

Phase 2: Site Investigation

53-55 Heathbank Road, Manchester

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PHASE 2 SITE INVESTIGATION REPORT

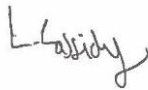
53-55 HEATHBANK ROAD, MANCHESTER

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Revision	Date	Prepared By	Signed
Revision 2	December 2025	D Simpson <i>Geotechnical Engineer</i>	
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1 EXECUTIVE SUMMARY

Site Address	53-55 Heathbank Road, Manchester, M9 0WA
Proposed Development	The site is outlined for a residential development.
Fieldwork	<ul style="list-style-type: none"> • 4no small percussive boreholes (BH01 to BH04 inclusive) to a maximum depth of 5.00m below ground level (bgl). • 1no hand excavated trial pit (HP01) was dug to a maximum depth of 1.20mbgl as access to BH05 was restricted due to undergrowth.
Ground Conditions	<ul style="list-style-type: none"> • Very sandy, slightly gravelly to gravelly topsoil was proven within BH's 02 to 04 and in HP01 to depths between 0.10mbgl and 0.40mbgl. Within BH01 0.10m of tarmac surfacing was proven. The tarmac and topsoil elsewhere (except BH04) overlay very sandy gravel and very gravelly sand to depths of between 0.40mbgl and 0.70mbgl. Locally cobbles of sandstone were encountered in this granular fill. Slightly sandy slightly gravelly clay underlay the granular fill within BH's 01, 02 and HP01 to a depth of 1.00mbgl. • Natural ground generally comprised soft to firm clay to depths of between 3.90mbgl (BH01) and 5.00mbgl (BH02). Firm and stiff slightly sandy and slightly gravelly clay underlay the made ground within BH03 and BH04 to 1.00mbgl within both boreholes. This was underlain with the soft to firm clay but in BH04 a layer of loose sand was encountered from 4.20mbgl to 4.60mbgl. • Groundwater was encountered within BH04 only at 3.60mbgl within the soft clay.
Contamination Testing Results	<ul style="list-style-type: none"> • Five made ground samples tested. • No significantly elevated organic or inorganic determinants. • No asbestos fibres. • Alkaline pH.
Contamination Analysis	<ul style="list-style-type: none"> • Given the site's proposed residential land use, the levels of contamination recorded on site are unlikely to pose a risk to the current and future users of the site. • If any zones of odorous, brightly coloured or suspected contaminated ground or groundwater are encountered then work should cease in that area until the material has been investigated. The results of the investigation will therefore determine whether or not remediation will be required. • Made ground classed as posing a low risk with respect to construction workers. PPE for workers. Damping down of site during dry windy conditions. • Suitable growing medium required for all proposed areas of soft landscaping, to 0.50m. This is in excess of the 450mm rooting depths required by Manchester City Council for grassed areas. • Imported material, if utilised, should undergo the sampling ratios set out in Manchester City Council Guidance. For greenfield imported soils this would be 1 sample per 200m³. • Controlled waters unlikely to be at risk. • With respect to utilities phenol was elevated; as a minimum all services should be laid in clean trenches. • Sub surface concrete should be designed to DS-1 ACEC (Class AC-1). This assumes mobile groundwater conditions.
Geotechnical Testing Results	<ul style="list-style-type: none"> • Cohesive deposits low to medium strength (28kPa-68kPa) based on in-situ hand vanes. • Cohesive materials on site have a low volume change potential. • Moisture contents between 19 and 27%. • Sulphates between <10-190mg/l, pH acidic to slightly alkaline. • 2no. soakaway tests returned infiltration rates of 0.00×10^{-6} m/sec for both tests
Geotechnical Analysis & Foundation Recommendations	<ul style="list-style-type: none"> • Bearing capacity of 80kN/m² at minimum depth of 2.00mbgl on 0.60m wide strips. • Local deepening of foundations due to depth of soft ground. • For greater loadings, mini-piled foundations may be required. • Settlements within 25mm. • Normal earthworks plant for excavations.

2 INTRODUCTION

2.1 Authorisation

The site investigation described in this report was carried out by Solmek to the instructions of Mr Stef Olsz, on land located at 53-55 Heathbank Road, Manchester, M9 0WA (Figure 1).

Sources of information, including previous work undertaken at the site, are detailed below:

- *Solmek Phase 1 Desk Study (S250447) May 2025.*

Reference should be made to the above reports for details of the site's history and environmental setting.

2.2 Scope of Works

The site is expected to be developed with new residential housing, comprising 2no semi-detached dwellings with associated parking and soft landscaping (Drawing 21.043 P03, Appendix A).

The following steps may be required in the investigation and remediation of potentially contaminated land:

- Phase 1: Desk Study
- Phase 2: Intrusive Investigation
- Phase 3: Remediation Statement
- Phase 4: Validation Reports

Phases 1 and 2 are generally required in the redevelopment of most sites. Phases 3 and 4 are subject to the findings of the initial stages.

A geotechnical and environmental (Phase 2) investigation including a ground gas risk assessment was requested. The fieldwork and testing was generally carried out according to;

- BS 5930:2015+A1:2020 Code of Practice for Ground Investigations
- BS 10175:2011+A1:2013 Investigation of Potentially Contaminated Sites – Code of Practice.
- CIRIA C665:2007 Assessing Risks Posed by Hazardous Ground Gas to Buildings
- BS 8485:2015+A1:2019 Code of Practice for the Characterization and Remediation from Ground Gas in Affected Developments
- Rock and soil descriptions shall be in accordance with BS EN ISO 14689-1:2003, BS EN ISO 14688-1:2002 and BS EN ISO 14688-2:2004

This report forms part of a Stage 1 Risk Assessment (Generic Quantitative Risk Assessment) with respect to the Environment Agency's guidance document Environment Agency *Land Contamination Risk Management*, which replaced the now-withdrawn *Contaminated Land Report 11 – Model Procedures for the Management of Land Contamination (2004)*.

The information provided in this report is based on the investigation fieldwork and is subject to the comments and approval of the various regulatory authorities. There may be other conditions prevailing on the site which have not been disclosed by this investigation and which have not been taken into account by this report. Solmek reserve the right to alter conclusions and recommendations should further information be available or provided. Any schematic representation or opinion of the possible configuration of ground conditions between exploratory holes is conjectural and given for guidance only and confirmation of intermediate ground conditions should be considered if deemed necessary.

3 SITE DESCRIPTION

A site inspection, as recommended in BS 5930 and BS 10175, was undertaken on 8th May 2025. The site is centred at Ordnance Survey Co-ordinates 385430, 404090 and covers approximately 0.08Ha.

The site is located on a parcel of land between the residential dwellings of 51 & 57 Heathbank Road, Manchester.

The site is a disused undeveloped parcel of land surrounded by residential properties, with the northern boundary of Heathbank Road and residential fenced gardens to the remaining three boundaries. Vehicular access to the site is via a gap between low fencing, in the north of the site.

The site is a roughly rectangular area of undeveloped land that is generally flat and has an even topography. It consists of a small area of hardstanding and gravel to the North bordering the road, whilst the remainder of the site comprises overgrown vegetation.

Mature and semi-mature deciduous trees were noted sporadically across the eastern, southern and western boundaries of the site.

Fly-tipped material was noted sporadically across the site and was most notable in the southwest and west of the site.

The surrounding area of the site mostly comprises semi-detached residential dwelling, with Heathbank road directly to the North of the site. Victoria Avenue is situated 60m to the North of the site with a number of commercial retail businesses and a parcel of disused hard standing 80m to the NW.

4 FIELDWORK

The fieldwork was carried out on 14th August 2025. The extent of the investigation was:

- 4no small percussive boreholes (BH01 to BH04 inclusive) to a maximum depth of 5.00m below ground level (bgl).
 - The boreholes were evenly spread around the site to achieve maximum site coverage.
- 1no hand excavated trial pit (HP01) was dug to a maximum depth of 1.20mbgl as access to the proposed location of BH05 was restricted due to undergrowth.
- Insitu testing in the exploratory positions as Standard Penetration Tests (SPTs) and hand shear vanes.
- Retrieval of samples for geotechnical and chemical testing.

The boreholes were respectively backfilled with clean arisings upon completion.

Descriptions of the strata encountered in the boreholes together with details of sampling and groundwater are presented in Appendix B of this report. A plan showing the location of the boreholes can be found in Appendix A (Figure 2).

5 GROUND CONDITIONS

A summary of the ground conditions encountered is given below. The exploratory hole logs are presented in Appendix B.

5.1 Made Ground

Very sandy, slightly gravelly to gravelly topsoil was proven within BH's 02 to 04 and in HP01 to depths between 0.10mbgl and 0.40mbgl. The gravel component comprised brick, asphalt and locally mudstone, sandstone and limestone. Infrequent rootlets were recorded.

Within BH01 0.10m of tarmac surfacing was proven. The tarmac and topsoil elsewhere (except BH04) overlay very sandy gravel and very gravelly sand to depths of between 0.40mbgl and 0.70mbgl. The gravel comprised brick, asphalt and sandstone. Locally cobbles of sandstone were encountered in this granular fill. Slightly sandy slightly gravelly clay underlay the granular fill within BH's 01, 02 and HP01 to a depth of 1.00mbgl. The gravel comprised coal and brick.

5.2 Natural Deposits

Proven to underlie the made ground deposits across the site, natural ground generally comprised soft to firm slightly sandy, locally silty, clay to depths of between 3.90mbgl (BH01) and 5.00mbgl (BH02). Firm and stiff slightly sandy and slightly gravelly clay of low plasticity underlay the made ground within BH03 and BH04 to

1.00mbgl within both boreholes. This was underlain with the soft to firm clay but in BH04 a layer of sand was encountered from 4.20mbgl to 4.60mbgl.

Underlying the softer shallow clays, firm and firm to stiff gravelly clay of low to intermediate plasticity was encountered to the base of every borehole at 5.00mbgl. The gravel component comprised coal.

5.3 Groundwater

Groundwater was encountered within BH04 only at 3.60mbgl within the soft clay.

It should be noted the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with a number of influences including season, rainfall, dewatering and pumping activities. Therefore, water levels significantly higher than those found during this investigation may be encountered.

6 CONTAMINATION TESTING RESULTS

The proposed development of the site is to involve the construction of residential homes with associated gardens, parking and access roads. The chemical samples were generally retrieved in line with BS ISO 18400-105:2017 *Soil Quality. Sampling*. The chemical results are presented in Appendix C.

6.1 Site Characterisation

Within the Solmek Phase 1 Desk Study, a preliminary conceptual model was formed based on the information obtained. The initial risk was based on the site history which recorded generally open land throughout the site's history.

An overall very low to moderate risk was provided for various receptors:

- Human Health – Moderate/Low
- Controlled Water – Very Low
- Current Site Users (on-site workers/visitors) – Low
- Vegetation – Low
- Construction Materials – Moderate/Low

6.2 Contamination Testing and Rationale

To provide information upon the possibility of ground contamination 5no samples of made ground were selected for shallow contamination testing. A very low to moderate overall contamination risk was highlighted in the Phase 1 Desk Study due to previous land uses. This coupled with the end use being Residential with Home Grown Produce means that five samples are considered appropriate for testing. The samples selected are detailed below:

- BH01 – 0.10-0.30m (Made ground – granular)
- BH02 – 0.10-0.30m (Made ground – granular)
- BH03 – 0.10-0.30m (Made ground – granular)
- BH04 – 0.00-0.20m (Made Ground – topsoil)
- HP01 – 0.10-0.30m (Made ground – granular)

The samples selected are considered to provide coverage of the made ground from across the site that would be most likely to be exposed during future site works. The samples were tested for the following contaminant suites:

- 5no Metals, semi-metals, non-metals, inorganic determinants
- 5no Asbestos identification screenings
- 5no Speciated Polyaromatic Hydrocarbons (PAHs)
- 5no Total Petroleum Hydrocarbon Criteria Working Group fractions (TPHCWG)

6.3 Test Results

Based on the proposed development at the site, the test results have been compared to a series of Land Quality Management (LQM) Suitable for Use Levels (S4UL) based on a residential with home grown produce land use. These are the most up to date thresholds published in 2015.

