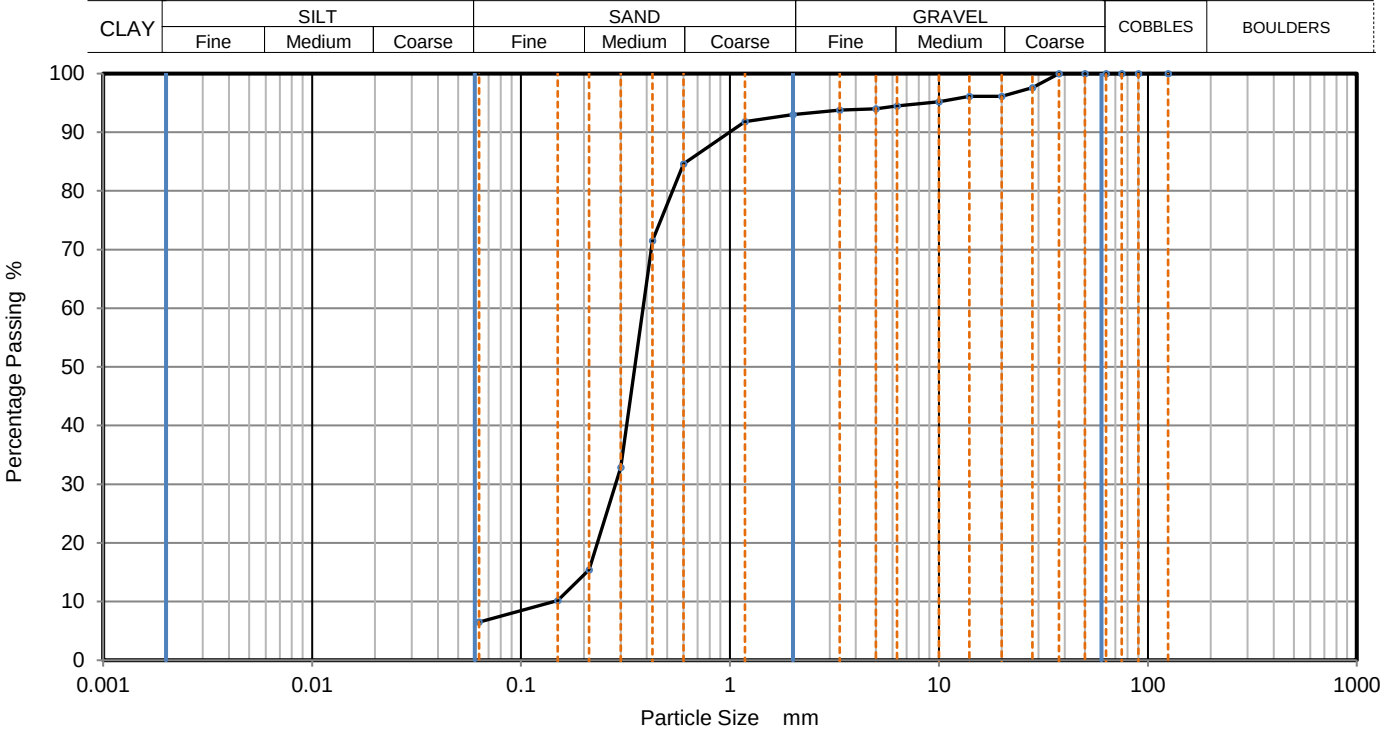


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GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J282429
				Borehole/Pit No.	DS10
Project Name	Drake Street			Sample No.	
Soil Description	Brown slightly gravelly SAND			Depth, m	1.40
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	TTLP202408157



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	96		
14	96		
10	95		
6.3	95		
5	94		
3.35	94		
2	93		
1.18	92		
0.6	85		
0.425	72		
0.3	33		
0.212	15		
0.15	10		
0.063	7		

