

Phase 2 Ground Investigation

Client: VH Land
Partnerships Limited

High Moor Farm,
Clitheroe

Report No: 1134.02.01

May 2025



Executive Summary

Remada Ltd was commissioned by VH Land Partnerships Limited (hereafter 'the client') to undertake a Phase 2 Ground Investigation for a proposed residential development at High Moor Farm, Clitheroe. This report follows a Phase 1 Preliminary Risk Assessment (Remada report reference 1134.01.01, issued in February 2025).

Summary of Phase 1 Desk Study

The earliest available historical mapping of 1847 indicates the site to be unoccupied as part of a larger series of fields. An unnamed lane bisects the site. By 1886, Highmoor Farm occupies the centre of the site, adjacent to the lane. The site remained relatively unchanged until 1965, where the footprint of the buildings was changed. Since this change, the site has remained relatively unchanged until present day.

Within the surrounding area, the historical mapping has indicated that the present-day Highmoor Car Park car park to the south-west of the study site has been constructed on an area formerly occupied by a Mill Pond / Reservoir, which has subsequently been infilled / drained. A small area was recorded as being a 'Refuse Tip' on the 1965 mapping, although this is not listed within the Envirocheck Report.

Published geological maps record that the site is underlain by Devensian Till, a Secondary (Undifferentiated) Aquifer and the Clitheroe Limestone Formation and Hodder Mudstone Formation (undifferentiated), a Secondary (B) Aquifer.

The site is located within an area which 'might not be' affected by coal mining activity and is not located within a Coal Authority designated Coal Mining Reporting Area. Consequently, no further action is considered necessary at this stage relating to coal mining at and beneath the site.

Intrusive Investigation

The investigation comprised the drilling of six (6 No) window sample holes (WS1 – WS6), excavation of twelve (12 No) trial pits (TP1 – TP12), execution of eight (8 No) DCP CBR tests and three (3 No) soakaway tests 2 between 2nd and 10th April 2025.

Made Ground was encountered in one location (WS1) to 0.45m bgl, comprising slightly clayey, slightly sandy GRAVEL. Elsewhere, topsoil was encountered to depths of between 0.05m and 0.3m bgl. Superficial Till deposits were encountered within all exploratory hole locations. The material recovered comprised brown locally slightly sandy slightly gravelly CLAY overlying stiff brownish grey gravelly locally very gravelly CLAY. The gravel comprised mudstone, sandstone and locally limestone.

GRAVEL deposits were encountered in WS5 from 2.0 to at least 3.5m bgl where it was not fully penetrated and in WS6 between 1.0 and 1.2m bgl, in the south-western and south-eastern areas of the site respectively.

Bedrock was not recovered within any of Remada's exploratory locations.

Human Health Assessment

The results of soil chemical analysis were compared to Human Health Generic Assessment Criteria for residential land use with home grown produce. Localised metal concentrations were recorded marginally in exceedance of their respective human health GAC protective of on-site workers.

Water Resources Assessment

The results of the soil chemical analysis undertaken has identified that concentrations of metals and inorganic contaminants are within the range that would be expected for 'typical' natural soils. Detectable concentrations of TPH and PAHs were encountered in some samples. However, the contaminants identified are of low solubility and mobility and as such are unlikely to present a risk to groundwater beneath the site.

The ground investigation has indicated that the majority of the site is underlain by CLAY, with water being localised and perched. The only groundwater strike recorded during Remada's investigation was in WS1 at

3.0m depth. However, standing water has been encountered within all six standpipes during the subsequent monitoring programme.

Consequently, the risk of leaching of contaminants as a result of infiltration of groundwater is limited. Therefore, the risk to controlled waters from contaminants within the soil at the site is considered to be low and does not warrant further consideration at this stage.

Waste Classification

The results of the assessment indicated that contaminant concentrations within the Made Ground, topsoil and natural soils were generally low and would generally classify the soils as non-hazardous with LoW Code 17 05 04 (soils and stones other than those mentioned in 17 05 03).

Waste Acceptance Criteria (WAC) analysis was undertaken on a sample of topsoil and two samples of natural soil. The assessment of samples indicated that both samples of clay (from WS6 at 0.5m and TP2 at 0.4m) met the requirements for disposal in an Inert landfill.

The topsoil sample from TP1 at 0.1m recorded a Total Organic Carbon (TOC) concentration of 4.6%, which would exceed the Inert Waste Landfill acceptance criteria (3%). Likewise, the Loss on Ignition concentration of 11% marginally exceeded the Hazardous Waste Landfill acceptance criteria (10%). However, it is considered likely that the site-won topsoil will be stripped during the redevelopment of the site and stockpiled for reuse as part of soft landscaping and garden areas.

Geotechnical Assessment

It is understood that the development will comprise two-storey housing for which a line load of 25kN/m per floor is considered appropriate. Hence the estimated pressure for 0.6m wide strip footing is 83 kPa. Based upon the window sample borehole information, the allowable bearing capacity of the firm CLAY ($C_u = 50$ kPa) beneath a strip footing of depth 1.2m and width 0.6m is estimated as 100 kPa to limit settlement to 25mm.