The value for lead has been compared with the Category 4 Screening Level (March 2014) developed by Contaminated Land: Applications In Real Environments (CL:AIRE).

The test results are presented in Appendix C, and a summary is provided below in Tables 1 & 2.

TABLE 1: SUMMARY OF INORGANIC CONTAMINATION TESTING RESULTS

Determinand	Units	Number of Samples above Level of Detection	Minimum Recorded Level	Maximum Recorded Level	Residential with HGP Threshold Value	Number of Results Exceeding Threshold Value
Metals						
Cadmium	mg/kg	5	0.3	0.6	11	0
Chromium	mg/kg	5	9.0	20	910	0
Copper	mg/kg	5	16	30	2400	0
Lead	mg/kg	5	14	79	200*	0
Mercury	mg/kg	3	<0.05	0.08	40	0
Nickel	mg/kg	5	8.3	17	180	0
Zinc	mg/kg	5	48	100	3700	0
Semi metals and non metals						
Arsenic	mg/kg	5	7.0	9.2	37**	0
Boron	mg/kg	5	0.2	0.4	290	0
Selenium	mg/kg	1	<0.5	0.7	250	0
Inorganic chemicals						
Cyanide	mg/kg	0	<0.1	-	1.49**	0
W.S. Sulphate	mg/l	5	13	35	2000^	0
Other						
pH	pH	-	7.3	7.9	5.5^	0
* Category 4 Screening Levels, March 2014 ** CLEA Software Version 1.06 (pH7 and 1%SOM) ^ EA Threshold Values HGP Home Grown Produce						

6.4 Metals, Semi Metals and Non Metals

None of the samples indicated significant raised levels of contamination above the S4UL threshold values, based on the five samples tested.

6.5 Inorganic Chemicals

Soluble sulphates (potentially aggressive to foundation concrete) were recorded between 13 and 35mg/l. None of the samples were elevated above levels affecting human health, or above the BRE Special Digest 1 500mg/l limit for the sulphate classification of concrete.

The results of the pH testing were between 7.3 and 7.9. These pH levels are consistent with slightly alkaline conditions.

6.6 Organic Chemicals

The organic thresholds vary depending on the levels of soil organic matter (SOM).

The average SOM recorded across the site was 2.10% therefore a SOM of 1.00% has been used to determine the S4UL thresholds. Table 2, below, summarises the results.

TABLE 2: SUMMARY OF ORGANIC CONTAMINATION TESTING RESULTS

Determinand	Units	Number of Samples above LOD	Minimum Level	Maximum Level	S4UL 1% SOM	S4UL 2.5% SOM	S4UL 6% SOM	Number of Results Exceeding Threshold Value
TPH Aliphatic Fractions								
C5-6	mg/kg	0	<0.01	-	42	78	160	0
C6-8	mg/kg	0	<0.01	-	100	230	530	0
C8-10	mg/kg	0	<0.01	-	27	65	150	0
C10-12	mg/kg	0	<1.5	-	130	330	760	0
C12-16	mg/kg	0	<1.2	-	110	2400	4300	0
C16-35	mg/kg	0	<3.4	-	65000	92000	110000	0
TPH Aromatic Fractions								
C5-7 (Benzene)	mg/kg	0	<0.01	-	70	140	300	0
C7-8 (Toluene)	mg/kg	0	<0.01	-	130	290	660	0
C8-10	mg/kg	0	<0.01	-	34	83	190	0
C10-12	mg/kg	0	<0.9	-	74	180	380	0
C12-16	mg/kg	0	<0.5	-	140	330	660	0
C16-21	mg/kg	5	0.88	3.68	260	540	930	0
C21-35	mg/kg	4	<1.4	213.6	1100	1500	1700	0
Speciated PAH								
Naphthalene	mg/kg	0	<0.1	-	2.3	5.6	13	0
Acenaphthylene	mg/kg	0	<0.1	-	170	420	920	0
Acenaphthene	mg/kg	1	<0.1	0.2	210	510	1100	0
Fluorene	mg/kg	1	<0.1	0.24	170	400	860	0
Phenanthrene	mg/kg	4	<0.1	2.6	95	220	440	0
Anthracene	mg/kg	4	<0.1	0.67	2400	5400	11000	0
Fluoranthene	mg/kg	4	<0.1	5.4	280	560	890	0
Pyrene	mg/kg	4	<0.1	4.5	620	1200	2000	0
Benzo(a)anthracene	mg/kg	4	<0.1	2.1	7.2	11	13	0
Chrysene	mg/kg	4	<0.1	2.1	15	22	27	0
Benzo(b)fluoranthene	mg/kg	4	<0.1	1.6	2.6	3.3	3.7	0
Benzo(k)fluoranthene	mg/kg	3	<0.1	0.93	77	93	100	0
Benzo(a)pyrene	mg/kg	4	<0.1	2.3	2.2	2.7	3.0	1
Benzo(ghi)per' ene	mg/kg	3	<0.1	1.5	320	340	350	0
Diben(ah)anth' ene	mg/kg	0	<0.1	-	0.24	0.28	0.30	0
Id' (123cd)pyrene	mg/kg	3	<0.1	1.6	27	36	41	0
Total PAH	mg/kg	4	<1.6	26	50*	50*	50*	0
Phenol	mg/kg	4	<0.3	1.7	280	550	1100	0
* EA Threshold Values								

From the five samples tested for organic determinants, one very slight exceedance was recorded:

- BH04 (0.00-0.20m) recorded very slightly elevated benzo(a)pyrene

This level can be discounted as the soil organic matter level for this sample (5.1%) would place the threshold at 2.7mg/kg. No other samples indicated raised levels of contamination above the S4UL threshold values, based on the five samples tested.

6.7 Asbestos

From the five samples subject to asbestos screening, no asbestos fibres were recorded.

6.8 Environmental Protection Act 1990: Part 2A Revised Statutory Guidance (April 2012)

This revised document explains how the Local Authority should decide if land, based on a legal interpretation, is contaminated. The document replaces the previous guidance given in Annex 3 of DEFRA Circular 01/2006, issued in accordance with section 78YA of the 1990 Environmental Protection Act.

The main objectives of the Part 2A regime are to “identify and remove unacceptable risks to human health and the environment” and to “seek to ensure that contaminated land is made suitable for its current use”. Part 2A uses a risk based approach to defining contaminated land whereby the “risk” is interpreted as “the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land” and by “the scale and seriousness of such harm or pollution if it did occur”.

For a relevant risk to exist a contaminant, pathway and receptor linkage must be present before the land can be considered to be contaminated. The document explains that *“for a risk to exist there must be contaminants present in, on or under the land in a form and quantity that poses a hazard, and one or more pathways by which they might significantly harm people, the environment, or property; or significantly pollute controlled waters.”*

A conceptual model is used to develop and communicate the risks associated with a particular site.

To determine if land is contaminated the local authority use various categories from 1 to 4. Categories 1 and 2 include “land which is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health.” Categories 3 and 4 “encompass land which is not capable of being determined on such grounds”.

See Appendix E for additional notes on contamination guidelines.

7 CONCEPTUAL MODEL AND CONTAMINATION ANALYSIS

The contamination conceptual model in Table 3 identifies the potential pollution linkages present on site based on source – pathway – receptor relationships.

TABLE 3: CONCEPTUAL MODEL

Source	Pathway	Receptor	Risk Rating	Comments
Asphyxiating or explosive ground gases <ul style="list-style-type: none"> Made ground (<1.00m) Not in Radon Affected Area Coal Mining 	Ground gas migration <ul style="list-style-type: none"> Migration through permeable soils Inhalation 	Future site users <ul style="list-style-type: none"> Adult & infant residents 	Low	Gas risk low as shallow made ground is present, with a low content of putrescible material.
		Users during development <ul style="list-style-type: none"> Construction workers 	Low	
Areas of contamination hazardous to human health (Residential Thresholds) <ul style="list-style-type: none"> 5no samples tested No significantly elevated organic determinants No significantly elevated inorganic determinants No Asbestos 	<ul style="list-style-type: none"> Inhalation Dust ingestion Dermal contact 	Future site users <ul style="list-style-type: none"> Adult & infant residents 	Low	Limited availability of contaminants in soil analysis, considered unlikely to pose a risk to future users.
		Users during development <ul style="list-style-type: none"> Construction workers 	Low	As good practice, consideration to be given to Health and Safety Executive: <i>Protection of Workers and the General Public During the Development of Contaminated Land</i> .
	<ul style="list-style-type: none"> Inhalation Dust ingestion 	Users of surrounding sites <ul style="list-style-type: none"> Transient adult workers 	Low	Potential low risk during construction from dust generation. Consideration to be given to dust suppression, in line with BRE: <i>The Control of Dust and Emissions from Construction and Demolition, Best Practice Guidance</i> .
	<ul style="list-style-type: none"> Leaching of mobilised contaminants 	Drift geology <ul style="list-style-type: none"> Secondary Aquifer 	Low	Limited availability of contaminants in soil analysis, aquifers underlying the site are not considered to be at risk.
		Solid geology <ul style="list-style-type: none"> Principal Aquifer 	Low	
	<ul style="list-style-type: none"> Drainage Lateral migration Accumulation of contaminated sediment 	Surface water features <ul style="list-style-type: none"> Pond 1060m to NE 	Low	The distant surface water is highly unlikely to be impacted by the low contamination levels recorded.
Areas of phytotoxic contamination <ul style="list-style-type: none"> No raised phytotoxics 	<ul style="list-style-type: none"> Uptake via roots and leaf surfaces 	Vegetation <ul style="list-style-type: none"> Gardens proposed 	Low	Suitable growing medium to be formed of screened topsoil. Should imported materials be used, these must be demonstrated to be suitable in line with Manchester City Council <i>Planning & Contaminated Land – Technical Guidance</i> . For greenfield imported soils this would be 1 sample per 200m ³ .
Areas of contamination above service fabric or BRE Special Digest 1 thresholds <ul style="list-style-type: none"> Elevated phenol 	<ul style="list-style-type: none"> Direct contact 	Construction Materials <ul style="list-style-type: none"> Concrete 	Low	Class DS-1 ACEC (Class AC-1) requirements for concrete protection.
		Construction Materials <ul style="list-style-type: none"> Service Fabric 	Moderate	PVC piping to be avoided and prudent to lay any service within a clean bedding.

In general terms, construction workers and construction materials are **potentially most** at risk as pollution linkages may be present for each of these receptors. Users of the site, users of the surrounding sites, and vegetation are considered to be **potentially** at risk from contamination in the soils on site. Controlled waters are considered to be at **potentially less** of a risk.

Mitigation measures to reduce the risks identified for each receptor are discussed in the following sections.

7.1 Users of the Site Once Development is Complete

The users of the site, particularly construction workers, are likely to be exposed to contaminants present in the soils beneath the site during redevelopment work. **Potential** exposure pathways include dermal absorption after contact with contaminated ground, inhalation of soil or dust, inhalation of volatised compounds, and inadvertent soil ingestion.