Dry Mass of sample, g	4435
-----------------------	------

Sample Proportions	% dry mass
Very coarse	0
Gravel	7
Sand	87
Fines <0.063mm	6

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Date Printed	04/09/2024
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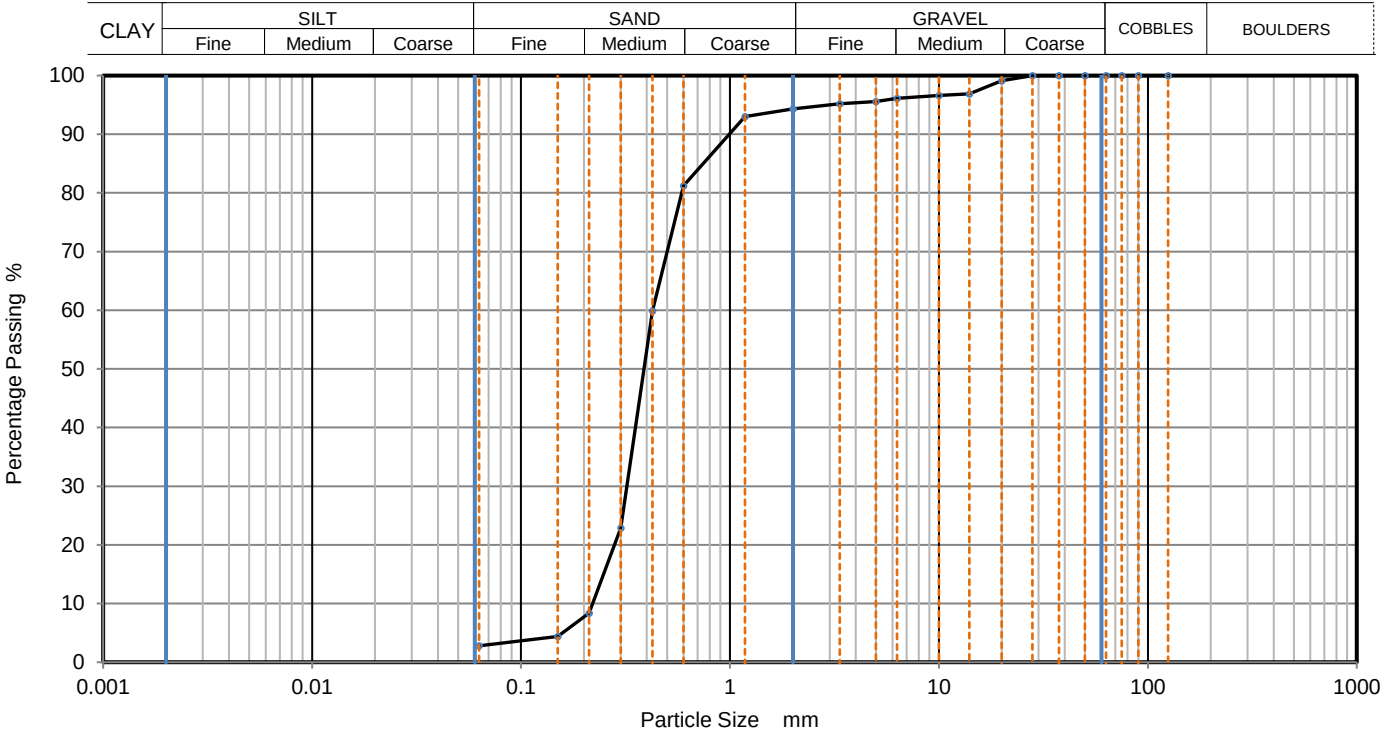


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GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J282429
				Borehole/Pit No.	DS10
Project Name	Drake Street			Sample No.	1
Soil Description	Orange brown slightly gravelly SAND			Depth, m	2.30
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	TTLP202408156



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	97		
10	97		
6.3	96		
5	96		
3.35	95		
2	94		
1.18	93		
0.6	81		
0.425	60		
0.3	23		
0.212	8		
0.15	4		
0.063	3		

Dry Mass of sample, g	4983
-----------------------	------

Sample Proportions	% dry mass
Very coarse	0
Gravel	6
Sand	92
Fines <0.063mm	3

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	1.9
Curvature Coefficient	1.1

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Date Printed	04/09/2024
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PSD