Foundations may need to be locally deepened where soft spots are present. A foundation schedule will be required for the proposed layout.

All samples of CLAY were reported as being LOW, INTERMEDIATE and HIGH plasticity with between 75% and 100% passing a 0.425mm sieve. The modified plasticity index equates at Low to Medium Volume Change Potential.

Due to a Total Potential Sulphate (TPS) = 1.45%, a Design Sulphate Class DS-4 is considered appropriate for buried concrete and an ACEC Class of AC-3s is considered appropriate for the location. It is recommended that additional BRE SD1 analysis is undertaken, in order to further investigate and potentially delineate the protection requirements for buried concrete on the site possibly as part of plot scheduling.

Three soakaway tests were conducted within trial pits located across the site. The results indicated that there was minimal infiltration and as such soakaways will not be suitable for the proposed development.

Side slopes within the clay are likely to remain stable in the short term without support or without being battered back to a safe slope gradient. However, a detailed inspection of the side slopes should be made during excavation and a risk assessment carried out to fully assess the support measures

Ground Gas

The ground gas and groundwater monitoring programme is ongoing, with the results to be forwarded upon completion. However, the results of the first three (3 No.) rounds of gas monitoring place the site into gas Characteristic Situation 3 and therefore ground gas protection measures will likely be required within the proposed buildings. It may be possible to zone the site between CS1 and CS3.

The site is located in a Lower Probability Radon Area as less than 1% of properties are above the Action Level, therefore no radon protective measures are necessary.

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Issue No	Date	Prepared By	Technical Review	Authorised
01	21.05.2025			

1 INTRODUCTION

Remada Ltd was commissioned by VH Land Partnerships Limited (hereafter 'the client') to undertake a Phase 2 Ground Investigation for a proposed residential development at High Moor Farm, Clitheroe at the location indicated in **Figure 1**.

1.1 Objectives

The objectives of this assessment are as follows:

- to examine whether there have been any potentially contaminative uses on the site or nearby land;
- to develop a conceptual model of the site to identify plausible pollutant linkages;
- to assess ground conditions in relation to the proposed development in relation to construction design issues including the presence, nature, likely severity and extent of soil and groundwater contamination, which may be present, its potential environmental impact and likely requirement for further work; and
- Provide preliminary foundation design recommendations for the proposed development.

1.2 Scope of Work

The scope and layout of this investigation and report is generally in accordance with BS10175:2011+A2 2017 and the Environment Agency's Land Contamination Risk Management guidance for land contamination reports.

The scope of work comprised:

- 1 No. Day of window sampling (target 6 No. boreholes) with SPTs at 1m intervals to a target depth of 5.0m bgl to prove competent natural strata.
- 2 No. Days of trial pitting using a backhoe excavator (JCB 3CX or equivalent) to a target depth of 3.0 – 4.0m bgl.
- 1 No. Day of soakaway testing in accordance with BRE 365 (2 – 3 locations, with up to 3 fills).
- 6 No. gas / groundwater monitoring wells installed with window sample boreholes.
- 6 No. rounds of gas/groundwater monitoring at different atmospheric pressures, in accordance with typical/idealized frequency of monitoring for a high sensitivity development (residential with gardens) as set out in CIRIA C665.
- 8 No. CBR tests within the road/pavement area on made ground or natural soil that will be at the development formation level. In the absence of any specific information the pavement formation level shall be considered to be a maximum of 500mm.
- Suite of geotechnical classification and strength tests as appropriate to the soils and 4 No BRE Sulphate suites in accordance with BRE SD1.
- 8 No Chemical Analysis for asbestos (quantitative), pH, Arsenic, Beryllium, Cadmium, Chromium (trivalent & hexavalent), Copper, Mercury, Nickel, Lead, Selenium, Vanadium, Zinc, Fraction of Organic Carbon, TPHCWG, PAH(16) and Phenol.
- 3 No. Waste Acceptance Criteria (WAC) analysis on recovered soils; and
- Combined Factual & Interpretative Geoenvironmental Report.

The investigation methodology is presented in **Section 4**, findings in **Section 5** and the exploratory hole

locations are indicated on **Figure 2**.

1.3 Proposed Development

It is understood that the proposed site use for the site will be a residential development. A proposed indicative site layout plan is presented as **Figure 3**, with the site being accessed off Highmoor Park, along the western boundary.

1.4 Previous Reports

The following reports have been previously prepared for the site:

- Phase 1 Site Investigation & Preliminary Risk Assessment. Remada Ltd Report ref: 1134.01.01, issued in February 2025.

1.5 Limitations

The comments given in this report and the opinions expressed are based on the information reviewed and observations during site work. However, there may be conditions pertaining to the site that have not been disclosed by this assessment and therefore could not be taken into account.