To establish if the levels of contaminants present on site may pose a risk to the health of the future users of the site the results of the contamination testing have been compared to a series of LQM S4UL thresholds based a residential with home grown produce land use. (see Tables 1 and 2).

The levels of contaminants across the site are generally low with no exceedances. On-site material is therefore considered suitable for re-use.

The new development is expected to comprise new residential properties with associated gardens/access roads. Based on the **shallow** soil contamination testing, it is considered that the levels of contamination are unlikely to pose a risk to future users of the site.

7.2 Construction Workers and Users of Surrounding Sites

Short term human exposure to contaminants present in soils can occur via several pathways during the construction and ground works phase of the development. These include dermal absorption after contact with contaminated ground, inhalation of soil or dust (including windblown dust), inhalation of volatised compounds, inadvertent soil ingestion and contact with contaminated groundwater.

Very slightly elevated benzo(a)pyrene in BH04 (0.00-0.20m) was recorded. It is considered that such levels of contamination may pose a risk to construction workers and users of surrounding sites, however S4ULs assume long term exposure to contamination and therefore relate primarily to chronic health risks. The risk of short-term acute exposure (e.g. to construction workers) falls under the *Health and Safety at Work Act: 1974* and underlying regulations, such as the *Control of Substances Hazardous to Health (COSHH, 2002)* Regulations. The levels of contamination and the associated risks to site workers should be considered under the *Construction Design and Management (CDM, 2015)* regulations during the planning of works and the preparation of the designers and contractors Health and Safety Plans and Method Statements.

As good practice, full PPE must be employed in accordance with Health and Safety Executive: *Protection of Workers and the General Public During the Development of Contaminated Land* and safeguards should be taken to limit dust during ground works, and access to the public should be restricted. Construction workers should use gloves as a precaution when handling any fill materials. Provision of suitable hygiene facilities are needed for site workers.

Although asbestos or other forms of contamination were not detected from the soil samples subjected to testing within this investigation, the possibility still exists that asbestos containing materials may still be present on site and currently lie undetected. It is therefore advised that a 'watching brief' is undertaken during the initial site strip and any excavation works and advice sought if asbestos is found or suspected.

During dry weather, any excavations may require clean water to be sprinkled at shallow depth to prevent excess dust escaping to off-site receptors. Monitoring of dust concentrations during construction should be given careful consideration to ensure occupational exposure levels are not exceeded. Works should be undertaken in line with BRE: *The Control of Dust and Emissions from Construction and Demolition, Best Practice Guidance*.

7.3 Vegetation

Plants can be affected by soil contamination in a number of ways resulting in growth inhibition, nutrient

deficiencies and yellowing of leaves. Contaminants are taken up by plants through the roots and through foliage. Contaminants identified as being highly phytotoxic include boron, cadmium, copper, nickel, and zinc.

To establish if the levels of contaminants present on site may pose a risk to vegetation the results of the contamination testing have been compared to a series of threshold values published in *Code of Good Agricultural Practice for the Protection of Soil*. No concentrations of the phytotoxic determinants are shown as elevated from the five samples tested.

Any areas of soft landscaping will require a suitable growing medium. Proposed garden areas should be excavated to 0.50mbgl or natural ground, whichever is shallower. The suitable growing medium should comprise 200mm topsoil over up to 300mm of subsoil. The suitable growing medium may utilise on-site materials, based on the contamination testing undertaken to date, however, care must be taken to stockpile any excavated material away from any potential sources of contamination. The topsoil and subsoil should be screened of any deleterious materials (i.e. ash, slag, brick rubble and concrete). Should imported materials be used, these must be demonstrated to be suitable in line with Manchester City Council *Planning & Contaminated Land – Technical Guidance*. For greenfield imported soils this would be 1 sample per 200m³, increasing to 1 sample per 100m³ for remediated soils and 1 sample per 50m³ for brownfield or unknown soils.

7.4 Ground and Surface Water

The principal pathway by which soil contamination may reach the water environment is through a slow seepage or leaching to groundwater or surface water. The potential for contaminants to migrate along such pathways is dependent on the chemical and physical characteristics of the contaminants and the local hydrogeology.

7.4.1 Hydrogeological Context

From the site investigation undertaken, ground conditions broadly comprise made ground (<1.00m) over drift deposits comprising silty clays (low permeability) encountered to depths of 5.00mbgl. The drift deposits are designated as a Secondary Aquifer by the Environment Agency.

The published geology indicates the site is underlain by solid geology which is designated as a Principal Aquifer by the Environment Agency.

The nearest surface water feature is a pond 1060m to the northeast.

With respect to groundwater, during the fieldwork shallow strikes were noted at 3.60mbgl in BH04.

7.4.2 Contamination Context

No contamination was recorded based on the five soil samples tested.

7.4.3 Hydrogeological Risk Assessment

Due to the generally low contamination found across the site, the aquifer designations beneath the site, and the distance to surface waters, the development is considered to represent a low risk to groundwater or surface water receptors.

The encountered contamination levels are generally low, and the hydrogeological sensitivity of the site and surrounding area is also considered to be low.

7.5 Construction Materials

Materials at risk from potential soil contamination include inorganic matrices such as cement and concrete and also organic material; e.g. plastics and rubbers. Acid ground conditions and elevated levels of sulphates can accelerate the corrosion of building materials. Plastics and rubbers are generally used for piping and service ducts and are potentially attacked by a range of chemicals, most of which are organic, particularly petroleum-based substances. Drinking water supplies can be tainted by substances that can penetrate piping and water companies enforce stringent threshold values.

7.5.1 Concrete Classification

BRE Special Digest One: *Concrete in Aggressive Ground*: 2005 3rd Edition has been used to assess the risks posed to underground concrete and to establish the design measures required to mitigate the risks. The results of the pH and water-soluble sulphate tests (when converted to total potential sulphate) fall into Class DS-1 ACEC (Class AC-1) requirements for concrete protection. This assumes mobile groundwater conditions.

7.5.2 Water Supply Pipes Material Selection

The levels of potential contaminants should be compared to thresholds supplied in the UK Water Industry Research (UKWIR) publication *Guidance for the selection of Water Supply Pipes to be used in Brownfield Sites* (January 2011). A Brownfield Site is defined in the document as "Land or premises that have previously been used or developed that may be vacant or derelict". It should be noted that Brownfield sites may not be contaminated. The guidance does not apply to Greenfield Sites however water companies may have their own assessment criteria which should be checked by the developer.

Based on the samples tested during the site investigation, levels of acidic to alkaline pH (5.7 to 7.9) were recorded across the site at depths of between 0.10mbgl and 2.40mbgl within the made ground and natural samples.

The concentrations of the selected determinants should be compared to the pipe material selection table in Appendix E, and consultation with the appropriate utility supply company is required to identify the most suitable service fabric. However, the phenol levels may preclude the use of PVC pipes depending on the depth of proposed service corridors.

7.6 Unexpected Contamination

If during the initial site strip or subsequent ongoing construction activities, any zones of odorous, brightly coloured or suspected contaminated ground, or suspected Asbestos Containing Materials (ACMs) are encountered, then the following procedure should be followed:

- Stop work in the affected area
- Contact Solmek and provide pictures of the affected area
- Solmek can visit site to investigate the material and provide guidance
- If required – Solmek can sample and test the material
- Once test results are returned, this will determine whether or not remediation will be required

The developer and their contractors should have regard to these instructions as a Watching Brief. The findings of the Watching Brief, and any alterations to the agreed works, should be reported in due course.

7.7 Waste Classification

During the site strip and construction activities, material may be required to be removed from site. Any such material would require classification, in line with Environment Agency Technical Guidance *Waste Classification: Guidance on the classification and assessment of waste* (2015). This would classify the material as either Non-Hazardous or Hazardous Waste.

Once the material has been classified, determining the suitable landfill for disposal is governed by landfill directive Waste Acceptance Criteria (WAC) testing, with landfills categorized as Inert Waste, Stable Non-Reactive Hazardous Waste and Hazardous Waste.

If waste classification and/or WAC testing are not undertaken, material taken off site may be subject to WAC testing by the appropriate waste disposal company. The decision on whether or not to accept waste, or whether further testing is required, is at the discretion of the waste disposal company.

For this project, Waste Classification has not been requested by the client. Waste classification, in line with the aforementioned EA guidance, would be needed to classify the material as Hazardous or Non-Hazardous Waste. WAC testing would then be required to determine the suitability of the material for the relevant landfill.

8 GEOTECHNICAL TESTING AND ANALYSIS

Samples taken from the boreholes underwent a series of geotechnical tests at a UKAS accredited laboratory to aid foundation design and soil description. In addition, in-situ Standard Penetration Tests (SPTs) and Hand Shear Vanes were undertaken at regular intervals during drilling/excavation. The geotechnical results are presented in Appendix D.

8.1 Strength and Density

8.1.1 SPT N Values

Standard Penetration Tests undertaken within the natural cohesive deposits yielded N values of between 6 and 13. These N values can be correlated to provide approximate shear strengths, with these results indicating low to medium strength deposits.

8.1.2 Hand Shear Vanes

Hand shear vane testing within the natural cohesive deposits returned results ranging 28kPa to 68kPa, which are indicative of low to medium strength conditions.

8.2 Moisture Contents

Five samples recovered from the boreholes and trial pit have been subject to moisture content tests to determine the moisture profile at depths of between 1.00 and 2.00mbgl. Moisture levels were between 19% and 27%.

8.3 Atterberg Determinations

Five Atterberg Limit Determination tests were carried out on samples of cohesive material to classify the finegrained soils. The results were compared to the Casagrande Chart published in BS 5930 and showed the samples to generally be clay of low to intermediate plasticity.

The Plasticity Indices ranged from 10 to 17 with moisture contents recorded above the corresponding plastic limits. The cohesive material can be assessed as having a **low** shrinkage potential in relation to NHBC Standards Chapter 4.2.

8.4 Particle Size Distribution and Sedimentation Testing

One sample from BH02 at 1.50m was subject to Particle Size Distribution (PSD) tests in accordance with BS1377 Part 2 to aid soil descriptions. In addition to the PSD test, the sample was then subjected to sedimentation analysis using a hydrometer to further classify the fine grained soils (i.e. the quantities of clay and silt). The results have been used to prepare precise soil descriptions in accordance with BS5930:2015 Section 6 and are presented in Appendix D.

8.5 pH and Sulphate Results

Five samples of natural soil from the boreholes and trial pit were tested for acidity and soluble sulphate content to assess whether the material may be potentially aggressive to building fabric. The results of the testing for pH ranged from 5.7 to 7.5 indicating acidic to slightly alkaline conditions. Soluble sulphates were recorded at levels ranging from <10mg/l to 190mg/l.

8.6 Foundations

The encountered cohesive deposits were generally soft, with strengths ranging from low to medium. Depending on proposed loadings, it may be possible to utilise deepened conventional deposits.

Alternatively, if greater loadings are required, piled or mini-piled foundations may be required.

8.6.1 Conventional Foundations upon Cohesive Deposits

Based on plasticity index results, all cohesive soils at the site should be regarded as being of low volume

change potential. Foundations should therefore be placed at a minimum depth of 0.75m below original or finished ground level, whichever is the lower. However locally the made ground is up to 1.00m deep, also low strength clay is present to around 2.00mbgl, therefore foundations will have to be deepened accordingly.

Based on a conservative undrained shear strength of 31kN/m² a safe bearing capacity of 80kN/m² has been determined for strip foundations 0.60m wide founding on the natural low strength clay at depths of around 2.00mbgl. Providing the safe bearing capacity is not exceeded settlements have been calculated to be less than 25mm.