APPENDIX 5

CHEMICAL LABORATORY TEST RESULTS

IGE Consulting
Office 11
Bartle House
Oxford Court
Manchester
M2 3WQ

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

e: fionarobson@igeconsulting.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-036444

Project / Site name:	Drake Street	Samples received on:	14/08/2024
Your job number:	3931	Samples instructed on/ Analysis started on:	15/08/2024
Your order number:	150824 3931	Analysis completed by:	20/08/2024
Report Issue Number:	1	Report issued on:	20/08/2024
Samples Analysed:	17 soil samples		

Signed: 

Rafał Szczepańczyk
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number	287162	287163	287164	287165	287166
Sample Reference	DS01	DS02	DS02	DS03	DS04
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	0.15	1.25	0.60	0.30
Date Sampled	13/08/2024	13/08/2024	13/08/2024	12/08/2024	12/08/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	-	< 0.1	< 0.1	-
Moisture Content	%	0.01	NONE	12	-	8.6	14	-
Total mass of sample received	kg	0.1	NONE	0.8	-	0.8	0.8	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MWI	MWI	-	MWI	MWI
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
---	------	-----	-----------	---	---	---	---	---

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.9	-	8.2	8.2	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	150	-	210	50	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	76.7	-	104	24.7	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	-	-	-	-	-
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	-	-	-	-	-
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	5.3	-	0.9	4.7	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.1	-	0.5	2.7	-
Water Soluble Nitrate (2:1) as N	mg/kg	2	NONE	-	-	-	-	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	-	-	-
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0	-	< 2.0	< 2.0	-
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0	-	< 5.0	< 5.0	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	-
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Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number	287162	287163	287164	287165	287166
Sample Reference	DS01	DS02	DS02	DS03	DS04
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	0.15	1.25	0.60	0.30
Date Sampled	13/08/2024	13/08/2024	13/08/2024	12/08/2024	12/08/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.54	-	< 0.05	0.11	-
Acenaphthylene	mg/kg	0.05	MCERTS	0.42	-	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	1.3	-	< 0.05	0.12	-
Fluorene	mg/kg	0.05	MCERTS	1.3	-	< 0.05	0.07	-
Phenanthrene	mg/kg	0.05	MCERTS	12	-	< 0.05	1.1	-
Anthracene	mg/kg	0.05	MCERTS	4.3	-	< 0.05	0.21	-
Fluoranthene	mg/kg	0.05	MCERTS	30	-	< 0.05	2.4	-
Pyrene	mg/kg	0.05	MCERTS	26	-	< 0.05	2.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	16	-	< 0.05	1.3	-
Chrysene	mg/kg	0.05	MCERTS	16	-	< 0.05	1.4	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	21	-	< 0.05	1.3	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	10	-	< 0.05	0.8	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	18	-	< 0.05	1.3	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	9.5	-	< 0.05	0.58	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.7	-	< 0.05	0.14	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	10	-	< 0.05	0.68	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	179	-	< 0.80	13.8	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	36	-	7	17	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	250	-	29	290	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	2.4	-	0.57	0.68	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	-	0.3	0.6	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.3	-	< 0.2	< 0.2	-
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	-	< 1.2	< 1.2	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	-	14	19	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	650	-	16	46	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	680	-	21	1100	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	0.6	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	42	-	17	16	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.4	-	1.1	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	55	-	18	28	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	370	-	50	200	-

Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	-
Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	-

Analytical Report Number: 24-036444

Project / Site name: Drake Street

Your Order No: 150824 3931

Lab Sample Number	287162	287163	287164	287165	287166
Sample Reference	DS01	DS02	DS02	DS03	DS04
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	0.15	1.25	0.60	0.30
Date Sampled	13/08/2024	13/08/2024	13/08/2024	12/08/2024	12/08/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	-	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	-	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	1100	-	< 10	100	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	1100	-	< 10	100	-