2 SUMMARY OF PREVIOUS REPORT

2.1 Summary of Phase 1 Desk Study

The Executive Summary and Conceptual Site Model presented within Remada's Phase 1 Desk Study for the site (ref: 1134.01.01 dated February 2025) are reproduced below:

Site Setting

The site occupied an irregular plot immediately to the east of the built-up area of Clitheroe. It is located adjacent to an existing residential area, located to the north of Pendle Road. The site predominantly comprises agricultural land, part of the former Highmoor Farm. The Highmoor Farm complex itself is excluded from the study site. The closest residential properties are those to the west of the site, on Highmoor Park, Abbot Walk and Bracken Hey.

The study site predominantly comprises three irregular-shaped fields. Two of these fields are present to the north of an asphalt-surfaced access road giving access from Highmoor Road in the west to Highmoor Farm. The third field is located immediately to the south of this road. With the exception of a large 'tank' feature associated with the Farm, there are no structures indicated to be present on-site. Field boundaries are typically formed of hedgerows and semi-mature to mature trees.

Site History

The earliest available historical mapping of 1847 indicates the site to be unoccupied as part of a larger series of fields. An unnamed lane bisects the site. By 1886, Highmoor Farm occupies the centre of the site, adjacent to the lane. The site remained relatively unchanged until 1965, where the footprint of the buildings was changed. Since this change, the site has remained relatively unchanged until present day.

Within the surrounding area, the historical mapping has indicated that the present-day Highmoor Car Park car park to the south-west of the study site has been constructed on an area formerly occupied by a Mill Pond / Reservoir, which has subsequently been infilled / drained. A small area was recorded as being a 'Refuse Tip' on the 1965 mapping, although this is not listed within the Envirocheck Report.

Geology / Hydrogeology

Published geological maps record that the site is underlain by Devensian Till, a Secondary (Undifferentiated) Aquifer and the Clitheroe Limestone Formation and Hodder Mudstone Formation (undifferentiated), a Secondary (B) Aquifer.

Mining

The site is located within an area which 'might not be' affected by coal mining activity and is not located within a Coal Authority designated Coal Mining Reporting Area. Consequently, no further action is considered necessary at this stage relating to coal mining at and beneath the site.

Radon

The site is located in a Lower Probability Radon Area as less than 1% of properties are above the Action Level, therefore no radon protective measures are necessary.

Unexploded Ordnance (UXO) Risk

The freely available Zetica UXO risk mapping indicates the site to be located within an area where the bomb risk is 'Low'. This is defined by Zetica as an area having an indicated bombing density of 15 bombs per 1000 acres or less during the Second World War.

Environmental Risk Assessment

Environmental

The desk study has identified a number of on-site and off-site potential sources of contamination that would require further investigation. The following is recommended:

- *Investigation of the lateral and vertical extent of made ground/fill beneath the proposed site footprint;*

-
- *Collection of soil and groundwater samples from the areas identified above for contaminants of concern; and*
 - *Ground gas monitoring.*

Geotechnical

It is recommended that a ground investigation is undertaken to enable preliminary foundation design.

Potential Source Areas	Potential Contaminant of Concern	Pathways	Potential Receptor	Exposure Route (Human unless otherwise stated)	Potential Identified Linkage (unmitigated)	Findings of Ground Investigation	Risk (Un-mitigated)	Proposed Remediation (Mitigation) Measures	Residual Risk Estimation
<u>On-site Sources</u>	Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, Boron, TPH /PAH, PCBs	Disturbance due to construction plant causing direct contact, dusts, vapours.	Occupants of the development / building fabric	• Direct Soil Ingestion	• Yes	To be assessed (TBA)	Potential risk	(To be assessed (TBA)	(To be assessed (TBA)
Agricultural Land				• Indoor Dust ingestion	• Yes	As above	Potential risk	TBA	TBA
Unspecified Tank				• Skin Contact with Soils	• Yes	As above	Potential risk	TBA	TBA
<u>Off-site Sources</u>				• Skin Contact with Dust	• Yes	As above	Potential risk	TBA	TBA
Former Cotton & Rayon Mills		• Inhalation of Outdoor Dust		• Yes	As above	Potential risk	TBA	TBA	
Infilled / drained mill pond / reservoir		Direct Contact with occupants of the proposed development		• Ingestion of home grown produce	• Yes	As above	Potential risk	TBA	TBA
Refuse Tip				• Inhalation of Outdoor Vapours	• Yes	As above	Potential risk	TBA	TBA
General Made Ground				• Inhalation of Indoor Vapours	• Yes	As above	Potential risk	TBA	TBA
Highmoor Farm			• Inhalation of ground gas	• Yes	As above	Potential risk	TBA	TBA	
Residential Properties		Inhalation of fibres / vapours / gases by occupants of proposed development	Adjacent residents during construction	• Inhalation of radon gas	• No	Lower Probability Area	Negligible	None	Negligible
Electrical sub-station				• Ingestion via permeated water supply pipework	• Yes	As above	Potential risk	TBA	TBA
		Permeation of water supply pipework		• Direct contact with Secondary (Undifferentiated) Aquifer in Superficial Deposits	• Yes	As above	Potential risk	TBA	TBA
				Leachate	Secondary Aquifers	• In-direct contact with Secondary (B) Aquifer in bedrock	• Yes	As above	Potential risk

Table 1: Outline Conceptual Site Model

Direct contact with subsurface soil and/or groundwater during redevelopment works are not assessed as part of the CSM. It is considered that risks to workers will be managed as part of any the redevelopment works at the site through the application of health and safety procedures, where required.