Locally, foundations will require deepening due to made ground and soft clay depths. All deepened sections should be adequately stepped, in accordance with NHBC Standards Chapter 4.4.

Foundations near existing or proposed trees should be deepened and provided with appropriate heave precautions in accordance with NHBC Standards Chapter 4.2.

It should be recognised that clay rich soils can deteriorate fairly rapidly on exposure, particularly in periods of wet weather and frost. It would be prudent to protect all exposed soils in foundation excavations with a concrete blinding layer, particularly if they are likely to remain open for extended period of time.

8.6.2 Mini-Piled Foundations

Should greater loadings be required, mini-piled foundations should be adopted. Information provided in this report should be made available to a competent piling contractor who can design appropriate foundations in accordance with Section 7: Pile foundations of BS EN 1997 – 1:2004 which applies to end-bearing piles, friction piles, tension piles and transversely loaded piles installed by driving, by jacking, and by screwing or boring. The piling contractor will need to take into consideration the possible effects of negative skin friction from made ground and soft deposits. Allowance should be made for breaking through known and unknown buried obstructions.

The precise method of pile installation and the applicability of proprietary systems, diameters and depths required would need to be determined by a specialist piling contractor.

Further drilling may be required to inform the design of an appropriate piling solution.

8.6.3 Ground Slabs

Made ground is in excess of 600mm and a suspended reinforced ground slab or precast concrete floor should therefore be used. However, if the made ground was removed from beneath the foot print of the building and a blanket of compacted inert granular fill was placed in accordance with an engineering specification, ground bearing slabs may be possible, if applicable.

8.6.4 General Foundation Comments

It is recommended that an adequate drainage system for surface water be installed by a competent contractor in order to prevent surface water ponding or collecting during and post construction, which may in turn lead to deterioration of the founding stratum.

Prior to placing foundation concrete, obvious soft or loose spots should be removed and replaced with suitably recompacted hardcore or lean mix concrete. In addition, all excavations should be inspected to ensure that they fully penetrate areas of disturbed ground.

Further advice should be sought from Solmek if unexpected ground conditions are encountered during redevelopment.

8.7 Excavation

Based on the nature of the ground conditions encountered, excavations should be within the capacity of normal earthworks plant although breaking out of obstructions should be anticipated. Stability of excavations will be poor in the made ground but should improve in the deeper natural clay. Excavation sides should be designed, constructed and supported in accordance with the recommendations given in CIRIA Report No. 97: "Trenching Practice".

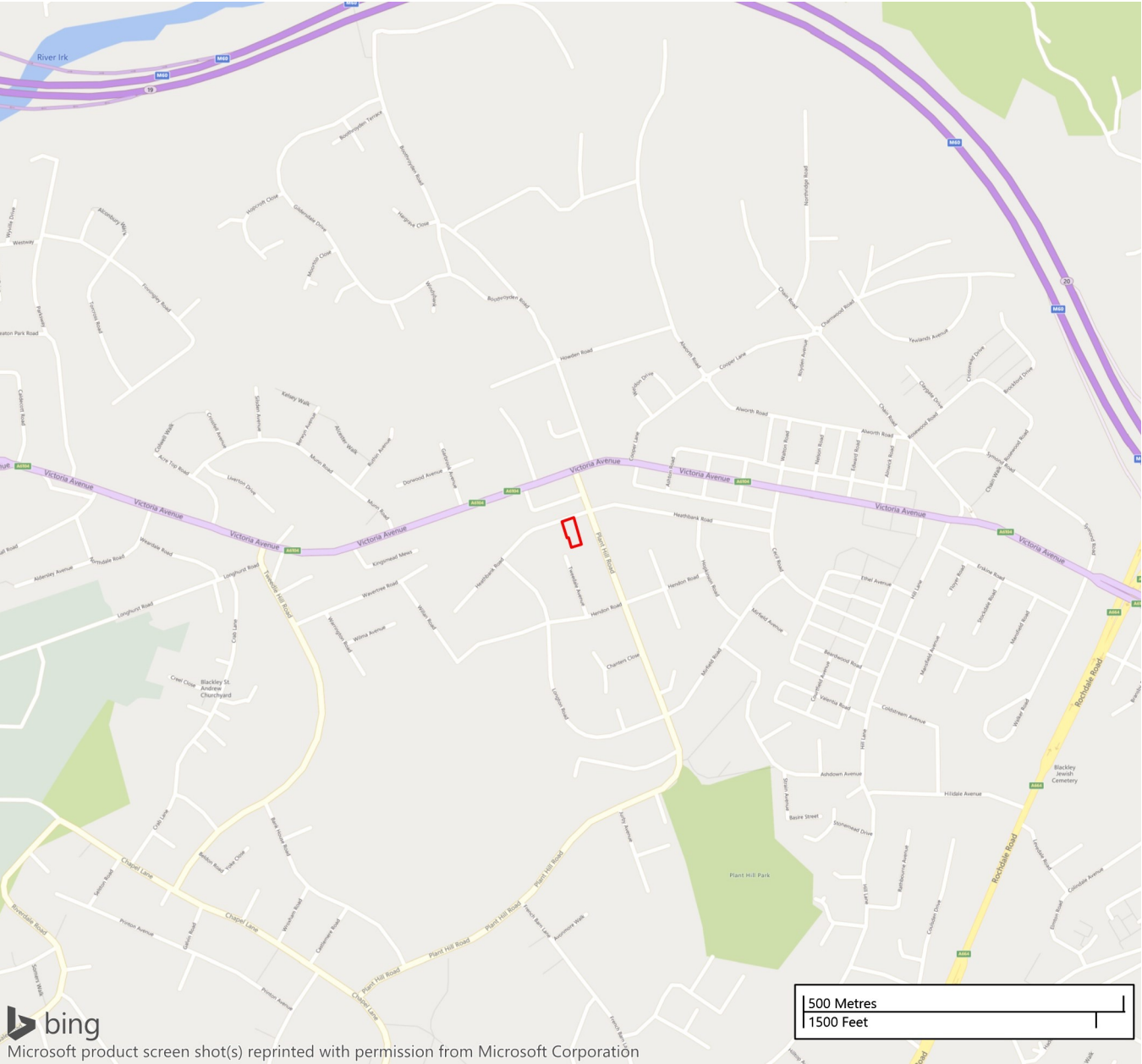
8.8 Groundwater

Groundwater was encountered within BH04 only at 3.60mbgl within the soft clay.

It should be noted the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with a number of influences including season, rainfall, dewatering and pumping activities. Therefore, water levels significantly higher than those found during this investigation may be encountered.

SOLMEK

APPENDIX A: Figures & Drawings



12-16 Yarm Road, Stockton on Tees, TS18 3NA
Tel: 01642 607083 Email: info@solmek.com

Figure Title

Site Location Plan

Project Number

S250447

Project Name

Heathbank, Manchester

Client

Mr Stef Olszanski

Date

September 2025

DRG Number

Figure 1

Scale

1:10000 @ A4 [DO NOT SCALE]

Legend Key

 Project Bounds - Project Bounds



12-16 Yarm Road, Stockton on Tees, TS18 3NA
Tel: 01642 607083 Email: info@solmek.com

Figure Title

Exploratory Hole Location Plan

Project Number

S250447

Project Name

Heathbank, Manchester

Client

Mr Stef Olszanski

Date

September 2025

DRG Number

Figure 2

Scale

1:1000 @ A4 [DO NOT SCALE]

Legend Key

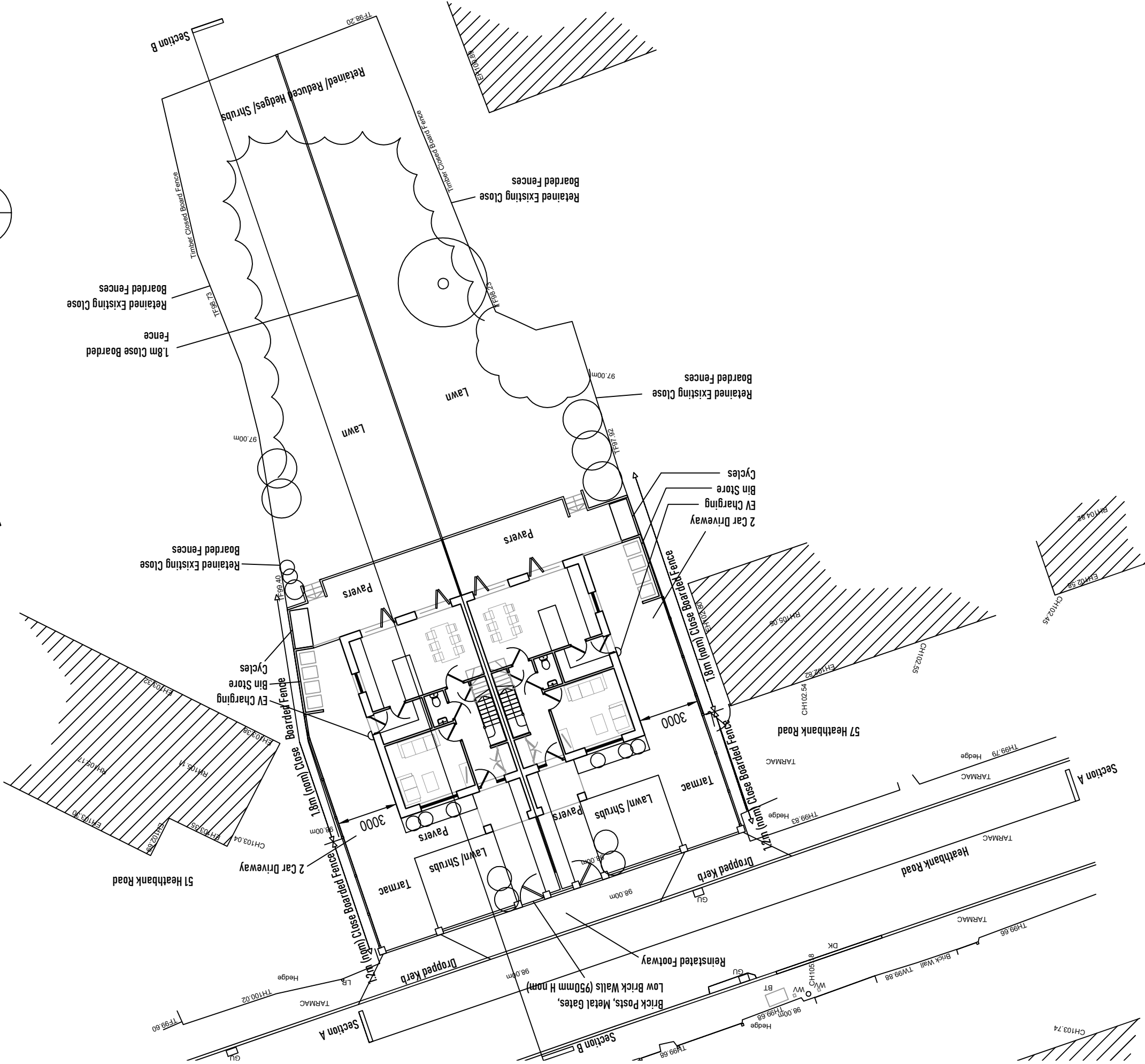
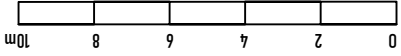
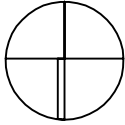
- Locations By Type - BH
- Locations By Type - TP
- Project Bounds - Project Bounds

NOTE: DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS TO BE CHECKED ON SITE TO BE READ IN CONJUNCTION WITH ALL RELEVANT CONSULTANTS DOCUMENTATION