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-

Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number				287162	287163	287164	287165	287166
Sample Reference				DS01	DS02	DS02	DS03	DS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.15	1.25	0.60	0.30
Date Sampled				13/08/2024	13/08/2024	13/08/2024	12/08/2024	12/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number	287167	287168	287169	287170	287171
Sample Reference	DS04	DS05	DS05	DS05	DS06
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.60	0.50	0.80	1.35	1.00
Date Sampled	12/08/2024	12/08/2024	12/08/2024	12/08/2024	12/08/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	57.3	< 0.1	< 0.1	79.9	< 0.1
Moisture Content	%	0.01	NONE	3.4	10	12	5.6	10
Total mass of sample received	kg	0.1	NONE	0.8	0.8	0.8	0.8	0.8

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	MWI	MWI	-	MWI
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.1	8.7	7.9	7.9	8.4
Total Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	%	0.005	MCERTS	0.018	-	0.033	0.025	0.233
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	23	39	41	50	960
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	11.3	19.6	20.3	24.8	478
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	1.8	-	1.1	1.2	1.5
Total Sulphur	mg/kg	50	MCERTS	95	-	210	880	870
Total Sulphur	%	0.005	MCERTS	0.01	-	0.021	0.088	0.087
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	< 0.5	-	< 0.5	< 0.5	< 0.5
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Organic Matter (automated)	%	0.1	MCERTS	-	3.8	3	0.7	1.6
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	2.2	1.7	0.4	0.9
Water Soluble Nitrate (2:1) as N	mg/kg	2	NONE	< 2.0	-	< 2.0	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	-	< 2.0	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	-	< 2.0	< 2.0	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	-	< 5.0	< 5.0	< 5.0	< 5.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	-	-
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Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number	287167	287168	287169	287170	287171
Sample Reference	DS04	DS05	DS05	DS05	DS06
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.60	0.50	0.80	1.35	1.00
Date Sampled	12/08/2024	12/08/2024	12/08/2024	12/08/2024	12/08/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	1.8	0.21	< 0.05	2.4
Acenaphthylene	mg/kg	0.05	MCERTS	-	2.4	0.15	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	11	0.31	< 0.05	2.5
Fluorene	mg/kg	0.05	MCERTS	-	6.6	0.26	< 0.05	2.2
Phenanthrene	mg/kg	0.05	MCERTS	-	100	3.5	0.31	16
Anthracene	mg/kg	0.05	MCERTS	-	23	0.87	0.06	3.7
Fluoranthene	mg/kg	0.05	MCERTS	-	180	5.4	0.32	15
Pyrene	mg/kg	0.05	MCERTS	-	160	5.2	0.27	12
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	79	2.7	0.12	6
Chrysene	mg/kg	0.05	MCERTS	-	85	2.9	0.16	6
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	90	2.6	0.09	4.9
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	36	1	< 0.05	2.7
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	72	2.3	0.1	4.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	30	0.98	< 0.05	1.9
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	8.4	0.26	< 0.05	0.57
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	34	1.1	0.05	1.8

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	920	29.9	1.49	82.2
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	14	9.9	6.8	8.2
Barium (aqua regia extractable)	mg/kg	1	MCERTS	-	160	64	37	370
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	0.68	0.4	0.36
Boron (water soluble)	mg/kg	0.2	MCERTS	-	< 0.2	0.4	0.2	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	-	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	11	14	18	10
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	34	38	13	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	600	100	83	2100
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.6	< 0.3	0.3	9.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	16	17	18	8.5
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	1.1	< 1.0	1.1	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	31	26	23	19
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	140	39	49	80

Magnesium (leachate equivalent)	mg/l	2.5	NONE	2.8	-	2.8	2.8	5.7
Magnesium (water soluble)	mg/kg	5	NONE	5.5	-	5.5	5.6	11

Analytical Report Number: 24-036444

Project / Site name: Drake Street

Your Order No: 150824 3931

Lab Sample Number	287167	287168	287169	287170	287171
Sample Reference	DS04	DS05	DS05	DS05	DS06
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.60	0.50	0.80	1.35	1.00
Date Sampled	12/08/2024	12/08/2024	12/08/2024	12/08/2024	12/08/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	11	< 2.0	-	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	16	< 8.0	-	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	15	< 8.0	-	30
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	< 8.4	< 8.4	-	23
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	42	< 10	-	30
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	42	< 10	-	53