3 SITE WALKOVER

The opportunity was taken to inspect the site on 4th March 2025 by Lewis Hillman of Remada Ltd, as recorded in the photographs below. There were no visual or olfactory indicators of contamination.



Photo 1: A view of the access road off Highmoor Park.



Photo 2: A view looking approximately north-west showing the access into the northern field with the tank to the left.



Photo 3: A view of the northern field.



Photo 4: A view of the southern field.

4 ENVIRONMENTAL & GEOTECHNICAL INVESTIGATION METHODOLOGY

4.1 Investigation Strategy

The investigation comprised the drilling of six (6 No) window sample holes (WS1 – WS6), excavation of twelve (12 No) trial pits (TP1 – TP12), execution of eight (8 No) DCP CBR tests and three (3 No) soakaway tests at locations indicated on **Figure 2** between 2nd and 10th April 2025.

All exploratory holes were logged by a suitably qualified Geo-environmental Engineer in general accordance with the recommendations of BS5930:2015+A1:2020. Detailed descriptions, together with relevant comments, are given in the **Exploratory Hole Logs**.

The weather conditions at the site during the fieldwork period were generally warm and dry, with no standing water nor slippery ground conditions being noted.

4.2 Buried Service Clearance

Buried service plans were reviewed prior to any fieldwork activities commencing.

During the intrusive works, a visual check and buried services survey using a Cable Avoidance Tool (CAT) and Signal Generator (Genny) was carried out at each exploratory hole location.

4.3 Intrusive Investigation

4.3.1 Window Sampling

All six (6 No.) window sample boreholes (WS1 – WS6) were advanced to a target depth of 5.0m below existing ground level. The window sampling rig itself is mounted on rubber tracks and is highly manoeuvrable as a result. This, when combined with the relatively diminutive frames of the rigs (the rigs primarily used tend to only weigh in at around 150Kg – 200Kg), makes it ideal for more environmentally sensitive situations whereas minimal disturbance as possible is required.

Sampling is achieved by a percussive method, with a chain-driven drop weight that repeatedly strikes an anvil, driving the rods and sample tubes into the ground. In Window Sampling, the soil sample is simply removed through a "window" in the side of the steel tube. In Windowless Sampling a complete soil profile is retained in a rigid clear plastic liner.

Combined Groundwater and Ground Gas monitoring standpipes were installed in all six window sample boreholes (WS1 – WS6).

4.3.2 Trial Pits

Twelve (12 No.) trial pits (TP1 – TP12) were excavated using a mini excavator on Wednesday 9th and Thursday 10th April 2025. The trial pits were excavated while in full attendance of an experienced geo-environmental consultant. On completion of the trial pits the materials were replaced in approximately the same order as they were excavated and compacted using the excavator.

4.4 In-Situ Testing

4.4.1 Standard Penetration Tests

Standard Penetration Tests (SPTs) in the window samples were carried out at 1.0m intervals as recorded on the borehole logs to assess the relative density and consistency of soils.

SPTs were conducted in accordance with BS EN ISO 22476-3 and the recorded SPT N-values are summarised on the borehole logs.

The SPT N-values have been corrected based on the Energy Ratio of 88% for the SPT hammer on the window sampling rig. The SPT Hammer Energy Test Report, undertaken in accordance with BS EN ISO 22476-3:2005 is presented in **Appendix A**.

4.4.2 Hand Shear Vane

Hand shear vane tests were undertaken using an Impact SL810 and in general accordance with the manufacturer's instructions on selected samples of cohesive soils.

4.4.3 Dynamic Cone Penetrometer (DCP) Tests

Eight (8 No.) DCP tests were conducted in order to determine California Bearing Ratio (CBR) values for near surface soils, at the locations in **Figure 2**. A known mass is dropped through a known distance to drive a cone into the ground. The penetration distance per blow is recorded in order to enable the CBR value to be calculated. Test results are presented in **Appendix B**.

4.4.4 Soakaway Tests

Three (3 No.) soakaway tests were undertaken in general in accordance with BRE Digest DG365, Soakaway Design, 2016, at the locations in **Figure 2**. Test results are presented in **Appendix C**.

4.5 Soil Sampling

4.5.1 Environmental

Made Ground and natural soils were selected by visual and olfactory means for subsequent analysis. Samples for chemical laboratory testing purposes were collected in amber glass jars, amber glass vials and plastic tubs and retained in a cool box for transport to the laboratory.

4.5.2 Geotechnical

Geotechnical samples were collected at depths indicated on the exploratory hole logs with samples retrieved from either the excavator bucket or from within a sleeve line. The disturbed samples were placed in sealed and correctly labelled plastic tubs or bags as appropriate. All geotechnical samples were dispatched to the laboratory for testing with a completed chain of custody.