Construction (Design and Management) Regulations 2015

Designer Considerations

Paul Carr Design Ltd's duty on this project is that of "Designer" as defined by Regulation 9, and have avoided foreseeable risks to those involved in the construction and future use of the structure and in so doing eliminated foreseeable hazards (so far as is reasonably practicable), taking account of other design considerations) and reduced risks associated with those hazards.
The Designer has provided adequate information about any significant risks associated with the design and co-ordinated the work with others in order to improve the way in which risks are managed and controlled. The associated risks are restricted to site or project specific risks and as such are not considered as a complete and final list of all hazards that may exist



Survey By Tricad Solutions Ltd

client:	project:	53+55 Heathbank Road, Manchester	drawing:	revision:	drawn:	checked:	date:	scale @ A3
21.04.3	P03	D	SP	PC	19/05/22	1:200		

revision: D - Building Footprint Amended / SP
date: 09/11/22
revision: C - Building Footprint Amended / SP
date: 17/08/22
revision: B - Drives/ Front Gardens Amended / SP
date: 07/07/22
revision: A - Hard Landscape Amendments / SP
date: 08/06/22

project no:	drawing no:	revision:	drawn:	checked:	date:	scale @ A3
21.04.3	P03	D	SP	PC	19/05/22	1:200

PAUL CARR DESIGN Ltd

ARCHITECTURE - URBAN DESIGN

m: 07771 756 812 e: paul.carr@paulcarrdesign.com



APPENDIX B: Borehole & Trial Pit Logs

<div> SOLMEK</div> <div>12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com</div>				<div>Borehole Log</div>						<div>Scale 1:50 Sheet 1 of 1</div> <div>BH01</div>	
Contract no: S250447		Site: Heathbank, Manchester				Driller: SR Drilling Ltd Plant used: Mini Rig Started: 14/08/2025		GL (AOD): Easting: 385415 Northing: 404106			
Client: Mr Stef Olszanski				Ended: 14/08/2025		Logged: AS		Status: FINAL			
Method: Small Percussive				Backfilled: 14/08/2025							
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing						
					Depth (m)	Type	Results				
                                                          											

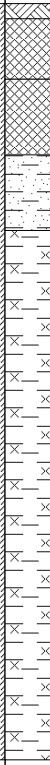
                                                           

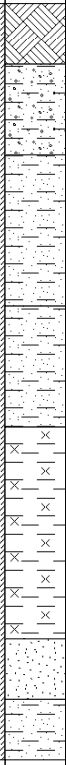
                                                           

     | | | | | | | | | | | |

<div><div> SOLMEK</div><div>12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com</div></div>				<div>Borehole Log</div>						<div>Scale 1:50 Sheet 1 of 1</div> <div>BH02</div>		
<div>Contract no: S250447</div>		<div>Site: Heathbank, Manchester</div>				<div>Driller: SR Drilling Ltd</div> <div>Plant used: Mini Rig</div> <div>Started: 14/08/2025</div> <div>Ended: 14/08/2025</div> <div>Backfilled: 14/08/2025</div>			<div>GL (AOD):</div> <div>Easting: 385425</div> <div>Northing: 404109</div> <div>Logged: AS</div> <div>Status: FINAL</div>			
<div>Client: Mr Stef Olszanski</div>												
<div>Method: Small Percussive</div>												
<div>Backfill / Installation</div>	<div>Legend</div>	<div>Depth (m)</div>	<div>Level (m AOD)</div>	<div>Stratum Description</div>	<div>Samples and Insitu Testing</div>							
					<div>Depth (m)</div>	<div>Type</div>	<div>Results</div>					
		0.10		Brown very sandy, gravelly TOPSOIL. Sand is fine to coarse. Gravel is fine to coarse, angular to sub-angular of asphalt-like material and brick. MADE GROUND: Brown/orange, very sandy gravel with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to very angular of brick and sandstone. Cobbles are angular to sub-angular of sandstone. MADE GROUND: Stiff, multicoloured (orange, grey, brown), slightly sandy, slightly gravelly clay. Sand is fine to coarse. Gravel is fine to medium, angular to sub-angular of coal, brick. Infrequent rootlets. Soft to firm, grey/brown slightly sandy medium strength CLAY.	0.10 - 0.30	ES	68kPa					
		0.50			0.50 - 0.70	ES						
		1.00			1.00 - 1.20	B						
					1.20	HV						
		1.50		Soft, black/grey, low to medium strength silty CLAY of intermediate plasticity.	1.50 - 1.90	B	N=13 (3,3/4,3,3,3)					
					2.00 - 2.45	SPT (S)						
					2.50 - 2.90	B						
					3.00	HV						
					3.50 - 3.90	B	36kPa					
					4.00 - 4.45	SPT (S)						
					4.60 - 5.00	B						
					5.00	HV						
		5.00			End of Borehole at 5.000m			5.00		59kPa		

 <div>12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com</div>		<h1>Borehole Log</h1>					Scale 1:50 Sheet 1 of 1					
Contract no: S250447		Site: Heathbank, Manchester			Driller: SR Drilling Ltd Plant used: Mini Rig Started: 14/08/2025		GL (AOD): Easting: 385424 Northing: 404095					
Client: Mr Stef Olszanski					Ended: 14/08/2025		Logged: AS					
Method: Small Percussive					Backfilled: 14/08/2025		Status: FINAL					
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing							
					Depth (m)	Type	Results					
   		0.10		Brown, very sandy, gravelly TOPSOIL. Sand is fine to coarse. Gravel is fine to medium, angular to sub-angular of brick.	0.10 - 0.30	B+ES						
		0.70		MADE GROUND: Brown/orange, very gravelly sand. Sand is fine to coarse. Gravel is fine to medium, angular to sub-angular of brick.	0.70 - 0.90	ES						
		1.00		Firm, multicoloured (brown, orange, grey), slightly sandy CLAY. Sand is fine to coarse.	1.00 - 1.20	B						
				Firm to soft, grey slightly sandy low to medium strength CLAY of low plasticity.	1.20 - 1.65	SPT (S)	N=6 (1,0/1,1,3,1)					
					2.00 - 2.45	SPT (S)	N=7 (2,2/2,2,2,1)					
					2.00 - 2.40	B						
					3.00	HV	49kPa					
					3.00 - 3.40	B						
					4.00 - 4.45	SPT (S)	N=6 (2,2/1,2,2,1)					
					4.00 - 4.40	B						
		4.60		Firm, grey, medium strength silty CLAY.	4.60 - 5.00	B						
		5.00		End of Borehole at 5.000m	5.00	HV	63kPa					
Hole Diameter		Casing Depths		General Remarks	Chiselling			Ground Water				
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)		From (m)	To (m)	Time (hr)	Depth Strike (m)	Depth Casing (m)	Depth Sealed (m)	Time Elapsed (min)	Water Level (m)
				1.2m Hand excavated inspection pit dug. No groundwater encountered.								

<div><div>12-16 Yarm Road Stockton on Tees TS18 3NA 01642 607083 info@solmek.com</div><div>Borehole Log</div></div>				Scale 1:50 Sheet 1 of 1				BH04								
Contract no: S250447				Site: Heathbank, Manchester				Driller: SR Drilling Ltd				GL (AOD):				
								Plant used: Mini Rig				Easting: 385423				
								Started: 14/08/2025				Northing: 404084				
Client: Mr Stef Olszanski								Ended: 14/08/2025				Logged: AS				
Method: Small Percussive								Backfilled: 14/08/2025				Status: FINAL				
Backfill / Installation	Legend	Depth (m)	Level (m AOD)	Stratum Description	Samples and Insitu Testing											
					Depth (m)		Type	Results								
		0.40		Dark brown, very sandy, slightly gravelly TOPSOIL. Sand is fine to coarse. Gravel is fine to medium, angular to sub-rounded of mudstone, sandstone, limestone and brick. Infrequent rootlets.	0.00 - 0.20	ES										
				Stiff, brown/grey, slightly sandy slightly gravelly CLAY. Gravel is fine to medium, angular to sub-angular of coal.	0.40 - 0.60	B+ES										
		1.00		Soft, multicoloured (orange, grey, brown) slightly sandy medium strength CLAY of low plasticity.	1.00 - 1.20	B	39kPa									
					1.20	HV										
		2.00		Soft to firm, black slightly sandy low strength CLAY.	2.00 - 2.45	SPT (S)	N=6 (1,1/0,1,3,2)									
					2.00 - 2.40	B										
		2.80		Soft, grey, low to medium strength silty CLAY.	2.80 - 3.20	B	N=7 (1,1/0,2,2,3)									
					3.00 - 3.45	SPT (S)										
		4.20		Brown SAND. Sand is fine to coarse.	3.80 - 4.20	B	N=8 (1,2/2,2,3,1)									
					4.00 - 4.45	SPT (S)										
		4.60		Firm, grey slightly sandy medium strength CLAY.	4.20 - 4.60	B										
					4.60 - 5.00	B										
		5.00		End of Borehole at 5.000m	5.00 - 5.45	SPT (S)	N=7 (1,2/1,2,2,2) 52kPa									
					5.00	HV										

 SOLMEK Solmek Ltd 12-16 Yarm Road Stockton on Tees TS18 3NA Tel: 01642 607083 Email: info@solmek.com				<h1 style="text-align: center;">Trial Pit Log</h1>				TrialPit No HP01 Sheet 1 of 1	
Project Name: Heathbank, Manchester				Project No. S250447		Co-ords: 385433E - 404081N Level:		Date 14/08/2025	
Plant Used: Hand Tools				Dimensions (m): <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">0.10</div> <div style="border: 1px solid black; width: 100px; height: 30px; position: relative;"> <div style="position: absolute; top: -10px; left: 50%; transform: translateX(-50%);">0.10</div> </div> </div>		Scale 1:26		Logged AS	
Client: Mr Stef Olszanski				Depth 1.20					
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10 - 0.30	B+ES		0.10			Brown, very sandy, slightly gravelly TOPSOIL. Sand is fine to coarse. Gravel is fine to medium, angular to sub-angular of brick.		
	0.40 - 0.60	B+ES		0.40			MADE GROUND: Orange/brown, gravelly sand. Sand is fine to coarse. Gravel is medium to fine, angular to sub-angular of brick.		
	1.00 - 1.20	B		1.00			MADE GROUND: Firm, orange/brown, sandy, gravelly clay. Sand is fine to coarse. Gravel is medium to fine, angular to sub-angular of brick.		
	1.20	HV	36kPa	1.20			Soft, multicoloured (grey, orange, brown) slightly sandy CLAY of low plasticity.		1
							End of Pit at 1.200m		2
									3
									4
									5
Remarks: No groundwater enocuntered.									
Stability: Pit wall stable.									

APPENDIX C:

Contamination Laboratory Results

Certificate of Analysis

Certificate Number 25-19698

Issued: 04-Sep-25

Client SOLMEK
12 Yarm Road
Stockton On Tees
Cleveland
TS18 3NA

Our Reference 25-19698

Client Reference ~ S250447

Order No ~ SOL-10019

Contract Title ~ Heathbank, Manchester

Description 5 Soil samples.

Date Received 26-Aug-25

Date Started 26-Aug-25

Date Completed 04-Sep-25

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

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

Approved By



Reyhan Irfan
Operations Manager



2139

Sample Deviations present. See Deviation Table Section for details.