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	< 0.020	< 0.020	-	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	2.2
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	68	2.4	-	14
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	580	13	-	62
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	690	21	-	84
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	67	< 8.4	-	20
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	1300	36	-	160
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	1400	36	-	180

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	-	-	-	12	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	-	-	-	< 1.0	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	-	-	-	12	-

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Chloroethane	µg/kg	5	NONE	-	< 5.0	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	< 5.0	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	< 5.0	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	< 5.0	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	< 5.0	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	< 5.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0	< 5.0	-	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	< 5.0	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Benzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	< 5.0	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-

Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number				287167	287168	287169	287170	287171
Sample Reference				DS04	DS05	DS05	DS05	DS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.60	0.50	0.80	1.35	1.00
Date Sampled				12/08/2024	12/08/2024	12/08/2024	12/08/2024	12/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Toluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	< 5.0	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	< 5.0
Styrene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Bromoform	µg/kg	5	NONE	-	< 5.0	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	< 5.0	-	-	-
Bromobenzene	µg/kg	5	NONE	-	< 5.0	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Butylbenzene	µg/kg	5	NONE	-	< 5.0	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	< 5.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number	287172	287173	287174	287175	287176
Sample Reference	DS06	DS07	DS07	DS08	DS09
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.80	0.30	0.70	0.50	0.35
Date Sampled	12/08/2024	13/08/2024	13/08/2024	12/08/2024	13/08/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	25.7	< 0.1	< 0.1	26.9	-
Moisture Content	%	0.01	NONE	4	10	16	4.2	-
Total mass of sample received	kg	0.1	NONE	0.7	0.8	0.8	0.7	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	Detected	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	MWI	-	MWI	MWI
Actinolite detected	Type	N/A	ISO 17025	-	Not-detected	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	Not-detected	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	Not-detected	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	Detected	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	Not-detected	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	Not-detected	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	< 0.001	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	Loose Fibres	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.4	8.5	7.7	8.3	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	0.008	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	67	180	90	9	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	33.6	90	44.7	4.49	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	0.8	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	< 50	-
Total Sulphur	%	0.005	MCERTS	-	-	-	< 0.005	-
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	-	-	-	< 0.5	-
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	< 0.05	-
Organic Matter (automated)	%	0.1	MCERTS	0.8	3.8	3.5	0.8	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.5	2.2	2	0.5	-
Water Soluble Nitrate (2:1) as N	mg/kg	2	NONE	-	-	-	< 2.0	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	-	< 2.0	-
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	-
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	-
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Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number	287172	287173	287174	287175	287176
Sample Reference	DS06	DS07	DS07	DS08	DS09
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.80	0.30	0.70	0.50	0.35
Date Sampled	12/08/2024	13/08/2024	13/08/2024	12/08/2024	13/08/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	1.9	0.15	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	2	0.17	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	6.3	1.3	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	4.3	0.76	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	0.1	49	11	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	13	2.7	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	0.09	98	17	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	0.06	87	14	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	42	6.9	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	41	7.1	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	44	7.1	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	18	3.5	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	39	6.1	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	18	2.7	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	5.7	0.66	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	19	3	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	489	84.2	< 0.80	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.8	12	8	4.6	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	19	120	50	45	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.43	0.63	0.49	0.35	-
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	0.3	< 0.2	< 0.2	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.2	-
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	16	14	12	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.3	33	22	7.1	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	10	330	53	70	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1	0.3	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	18	14	13	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1	< 1.0	< 1.0	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	15	26	23	14	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	31	50	33	38	-

Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	< 2.5	-
Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	< 5.0	-

Analytical Report Number: 24-036444

Project / Site name: Drake Street

Your Order No: 150824 3931

Lab Sample Number	287172	287173	287174	287175	287176
Sample Reference	DS06	DS07	DS07	DS08	DS09
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.80	0.30	0.70	0.50	0.35
Date Sampled	12/08/2024	13/08/2024	13/08/2024	12/08/2024	13/08/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	-	-	< 8.4	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	< 10	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	< 10	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	-	-	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	< 10	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	< 10	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	-	-	< 8.4	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	< 10	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	< 10	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	< 10	920	180	-	-
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	-	-
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	< 10	920	180	-	-