4.6 Gas & Groundwater

4.6.1 Installations

Combined ground gas and groundwater monitoring standpipes were installed within six of the window sample boreholes across the site. The standpipes consisted of 50mm internal diameter high-density polyethylene (HDPE) pipe. A bentonite seal was made around the plain pipe and a clean gravel pack was placed around the slotted pipe,

4.6.2 Monitoring

Ground gas monitoring was undertaken using a GFM 436 gas analyser for the parameters reported below. Groundwater levels were measured with a GeoSense OWP30 oil water interface probe.

Permanent ground gas monitoring involved the measurement of the following in the prescribed order:

- Pressure difference between the monitoring well and the atmosphere.
- Peak and steady flow rates of gas into or out of the monitoring well.
- Peak and steady concentrations of carbon dioxide, methane, oxygen (minimum and steady recorded), carbon monoxide, hydrogen sulphide; and
- Depth to groundwater.

The ground gas monitoring programme is ongoing, with six (6 No.) ground gas monitoring visits scheduled to be undertaken as a minimum required for a residential development in accordance with CIRIA C665.

Ground gas concentrations have so far been recorded on 8th and 24th April and 14th May 2025 at WS1 – WS6. These interim monitoring results are presented in **Table 2**. The corresponding Calibration Certificate for the GFM436 gas analyser is presented as **Appendix D**.

4.7 Quality Assurance and Quality Control

All samples were submitted to a United Kingdom Accredited Laboratory (UKAS) under a completed chain of custody. The laboratory carried out its own QA/QC programme to ensure that the quality of the analytical data conformed to the appropriate test method protocols.

4.8 Laboratory Analysis & Testing

4.8.1 Chemical Analysis – Soil

Eight (8 No) soil samples were scheduled for the analysis of asbestos, arsenic, barium, beryllium, cadmium, chromium (III & VI), copper, mercury, nickel, lead, selenium, zinc, fraction of organic carbon, Total Petroleum Hydrocarbons (TPHCWG), Polyaromatic Hydrocarbons (PAH), BTEX compounds (benzene, toluene, ethylbenzene and xylene) and phenols.

Three (3 No.) soil samples were also scheduled for Waste Acceptance Criteria (WAC) analysis.

The results of laboratory chemical analyses are presented at **Appendix E**.

4.8.2 Geotechnical

Samples recovered from the boreholes were submitted to an accredited laboratory for the following tests in general accordance with BS1377:1990:

- 8 No Natural Moisture Contents.
- 8 No Plasticity Indices.
- 2 No Particle Size Distribution (PSD) tests; and
- 4 No BRE SD1 suites.

The results of the geotechnical testing are presented at **Appendix F**.

5 GEOTECHNICAL & ENVIRONMENTAL INVESTIGATION FINDINGS

5.1 Ground Conditions

A brief description of the published geology is provided together with a summary of the ground conditions encountered during the intrusive investigation. Exploratory logs are presented at the end of the report.

5.1.1 Published Geology

The superficial deposits underlying the site are indicated to comprise Devensian Till. The BGS describe these as typically comprising 'a heterogenous mixture of clay, sand, gravel, and boulders varying widely in size and shape'.

The bedrock directly underlying the site is formed of the Clitheroe Limestone Formation and Hodder Mudstone Formation (Undifferentiated).

The BGS describes the Clitheroe Limestone Formation as typically comprising '*predominantly pale grey and commonly coarsely crinoidal, packstones, wackestones and subordinate grainstones and mudstones with Waulsortian mudmound reef limestones present at two levels*'.

The BGS describes the Hodder Mudstone Formation as typically comprising '*predominantly grey to dark grey mudstone, with subordinate and variable detrital limestone, siltstone and sandstone. Mudmound reef (Waulsortian) limestones, limestone boulder conglomerates and breccias locally, near the base*'.

5.1.2 Made Ground

Made Ground was encountered in one location (WS1) to 0.45m bgl. The Made Ground comprised slightly clayey slightly sandy gravel, with the gravel comprising sandstone, mudstone, tile and brick fragments.

5.1.3 Topsoil

Topsoil was encountered within all other exploratory hole locations at depths of between 0.05 and 0.3m bgl. The topsoil comprised brown slightly clayey sand. For the purpose of this assessment, topsoil is defined as the upper darker and more fertile layer of the soil profile which is a product of natural chemical, physical, biological and environmental processes. This does not imply compliance with BS 3882:2015.

5.1.4 Superficial Deposits

Superficial Till deposits were encountered within all exploratory hole locations. The material recovered comprised brown locally slightly sandy slightly gravelly CLAY overlying stiff brownish grey gravelly locally very gravelly CLAY. The gravel comprised mudstone, sandstone and locally limestone.

GRAVEL deposits were encountered in WS5 from 2.0 to at least 3.5m bgl where it was not fully penetrated and in WS6 between 1.0 and 1.2m bgl, in the south-western and south-eastern areas of the site respectively.