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info-dets@normecgroup.com • normecdets.com

Summary of Chemical Analysis

Matrix Descriptions

Our Ref 25-19698

Client Ref ~ S250447

Contract Title ~ Heathbank, Manchester

Sample ID	Depth	Lab No	Completed	Matrix Description
BH01	0.10-0.30	2558795	04/09/2025	Dark brown/ orange very gravelly, sandy CLAY including odd rootlets (Made ground - brick)
BH02	0.10-0.30	2558796	04/09/2025	Dark brown/ orange very gravelly, sandy CLAY including odd rootlets (Made ground - brick)
BH03	0.10-0.30	2558797	04/09/2025	Dark brown/ orange very gravelly, sandy CLAY including odd rootlets (Made ground - brick)
BH04	0.00-0.20	2558798	04/09/2025	Dark brown very gravelly, sandy CLAY including numerous rootlets (Possible made ground - brick)
HP01	0.10-0.30	2558799	04/09/2025	Dark brown/ orange very gravelly, sandy CLAY including odd rootlets (Possible made ground - glass) (Made ground - brick)

Summary of Chemical Analysis

Soil Samples

Our Ref 25-19698

Client Ref ~ S250447

Contract Title ~ Heathbank, Manchester

Lab No	2558795	2558796	2558797	2558798	2558799
Sample ID ~	BH01	BH02	BH03	BH04	HP01
Depth ~	0.10-0.30	0.10-0.30	0.10-0.30	0.00-0.20	0.10-0.30
Other ID ~					
Sample Type ~	ES	ES	ES	ES	ES
Sampling Date ~	14/08/2025	14/08/2025	14/08/2025	14/08/2025	14/08/2025
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	7.0	8.6	9.2	7.2	8.5
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	0.3	0.3	0.4	0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.3	0.3	0.6	0.3
Chromium	DETSC 2301#	0.15	mg/kg	13	16	16	9.0	20
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	18	16	24	30	23
Lead	DETSC 2301#	0.3	mg/kg	16	14	29	77	79
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.06	0.07	0.08
Nickel	DETSC 2301#	1	mg/kg	13	17	15	8.3	15
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	54	48	68	100	76
Inorganics								
pH	DETSC 2008#		pH	7.3	7.7	7.9	7.6	7.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	2.0	1.4	1.1	5.1	0.9
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	35	16	20	13	21
Petroleum Hydrocarbons								
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC35-EC40: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic C5-C40: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	2.55	2.00	2.18	3.68	0.88
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	213.6	60.33	25.82	62.34	< 1.40
Aromatic >EC35-EC40: EH_2D_AR	DETSC 3521*	1.4	mg/kg	88.33	7.67	2.93	17.55	< 1.40
Aromatic C5-C40: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	304.5	70.00	30.94	83.56	< 10.00
TPH Ali/Aro C5-C40: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	304.5	70.00	30.94	83.56	< 10.00
PAHs								
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	0.20	< 0.10
Fluorene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	0.24	< 0.10

Summary of Chemical Analysis

Soil Samples

Our Ref 25-19698

Client Ref ~ S250447

Contract Title ~ Heathbank, Manchester

Lab No	2558795	2558796	2558797	2558798	2558799
Sample ID ~	BH01	BH02	BH03	BH04	HP01
Depth ~	0.10-0.30	0.10-0.30	0.10-0.30	0.00-0.20	0.10-0.30
Other ID ~					
Sample Type ~	ES	ES	ES	ES	ES
Sampling Date ~	14/08/2025	14/08/2025	14/08/2025	14/08/2025	14/08/2025
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.10	0.15	0.21	2.6	0.20
Anthracene	DETSC 3301	0.1	mg/kg	< 0.10	0.14	0.15	0.67	0.16
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.10	0.39	0.66	5.4	0.50
Pyrene	DETSC 3301	0.1	mg/kg	< 0.10	0.53	0.62	4.5	0.27
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.10	0.71	0.41	2.1	0.37
Chrysene	DETSC 3301	0.1	mg/kg	< 0.10	0.49	0.40	2.1	0.24
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.10	0.25	0.33	1.6	0.18
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.10	0.62	0.19	0.93	< 0.10
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.10	0.47	0.53	2.3	0.22
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.10	0.42	0.49	1.6	< 0.10
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.10	0.21	0.39	1.5	< 0.10
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	4.4	4.4	26	2.1
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.5	0.6	< 0.3	1.7	0.4

Summary of Asbestos Analysis Soil Samples

Our Ref 25-19698

Client Ref ~ S250447

Contract Title ~ Heathbank, Manchester

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2558795	BH01 0.10-0.30	SOIL	NAD	none	Jason Barsby
2558796	BH02 0.10-0.30	SOIL	NAD	none	Jason Barsby
2558797	BH03 0.10-0.30	SOIL	NAD	none	Jason Barsby
2558798	BH04 0.00-0.20	SOIL	NAD	none	Jason Barsby
2558799	HP01 0.10-0.30	SOIL	NAD	none	Jason Barsby

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

Information in Support of the Analytical Results

Our Ref 25-19698
 Client Ref ~ S250447
 Contract ~ Heathbank, Manchester

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date	Containers Received	Holding time exceeded for tests	Incorrect container for tests
		Sampled ~			
2558795	BH01 0.10-0.30 SOIL	14/08/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2558796	BH02 0.10-0.30 SOIL	14/08/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2558797	BH03 0.10-0.30 SOIL	14/08/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2558798	BH04 0.00-0.20 SOIL	14/08/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2558799	HP01 0.10-0.30 SOIL	14/08/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 250µm sieve

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#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 eg. EH+HS_Total or EH_CU+HS_Total

Det

Aliphatic C5-C6

Acronym

HS_1D_AL

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETS 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETS 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETS 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETS 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETS 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETS 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETS 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETS 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETS 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETS 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETS 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETS 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETS 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETS 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETS 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETS 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETS 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETS 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETS 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
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Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

APPENDIX D: Geotechnical Laboratory Results

<h1>Laboratory Report Front Sheet</h1>		G2M Testing (Stockton) 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 033318 info@g2mtesting.co.uk	 10258
Site name	Job number		
Heathbank, Manchester	S250447		

Client details:

Reference: S250447
 Name: Solmek
 Address: 12 Yarm Road,
 Stockton-on-tees,
 TS18 3NA

Telephone: 01642 607083
 Email: lcassidy@solmek.com

FAO: Leo Cassidy

Samples received: 21/08/2025

Date commenced: 28/08/2025

Date reported: 12/09/2025

Observations and interpretations are outside of the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

Samples will be held at the laboratory for a period of 4 weeks after the report date. After the above reporting date the samples will be disposed of. Should further testing be required then the office should be informed before the above date.

Signature: 	Approved Signatories: ☐ D.Anderson (Managing Director) ☒ J. Brischuk (Laboratory Manager) ☐
--	---

Summary of Classification Tests

G2M Testing (Stockton)

12-16 Yarm Road
Stockton on Tees
TS18 3NA

01642 033318

info@g2mtesting.co.uk



10258

Site name

Job number

Heathbank, Manchester

S250447

[illegible]

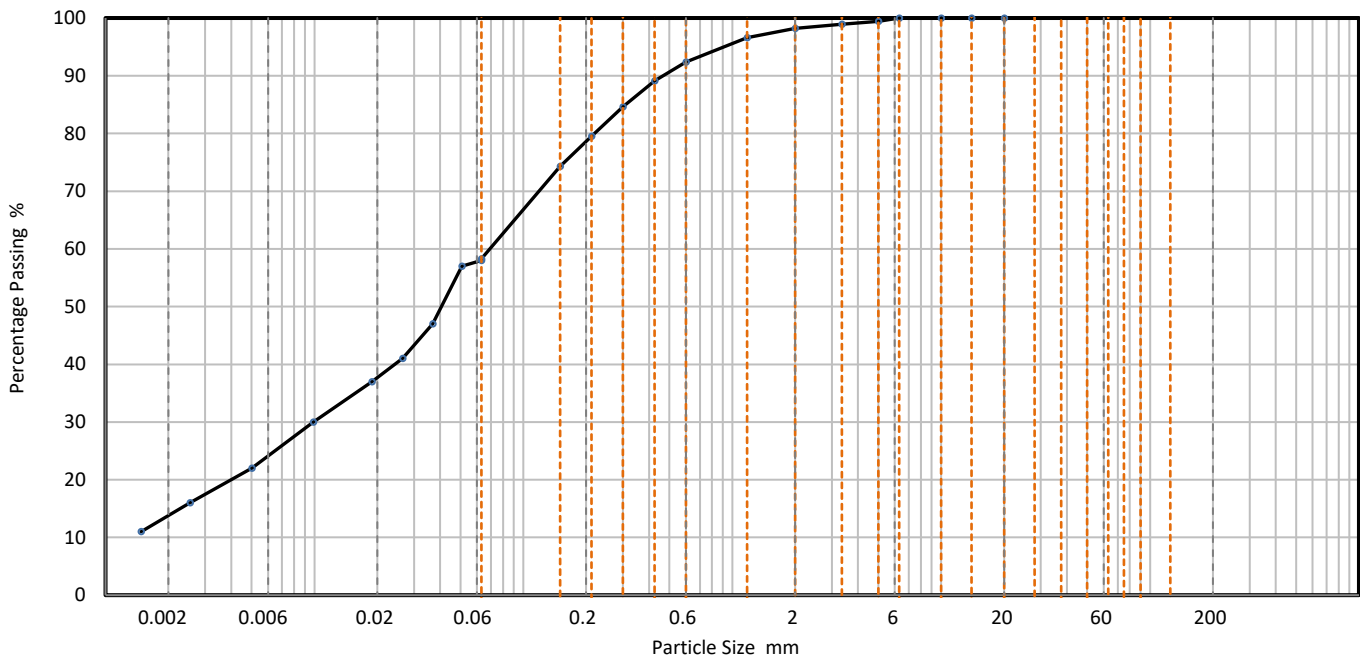
All tests found in G2M Testing UKAS Schedule of Accreditation are tested to standard unless otherwise indicated

Key	Description	Category	BS Test Code
w	Moisture content		BS 1377:1990 Part 2 Clause 3.2
wa	Equivalent moisture content passing 425µm sieve		BS 1377:1990 Part 2 Clause 3.2
wL	Liquid limit Single point Four point	-s	BS 1377:1990 Part 2 Clause 4.4
		-f	BS 1377:1990 Part 2 Clause 4.3
wP	Plastic limit		BS 1377:1990 Part 2 Clause 5.2
Pa	Percentage passing 425um sieve		
Pr	Percentage retained 425um sieve		
IP	Plasticity index		BS 1377:1990 Part 2 Clause 5.4
IL	Liquidity index		BS 1377:1990 Part 2 Clause 5.4
	Suffix indicating test is "Not UKAS Accredited"	*	

Approved by	D Anderson
Approval date	01/09/2025 10:13
Date report generated	
Report Number	

<h1 style="margin: 0;">PARTICLE SIZE DISTRIBUTION</h1>		G2M Testing (Stockton) 12-16 Yarm Road Stockton on Tees TS18 3NA 01642 033318 info@g2mtesting.co.uk	 10258
Site name	Job number		
Heathbank, Manchester	S250447		

Hole	BH02	Lab sample ID	G2MT2025082816
Depth (Top)	m 1.50	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Slightly Gravelly, Clayey, very Sandy, SILT
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
		0.0630	58
		0.0508	57
		0.0368	47
		0.0264	41
		0.0189	37
		0.0099	30
		0.0050	22
20	100	0.0025	16
14	100	0.0015	11
10	100		
6.3	100		
5	99		
3.35	99		
2	98		
1.18	97		
0.6	92	Particle density (assumed) 2.65 Mg/m3	
0.425	89		
0.3	85		
0.212	80		
0.15	74		
0.063	58		

Dry Mass of sample, g	967
-----------------------	-----

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	1.8
Sand	40.0
Silt	44.2
Clay	14.0

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

Remarks
Preparation and testing in accordance with test method unless noted below

Accreditation status
 Hydrometer is the usual Sedimentation method carried out by G2M Testing and is part of the G2M Testing UKAS accreditation schedule.