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-

Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number				287172	287173	287174	287175	287176
Sample Reference				DS06	DS07	DS07	DS08	DS09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.80	0.30	0.70	0.50	0.35
Date Sampled				12/08/2024	13/08/2024	13/08/2024	12/08/2024	13/08/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number				287177	287178
Sample Reference				DS10	DS10
Sample Number				None Supplied	None Supplied
Depth (m)				0.15	1.30
Date Sampled				12/08/2024	12/08/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	61.9	< 0.1
Moisture Content	%	0.01	NONE	5.7	4.2
Total mass of sample received	kg	0.1	NONE	0.8	0.8

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	MWI	-
Actinolite detected	Type	N/A	ISO 17025	-	-
Amosite detected	Type	N/A	ISO 17025	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	6.9	5.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Total Sulphate as SO ₄	%	0.005	MCERTS	-	0.025
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	14	56
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	6.89	27.8
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	0.8
Total Sulphur	mg/kg	50	MCERTS	-	110
Total Sulphur	%	0.005	MCERTS	-	0.011
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	-	< 0.5
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	< 0.05
Organic Matter (automated)	%	0.1	MCERTS	2.2	0.3
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.3	0.2
Water Soluble Nitrate (2:1) as N	mg/kg	2	NONE	-	< 2.0
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	< 2.0
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0	< 5.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-
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Analytical Report Number: 24-036444

Project / Site name: Drake Street

Your Order No: 150824 3931

Lab Sample Number				287177	287178
Sample Reference				DS10	DS10
Sample Number				None Supplied	None Supplied
Depth (m)				0.15	1.30
Date Sampled				12/08/2024	12/08/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.06	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.07	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.48	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.84	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.8	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.42	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.55	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.52	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.23	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.4	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.2	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.24	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	4.85	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.4	16
Barium (aqua regia extractable)	mg/kg	1	MCERTS	100	51
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.57	0.6
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	10
Lead (aqua regia extractable)	mg/kg	1	MCERTS	210	8.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	23	29
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	65	49

Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	< 2.5
Magnesium (water soluble)	mg/kg	5	NONE	-	< 5.0

Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number				287177	287178
Sample Reference				DS10	DS10
Sample Number				None Supplied	None Supplied
Depth (m)				0.15	1.30
Date Sampled				12/08/2024	12/08/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-
TPHCWG - Aliphatic >EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	-	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-
TPHCWG - Aliphatic >EC5 - EC44 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-
TPHCWG - Aromatic >EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	-	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-
TPHCWG - Aromatic >EC5 - EC44 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-

TPH Total >EC6 - EC40 _{EH_CU+HS_1D_TOTAL}	mg/kg	10	NONE	17	< 10
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Petroleum Range Organics (EC6 - EC10) _{HS_1D_TOTAL}	mg/kg	1	ISO 17025	< 1.0	< 1.0
TPH (EC10 - EC40) _{EH_CU_1D_TOTAL}	mg/kg	10	MCERTS	17	< 10

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-
Chloroethane	µg/kg	5	NONE	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-
Chloroform	µg/kg	5	ISO 17025	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-
Benzene	µg/kg	5	MCERTS	-	-
Carbontetrachloride	µg/kg	5	NONE	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-

Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Lab Sample Number				287177	287178
Sample Reference				DS10	DS10
Sample Number				None Supplied	None Supplied
Depth (m)				0.15	1.30
Date Sampled				12/08/2024	12/08/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-
Toluene	µg/kg	5	MCERTS	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-
Styrene	µg/kg	5	ISO 17025	-	-
Bromoform	µg/kg	5	NONE	-	-
o-Xylene	µg/kg	5	MCERTS	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-
Bromobenzene	µg/kg	5	NONE	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-
Butylbenzene	µg/kg	5	NONE	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number: 24-036444
Project / Site name: Drake Street
Your Order No: 150824 3931

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
287173	DS07	0.30	166	Loose Fibres	Chrysotile	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Analytical Report Number : 24-036444
Project / Site name: Drake Street