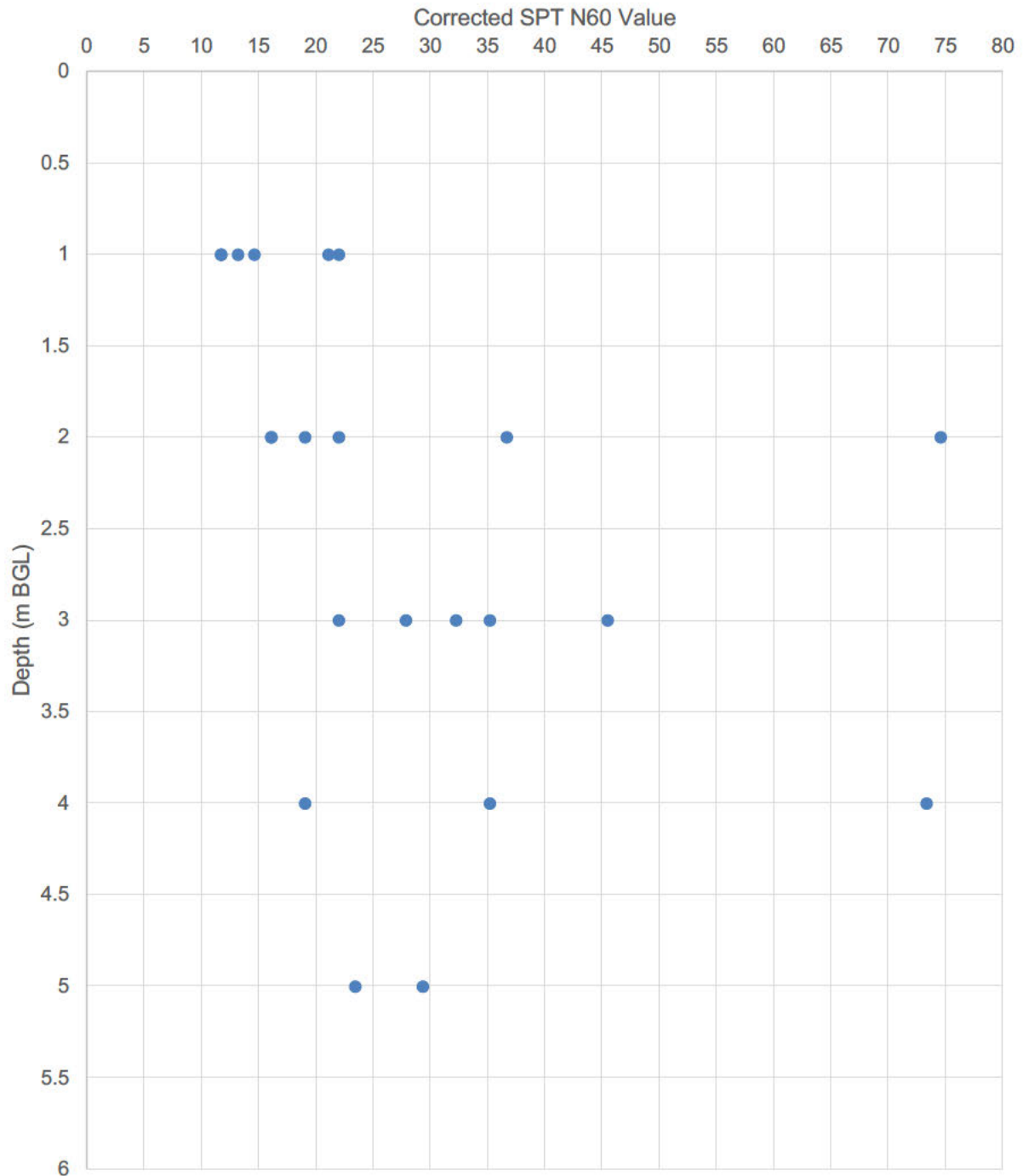
5.1.5 Bedrock

Bedrock was not recovered within any of Remada's exploratory locations.

5.2 In-situ Testing

5.2.1 Standard Penetration Tests (SPTs)

In-situ SPTs were undertaken to assist with the interpretation of strata encountered. The results of corrected N-values versus depth are plotted in the graph below:



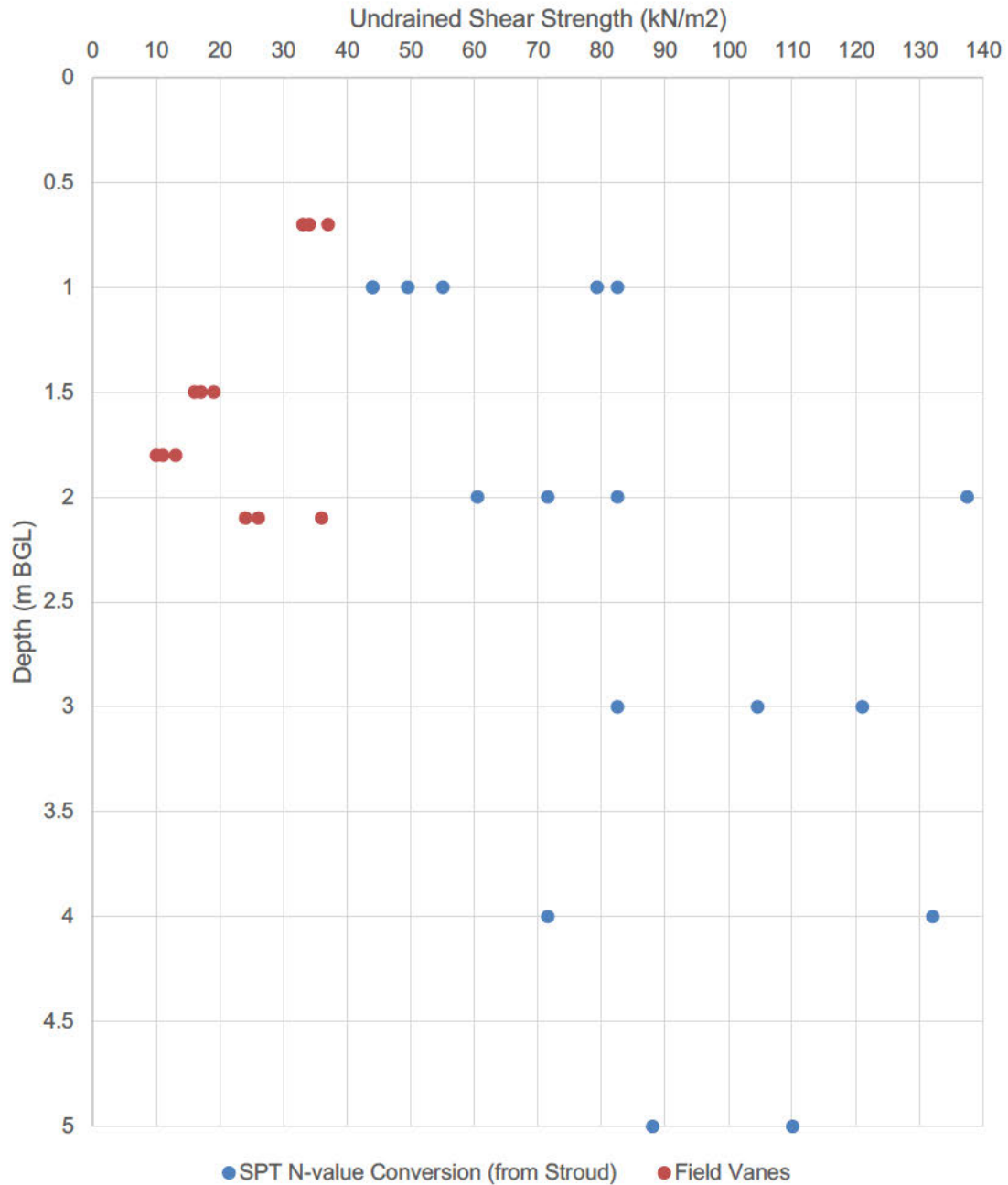
Graph 1: Plot of Corrected SPT N-Values Versus Depth

Undrained shear strengths have been estimated from SPT N values using the relationship developed by Stroud (*The standard penetration test in incentive clays and soft rocks*) and summarised in Tomlinson where:

$$\text{Mass shear strength} = f_1 \times N$$

Where f_1 is based on the plasticity index.

A Plasticity Index of 20% has been assumed (based on the average of geotechnical laboratory testing) which equates to an f_1 factor of 5.5.



Graph 2: Plot of Mass Shear Strength Versus Depth

5.2.2 Hand Shear Vane

The results of the field testing ranged between 10kPa (in TP02 at 1.8m) and 37kPa (in TP10 at 0.7m bgl). These hand shear vane results have been plotted along with the results interpreted from the SPT N values in **Graph 2**.

5.2.3 CBR Tests

The results of the eight DCP tests within the proposed road and pavement areas produced typical values between 1.6% and 17.3% within the upper 500mm.

5.2.4 Soakaway Tests

A reduction in water level from 75 to 50 % of the pit volume was not achieved within 24 hours and the three tests failed to achieve sufficient infiltration.

5.3 Soil Observations

Made Ground was encountered in one location only (WS1) containing man-made materials including brick and tile fragments locally.

There were no visible or olfactory indicators of contamination within the sampled soils.

5.4 Groundwater Observations

The natural cohesive deposits in ten (10 No) trial pits were recorded as being damp below 0.6m bgl during Remada's investigation. Groundwater was also encountered within borehole WS1 at 3.0m bgl.

5.5 Chemical Analysis

Results of the soil chemical analysis are presented in **Table 3** and summarised as follows.