Approved by	D Anderson
Approval date	12/09/2025 07:09

Certificate of Analysis

Certificate Number 25-19695

Issued: 29-Aug-25

Client SOLMEK
12 Yarm Road
Stockton On Tees
Cleveland
TS18 3NA

Our Reference 25-19695

Client Reference ~ S250447

Order No ~ SOL-10019

Contract Title ~ Heathbank, Manchester

Description 5 Soil samples.

Date Received 26-Aug-25

Date Started 26-Aug-25

Date Completed 29-Aug-25

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

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

Approved By




Louise Cook
Contracts Manager



Sample Deviations present. See Deviation Table Section for details.

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info-dets@normecgroup.com • normecdets.com

Summary of Chemical Analysis

Matrix Descriptions

Our Ref 25-19695

Client Ref ~ S250447

Contract Title ~ Heathbank, Manchester

Sample ID	Depth	Lab No	Completed	Matrix Description
BH01	1.00-1.20	2558784	29/08/2025	Brown slightly gravelly, sandy CLAY
BH02	1.50-1.90	2558785	29/08/2025	Dark brown slightly gravelly, sandy CLAY
BH03	2.00-2.40	2558786	29/08/2025	Dark brown gravelly, sandy CLAY
BH04	1.00-1.20	2558787	29/08/2025	Dark brown slightly gravelly, sandy CLAY
HP01	1.00-1.20	2558788	29/08/2025	Dark brown slightly gravelly, sandy CLAY

Summary of Chemical Analysis

Soil Samples

Our Ref 25-19695

Client Ref ~ S250447

Contract Title ~ Heathbank, Manchester

Lab No	2558784	2558785	2558786	2558787	2558788
Sample ID ~	BH01	BH02	BH03	BH04	HP01
Depth ~	1.00-1.20	1.50-1.90	2.00-2.40	1.00-1.20	1.00-1.20
Other ID ~					
Sample Type ~	D	D	D	D	D
Sampling Date ~	14/08/2025	14/08/2025	14/08/2025	14/08/2025	14/08/2025
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Inorganics								
pH	DETS 2008#		pH	7.5	5.8	6.4	5.7	6.8
Sulphate Aqueous Extract as SO ₄ (2:1)	DETS 2076#	10	mg/l	< 10	190	42	72	18

Information in Support of the Analytical Results

Our Ref 25-19695
Client Ref ~ S250447
Contract ~ Heathbank, Manchester

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date	Containers Received	Holding time exceeded for tests	Incorrect container for tests
		Sampled ~			
2558784	BH01 1.00-1.20 SOIL	14/08/25	PT 500ml	pH + Conductivity (7 days)	
2558785	BH02 1.50-1.90 SOIL	14/08/25	PT 500ml	pH + Conductivity (7 days)	
2558786	BH03 2.00-2.40 SOIL	14/08/25	PT 500ml	pH + Conductivity (7 days)	
2558787	BH04 1.00-1.20 SOIL	14/08/25	PT 500ml	pH + Conductivity (7 days)	
2558788	HP01 1.00-1.20 SOIL	14/08/25	PT 500ml	pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 250µm sieve

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETS 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETS 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETS 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETS 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETS 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETS 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETS 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETS 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
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Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

APPENDIX E:
Notes on Limitations & Contamination Guidance

UK BACKGROUND

Environmental Protection Act 1990: Part 2A Revised Statutory Guidance (April 2012)

This revised document explains how the Local Authority should decide if land, based on a legal interpretation, is contaminated. The document replaces the previous guidance given in Annex 3 of DEFRA Circular 01/2006, issued in accordance with section 78YA of the 1990 Environmental Protection Act.

The main objectives of the Part 2A regime are to *“identify and remove unacceptable risks to human health and the environment”* and to *“seek to ensure that contaminated land is made suitable for its current use”*.

Part 2A uses a risk based approach to defining contaminated land whereby the “risk” is interpreted as *“the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land”* and by *“the scale and seriousness of such harm or pollution if it did occur”*.

For a relevant risk to exist a contaminant, pathway and receptor linkage must be present before the land can be considered to be contaminated. The document explains that *“for a risk to exist there must be contaminants present in, on or under the land in a form and quantity that poses a hazard, and one or more pathways by which they might significantly harm people, the environment, or property; or significantly pollute controlled waters.”*

A conceptual model is used to develop and communicate the risks associated with a particular site.

To determine if land is contaminated the local authority use various categories from 1 to 4. Categories 1 and 2 include *“land which is capable of being determined as contaminated land on grounds of significant possibility of significant harm to human health.”*

Categories 3 and 4 *“encompass land which is not capable of being determined on such grounds”*.

PRELIMINARY CONCEPTUAL MODEL

Preliminary Conceptual Models are undertaken in accordance with CIRIA C552. The Preliminary Conceptual Model assesses the consequence and the likelihood of a risk being realised to provide a risk classification, using the tables detailed below.

CONSEQUENCE OF RISK BEING REALISED (Based on C552 CIRIA, 2001)

Classification	Definition	Example
Severe	Short-term (acute) risk to human health, the environment, an element of the development or other aspect with is likely to result in <i>significant harm</i> , damage or both.	High concentrations of cyanide on the surface of an informal recreational area. Major spills of contaminants from site into controlled water. High concentrations of explosive gas in the subsurface environment that have a clear unobstructed pathway into buildings.
Moderate	Chronic damage to human health, a plausible chance that an event will occur, although the timeline is not immediate to be in the short-term.	Appreciable concentration of contamination that over the longer-term will cause significant harm i.e. high lead concentration in topsoil. Shallow mine workings that are potentially unstable but may remain in a satisfactory or stable conditions for a number of years.
Mild	Low level pollution of non-sensitive water, a feasible hazardous scenario although the timeline of such occurring can probably be considered in 10's of years.	The effect of high sulphate concentrations on structural concrete. Pollution of non-classified groundwater.
Minor	Harm, although not necessarily significant to human health, or with respect to other aspects of the development, which are considered implausible in terms of occurrence, or will have little consequential impact.	The presence of contaminants at such low concentrations that protective equipment is required during site works. Any damage to structures is minimal and will not be structural in characteristics.

PROBABILITY OF RISK BEING REALISED (C552 CIRIA, 2001)

Classification	Definition
High Likelihood	There is a viable pollutant linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence that the receptor has been harmed or polluted.
Likely	There is a viable pollutant linkage and all elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a viable pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a viable pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

RISK CLASSIFICATION MATRIX (C552 CIRIA, 2001)

Risk = Probability x Consequence		Consequence			
		Severe	Moderate	Mild	Minor
Probability	High likelihood	Very high risk	High risk	Moderate risk	Moderate/low risk
	Likely	High risk	Moderate risk	Moderate/low risk	Low risk
	Low likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very low risk

HUMAN RECEPTORS

Human exposure to contaminants present in soils can occur via several pathways. Direct exposure pathways include dermal absorption after contact with contaminated ground, inhalation of soil or dust, inhalation of volatilised compounds, and inadvertent soil ingestion (or deliberate soil ingestion in the case of some children). Other indirect pathways include human ingestion of plants grown in contaminated soil or contaminated ground or surface water. Contaminants associated with wind blown dust can affect humans on surrounding sites.

VEGETATION

Plants can be affected by soil contamination in a number of ways resulting in growth inhibition, nutrient deficiencies and yellowing of leaves. Contaminants are taken up by plants through the roots and through foliage. Contaminants identified as being highly phytotoxic include boron, cadmium, copper, lead, nickel, and zinc.

To establish if the levels of contaminants present on a site may pose a risk to vegetation the results of the contamination testing are compared to a series of threshold values published in 'Code of Good Agricultural Practice for the Protection of Soil'.

GROUNDWATER AND SURFACE WATER RECEPTORS

The principal pathway by which soil contamination may reach the water environment is through a slow seepage or leaching to groundwater or surface water. The potential for contaminants to migrate along such pathways is dependent on the chemical and physical characteristics of the contaminants and the local hydrogeology. Surface watercourses may also accumulate contamination as contaminated sediments are deposited within the water body.

Where the site investigated overlies major/principal aquifers (and in some cases minor/secondary aquifers depending on certain conditions), groundwater Source Protection Zones and areas in close proximity to groundwater abstractions, contamination test results have been compared with the Water Supply (Water Quality) Regulations 1989 and The Water Supply (Water Quality) Regulations 2000.

Should a surface water receptor, such as a fresh water environment (river, canal, stream, lake etc), or marine environment be considered sensitive in relation to a site, then test results are compared with DEFRA & SEPA Environmental Quality Standards (2004). Many of the Environmental Quality Standards are hardness (CaCO_3) depended. Where no hardness values are available, Solmek assume conservative values (of between 0 and 50mg/l).

In the absence of vulnerable ground and surface water environments, Solmek may compare any test results with the Environment Agency Leachate Quality Threshold Values.

DETAILED QUANTITATIVE RISK ASSESSMENT (DQRA)

In line with Environment Agency's guidance document Environment Agency *Land Contamination Risk Management*, which replaced the now-withdrawn *Contaminated Land Report 11 – Model Procedures for the Management of Land Contamination (2004)*, a DQRA for groundwater/human health may be required following a Phase 2 investigation and before the preparation of a Phase 3 Remediation Strategy. For human health DQRA, a site specific assessment criteria is undertaken using CLEA Software Version 1.06. For groundwater DQRA, the Environment Agency Remedial Targets Worksheet Version 3.1 is used.

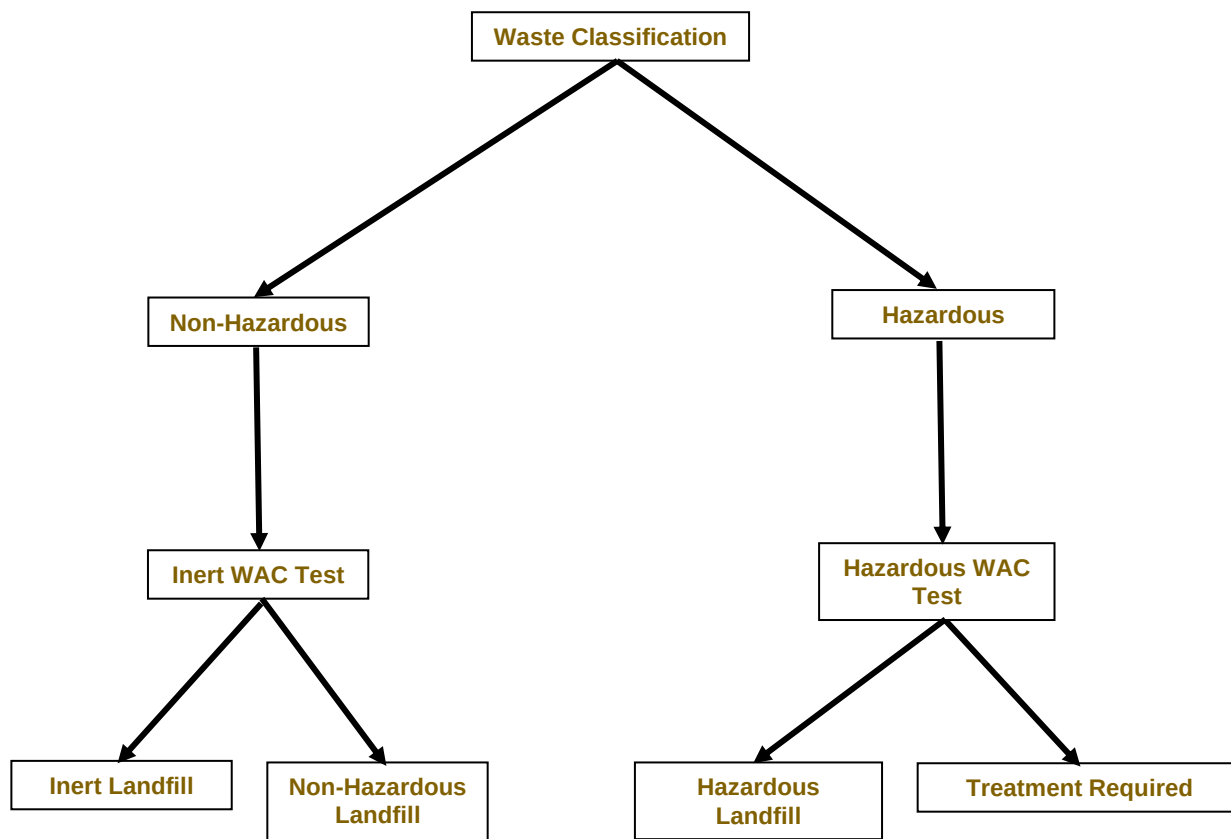
WASTE CLASSIFICATION AND WASTE ACCEPTANCE CRITERIA