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
287162	DS01	None Supplied	0.2	Brown loam with gravel and vegetation
287164	DS02	None Supplied	1.25	Brown loam and clay with gravel
287165	DS03	None Supplied	0.6	Brown loam with gravel and vegetation
287167	DS04	None Supplied	1.6	Brown loam with gravel and stones
287168	DS05	None Supplied	0.5	Brown loam with gravel and vegetation
287169	DS05	None Supplied	0.8	Brown loam with gravel and vegetation
287170	DS05	None Supplied	1.35	Brown clay and sand with vegetation and stones
287171	DS06	None Supplied	1	Brown loam with gravel and vegetation
287172	DS06	None Supplied	1.8	Brown sand with gravel and stones
287173	DS07	None Supplied	0.3	Brown loam and sand with gravel
287174	DS07	None Supplied	0.7	Brown loam and clay with gravel and vegetation
287175	DS08	None Supplied	0.5	Brown loam and sand with gravel and stones
287177	DS10	None Supplied	0.15	Brown loam with vegetation and stones
287178	DS10	None Supplied	1.3	Brown sand with gravel

Analytical Report Number : 24-036444

Project / Site name: Drake Street

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references	HSE Report No: 83/1996, HSG 248 (2021), HSG 264 (2012) & SCA Blue Book (draft)	A006B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES	In-house method based on TRL 447	L038B	D	NONE
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS

Analytical Report Number : 24-036444

Project / Site name: Drake Street

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078B	W	NONE
Water Soluble Nitrate (leachate equivalent)	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078	W	NONE
Nitrate, water soluble, in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078	W	NONE
Hexavalent chromium in soil (low level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser	In-house method	L082B	D	MCERTS
Ammonium as NH ₄ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS

Analytical Report Number : 24-036444

Project / Site name: Drake Street

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



APPENDIX 6

CHEMICAL LABORATORY SCREENING TABLE



APPENDIX 7

CLAIRE JIWG ASBESTOS IN SOIL DECISION MATRIX TOOL



Joint Industry Working Group
Asbestos in Soil and Construction & Demolition Materials

Project Reference	3931
Site Name	Drake Street
Client	Great Places Housing Group
Run by	AJ
Date	18-Nov-25
Scenario details	Re-use of Made Ground outside of private gardens and areas of soft landscaping

Decision Support Tool for CAR2012 Work Categories

Stage 1

Hazard Factors

Score

Select ACM type (run model for each type to generate 'Worst Case' output)
Extent of degradation of ACMs at outset of work
Friability and degree of bonding by matrix (ACM matrix, not ground materials)
Distribution of Visible Asbestos Across Affected Area
Amount of asbestos fibre in selected ACM/fibre type as % of host material

Free dispersed fibres/fibre bundles	2
Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
No visible ACMs/fibre bundles	0
Trace quantities - <0.0001 to 0.001 %wt/wt	0

Sub-total

0

Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs

Hazard ranking

Negligible

No warranty, expressed or implied, or reliance, is provided in relation to the use of this tool.

It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.



Joint Industry Working Group

Asbestos in Soil and Construction & Demolition Materials

Stage 2

Exposure Factors

Score

Anticipated airborne fibre concentration - Control Limit or SALI?

<0.001 fibres/ml

0

Anticipated duration of exposure to asbestos

> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)

4

Activity type and effect on deterioration of ACMs during work

Not low intensity, significant deterioration expected

4

Best description of primary host material matrix (soil/made ground)

Made Ground - Recycled Aggregate, Track Ballast

4

Respirable fibre index for ACM - RIVM report 711701034 (2003)

High

4

Sub-total

16

Exposure ranking

High

Combined hazard and exposure ranking

16

Low



Stage 3

Risk Assessment Outputs

Probable Licensing Status	CAR do not apply
RPE*	None
Dust Suppression**	None
Hygiene/Decontamination***	None

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.

**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)

***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis



APPENDIX 8

GROUND GAS AND GROUNDWATER DEPTH MONITORING RESULTS



Gas & Groundwater Monitoring

Site: Drake Street

Job No.: 3931

Exploratory Hole	Date	Time	Engineer	Response zone range (m bgl)	Water level (m bgl)	Base level (m bgl)	Atm. pressure (mbar)	Pressure Trend	Flow		CH ₄		LEL		Hex		CO ₂		O ₂			H ₂ S (ppm)	CO		Total Volatiles (PID)		Remarks	
									(l/hr)	steady	peak	steady	peak	steady	peak	steady	peak	steady	high	steady	low		peak	peak	peak	steady		
																										(%)		(%)
DS01	21/08/2024	11:38	LL	2.00 - 3.00	2.33	2.90	998	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	11.3	11.3	20.6	4.5	4.5	1	1	1.3	1.2	Redipped at 12:02 to 2.35m bgl. Redipped at 12:07 to 2.34m bgl.		
	21/11/2025	10:42:00	JA		2.03	2.73	1010	Steady	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	4.8	4.8	20.1	7.8	7.8	1	10	-	-	Bailed to 2.13m bgl at 10:55; Redipped at 11:10 to 2.04m bgl.		
	03/12/2025	13:32:00	JA		1.99	2.75	987	Steady	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	1.2	1.2	20.2	18.6	18.4	1	1	-	-	Bailed to 2.25m bgl at 13:42; Redipped at 13:50 to 2.04m bgl.		
	05/01/2026	14:20:00	JA		2.05	2.75	997	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	8.6	8.6	20.1	2.9	2.9	1	1	-	-	Bailed to 2.18m bgl at 14:25; Redipped at 14:45 to 2.05m bgl.		
	26/01/2026	10:10:00	JA		2.07	2.82	987	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	6.1	6.1	19	6.2	6.2	1	1	-	-	Bailed to 2.25m bgl at 10:15; Redipped at 10:29 to 2.07m bgl.		
	06/02/2026	10:55:00	JA		2.10	2.80	974	Steady	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.3	0.3	19.3	18.9	18.9	1	1	-	-	Bailed to 2.37m bgl at 10:59; Redipped at 11:10 to 1.10m bgl.		
	21/08/2024	11:05	LL		2.00 - 4.00	DRY	3.92	998	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	3.3	3.3	20.3	18.9	18.9	1	1	1.6	0.1	N/A	
21/11/2025	10:27:00	JA	DRY	3.74		1010	Steady	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	0.1	0.1	20.0	20.0	20.0	1	1	-	-	-			
03/12/2025	13:22:00	JA	DRY	3.75		989	Steady	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	4.5	4.5	18.5	15.5	15.5	1	1	-	-	-			
05/01/2026	14:31:00	JA	DRY	3.74		996	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	4.5	4.5	19.7	15.7	15.7	1	1	-	-	-			
26/01/2026	10:18:00	JA	DRY	3.80		987	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	4.3	4.3	18.7	15.1	15.1	1	1	-	-	-			
06/02/2026	11:01:00	JA	DRY	3.80		972	Steady	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	4.4	4.4	19.4	15.3	15.3	1	1	-	-	-			
21/08/2024	11:22	LL	3.00 - 4.00	DRY		3.91	998	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	3.5	3.5	20.7	18.6	18.6	1	1	1.5	1.5	N/A		
21/11/2025	09:47:00	JA		DRY	3.90	1010	Steady	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	3.2	3.2	19.9	17.5	17.5	1	1	-	-	-			
03/12/2025	13:45:00	JA		DRY	3.88	987	Steady	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	4.5	4.5	19.6	16.6	16.6	1	1	-	-	-			
05/01/2026	14:39:00	JA		DRY	3.88	996	Rising	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	3.6	3.6	19.9	17.2	17.2	1	1	-	-	-			
26/01/2026	10:23:00	JA		3.78	3.83	987	Falling	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	3.9	3.9	18.7	16.0	16.0	1	1	-	-	-			
06/02/2026	11:05:00	JA		3.77	3.83	972	Steady	0.1	0.1	0.1	0.1	0.1	0.1	0.001	0.001	3.7	3.7	19.4	16.5	16.5	1	1	-	-	-			

Response zone flooded. Results considered unreliable in accordance with BS8485:2015 + A1 2019

Values recorded below instrument detection limit

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