During the site strip and construction activities, material may be required to be removed from site. Any such material would require classification, in line with Environment Agency Technical Guidance *Waste Classification: Guidance on the classification and assessment of waste (2015)*. This would classify the material as either Non-Hazardous or Hazardous Waste.

Once the material has been classified, determining the suitable landfill for disposal is governed by landfill directive Waste Acceptance Criteria (WAC) testing, with landfills categorized as Inert Waste, Stable Non-Reactive Hazardous Waste and Hazardous Waste. The WAC testing relates to materials that are to be exported from a site/development to landfill, and do not directly relate to human health specifically. The testing results are generally presented as certificates which can be used by site owners/contractors etc, which should be presented to the accepting waste facility or waste contractor.

If waste classification and/or WAC testing are not undertaken, material taken off site may be subject to WAC testing by the appropriate waste disposal company. The decision on whether or not to accept waste, or whether further testing is required, is at the discretion of the waste disposal company.

The below flow chart provides further information on the waste classification process.



CONSTRUCTION MATERIALS

Materials at risk from possible soil contaminants include inorganic matrices such as cement and concrete and also organic material such as plastics and rubbers. Acid ground conditions and high levels of sulphates can accelerate the corrosion of building materials. Where pH and soluble sulphate analysis has been undertaken, Solmek compare the test results with the guidelines presented within BRE Special Digest 1, 2005 (3rd Edition) 'Concrete in Aggressive Ground'. Plastics and rubbers are generally used for piping and service ducts and are potentially attacked by a range of chemicals, most of which are organic, particularly petroleum based substances. Drinking water supplies can be tainted by substances that can penetrate piping and water companies enforce stringent threshold values.

The levels of potential contaminants should be compared to thresholds supplied in the UK Water Industry Research (UKWIR) publication "Guidance for the selection of Water Supply Pipes to be used in Brownfield Sites" (January 2011). A Brownfield Site is defined in the document as "Land or premises that have not previously been used or developed that may be vacant or derelict". It should be noted that Brownfield sites may not be contaminated. The guidance does not apply to Greenfield Sites however water companies may have their own assessment criteria which should be checked by the developer. The table below outlines the pipe material selection threshold concentrations.

Parameter group	Pipe Material (Threshold concentrations in mg/kg)					
	PE	PVC	Barrier pipe (PE-AL-PE)	Wrapped Steel	Wrapped Ductile Iron	Copper
Extended VOC suite by purge and trap or head space and GC-MS with TIC	0.5	0.125	Pass	Pass	Pass	Pass
+ BTEX + MTBE	0.1	0.03	Pass	Pass	Pass	Pass
SVOCs TIC by purge and trap or head space and GC-MS with TIC (aliphatic and aromatic C5-C10)	2	1.4	Pass	Pass	Pass	Pass
+ Phenols	2	0.4	Pass	Pass	Pass	Pass
+ Cresols and chlorinated phenols	2	0.04	Pass	Pass	Pass	Pass
Mineral oil C11-C20	10	Pass	Pass	Pass	Pass	Pass
Mineral oil C21-C40	500	Pass	Pass	Pass	Pass	Pass
Corrosive (Conductivity, Redox and pH)	Pass	Pass	Pass	Corrosive if pH <7 and conductivity >400µS/cm	Corrosive if pH <5, Eh not neutral and conductivity >400µS/cm	Corrosive if pH <5 or >8 and Eh positive
Specific suite identified as relevant following site investigation						
Ethers	0.5	1	Pass	Pass	Pass	Pass
Nitrobenzene	0.5	0.4	Pass	Pass	Pass	Pass
Ketones	0.5	0.02	Pass	Pass	Pass	Pass
Aldehydes	0.5	0.02	Pass	Pass	Pass	Pass
Amines	Fail	Pass	Pass	Pass	Pass	Pass

REQUIREMENTS OF PARTIES WITHIN THE DEVELOPMENT PROCESS

Interested parties involved in the development process may use the data in different ways and there may be varying views and interpretation of the factual data. Local Authority staff may have a view on contamination and human health and the wider environment. The Environment Agency are concerned principally with the protection of Controlled waters. Building insurers, funders and purchasers may be primarily concerned with issues of potential commercial blight. Purchasers are also not always fully informed, and perceptions on issues associated with risk can affect the decision to purchase. Developers and construction organisations will focus on financial aspects of dealing with the contamination in the context of the development and construction programme.

RISKS & LIABILITIES FROM CONTAMINATION

In simple terms, risks associated with contamination may be considered in terms of 1) statutory risks and 2) development related risks. If contamination is severe or forms a potential hazard based on its potential to affect groundwater, surface water or human health, a statutory risk may be present, and as such, if the risk is not reduced, criminal proceedings may be instigated by a government body or local authority.

If the contamination is less severe or not considered to be mobile, it may be considered a commercial liability which could, in theory remain untreated, but which may at a later date affect the value of the property, or, with changing legislation, become a statutory risk. Commercial liabilities could give rise to civil proceedings by third parties if there are grounds for action.

♣Solmek conditions of offer, notes on limitations & basis for contract (ref: version1/2025)

These conditions accompany our tender and supercede any previous conditions issued. Solmek will prepare a report solely for the use of the Client (the party invoiced) and its agent(s). No reliance should be placed on the contents of this report, in whole or in part by 3rd parties. The report, its content and format and associated data are copyright, and the property of Solmek. Photocopying of part or all of the contents, transfer or reproduction of any kind is forbidden without written permission from Solmek. A charge may be levied against such approval, the same to be made at the discretion of Solmek.

Solmek cannot be held liable and do not warrant, or otherwise guarantee the validity of information provided by third parties and subsequently used in our reports. Solmek are not responsible for the action negligent of otherwise of subcontractors or third parties.

Site investigation is a process of sampling. The scope and size of an investigation may be considered proportional to levels of confidence regarding the ground and groundwater conditions. The exploratory holes undertaken investigate only a small volume of the ground in relation to the overall size of the site, and can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions as encountered within each of the exploratory holes. There may be different ground conditions elsewhere on the site which have not been identified by this investigation and which therefore have not been taken into account in this report. Reports are generally subject to the comments of the local authority and Environment Agency. The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that mobile contamination, ground gas levels and groundwater levels may vary owing to seasonal, tidal and/or weather related effects. Solmek cannot be held liable for any unrecorded or unforeseen obstructions between exploratory boreholes and trial pits. This includes instances where previous structures on the site (buried man made structures) or the presence of boulder clay (cobbles and/or boulder obstructions) have been anticipated. All types of piling operations should make allowance for obstructions within the construction budget to accommodate this. Unrecorded ancient mining may occur anywhere where seams that have been worked and influence the rock and soil above. Dissolution cavities can occur where gypsum or chalk is present. Rotary drilling is the recommended technique to prove the integrity of the rock.

Where the scope of the investigation is limited via access to information, time constraints, equipment limitations, testing, interpretation or by the client or his agents budgetary constraints, elements not set out in the proposal and excluded from the report are deemed to be omitted from the scope of the investigation.

Desk studies are generally prepared in accordance with RICS guidelines. Environmental site investigations are generally undertaken as 'exploratory investigations' in accordance with the definitions provided in paragraph 5.4 of BS 10175:2011 in order to confirm the conceptual assumptions. You are advised to familiarize yourself with the typical scope of such an investigation. No pumping of water will be undertaken unless a licence or facilities/equipment have been arranged by others.

Where the type, number or/and depth of exploratory hole is specified by others, Solmek cannot and will not be responsible for any subsequent shortfall or inadequacy in data, and any consequent shortfall in interpretation of environmental and geotechnical aspects which may be required at a later date in order to facilitate the design of permanent or temporary works.

All information acquired by Solmek in the course of investigation is the property of Solmek, and, only also becomes the joint property of the Client only on the complete settlement of all invoices relating to the project. Solmek reserve the right to use the information in commercial tendering and marketing, unless the Client expressly wishes otherwise in writing. The quoted rates do not include VAT, and payment terms are 30 days from dispatch of invoice from our offices. Quotes are subject to a site visit.

We have allowed for 1 mobilisation and normal working hours unless otherwise stated. The scope of the investigation may be reviewed following the desk study and/or fieldwork. The presence or otherwise of Japanese Knotweed or other invasive plants can be difficult to identify especially during winter months. If Japanese Knotweed or other invasive species are suspect, it should be confirmed by an ecologist. We have not allowed for acquiring services information, and cannot be responsible for damage to underground services or pipes not shown to us or not clearly shown on plans. Costs incurred will be passed on to you, and in commissioning Solmek you understand and accept that you/your agent have a contractual relationship with Solmek & you accept this. Our rates assume unobstructed, reasonably level and firm access to the exploratory positions and adequate clear working areas and headroom. We have priced on the basis that you or your client have the necessary permissions, wayleaves and approvals to access land. All boreholes and pits are backfilled with arisings except where gas monitoring pipes are installed with stopcock covers. Solmek are not responsible for any uneven surfaces as a result of siteworks and rutting and backfilled excavations may require re-levelling and/or making good by others after fieldwork is complete, and Solmek has not allowed for this. No price has been provided or requested for a return visit to remove pipework and covers. Hourly rates apply to consultancy only and do not include expenses unless otherwise shown. If warranties are required, legal costs incurred will be passed on to you assuming Solmek agree to complete such warranties, modified or otherwise and you understand and agree to pay all costs.

We reserve the right to pursue full payment of the invoice prior to release of any information including reports. We advise you/your client that we may elect to pursue our statutory rights under late payment legislation, and will apply 8% to the base rate for unreasonably late payments. Solmek are exempt from the CIS Scheme. Solmek offer to undertake work only in strict accordance with conditions covered by our current insurances, which are available for inspection. Solmek are not responsible for acts, negligent or otherwise of subcontractors and as a matter of policy cannot indemnify any other parties. Professional indemnity Insurance is limited to ten times the invoice net total except where stated otherwise by Solmek. Solmek give notice that consequential loss as a direct or indirect result of Solmek's activities or omission of the same are excluded.