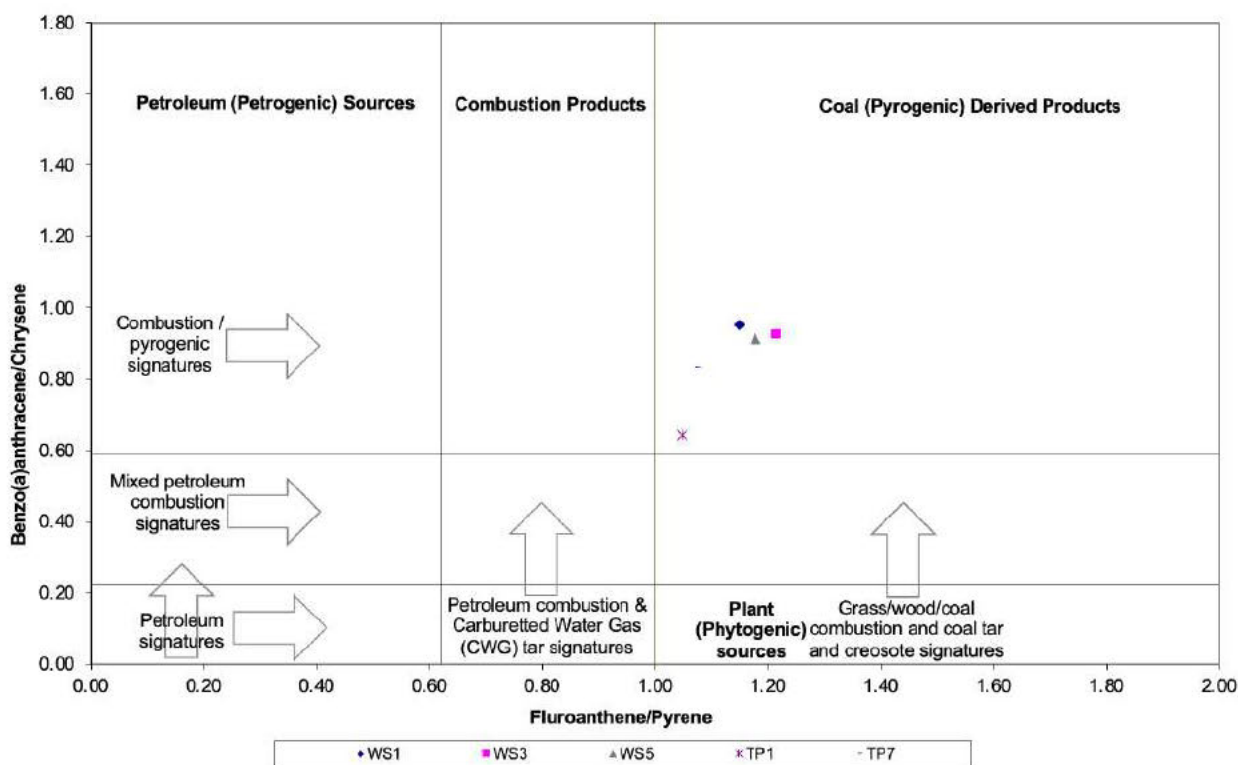
The average Fraction of Organic Carbon (FOC) and pH were 0.037 and 7.88 respectively. Asbestos was not detected in any of the eight soil samples scheduled for analysis. Detectable concentrations of metals were identified in all eight (8 No.) samples, although the majority were within the range that would typically be expected for the encountered soils.

Concentrations of Total Petroleum Hydrocarbons (TPH) were detected above the laboratory method detection limit (MDL) in the samples from WS1 at 0.2m and WS5 at 0.1m bgl. The maximum total concentration of 45mg/kg was recorded in WS1 at 0.2m. The hydrocarbons were generally heavy end within the C16 to C35 carbon range.

Concentrations of Polyaromatic Hydrocarbons (PAHs) were generally low (<5 mg/kg), with a maximum concentration of 11.5mg/kg being encountered in WS1 at 0.2m bgl.

No BTEX compounds were recorded in exceedance of MDL.

In addition, the PAH concentrations have been plotted on a double ratio plot to provide an indication of the likely source of the PAHs. All of the samples that had detections of the four PAHs used have been plotted (**Graph 3**) and all are indicated to be associated with predominantly plant (phytogenic) sources.



Graph 3: PAH Double Ratio Plot

5.6 Geotechnical Testing

Results of the geotechnical testing are summarised below.

5.6.1 Plasticity Indices

Plasticity testing was undertaken on eight (8 No.) samples of cohesive soils recovered from the window sample boreholes, with the results ranging between 18% and 37%. These indicate the soils to be Low (CL), intermediate (CI) and High (CH) plasticity and low to medium volume change potential as summarised in the table below:

Location	Depth (m)	Plasticity Index (%)	Passing .425mm (%)	Modified Plasticity Index	Volume Change Potential
TP2	1.30	18	75	13.5	Low
TP3	1.60	23	84	19.3	Low
TP4	2.10	22	87	19.1	Low
TP7	0.70	33	100	33.0	Medium
TP9	0.70	37	100	37.0	Medium
TP10	1.80	19	89	16.9	Low
TP11	1.20	20	88	17.6	Low
TP12	1.90	19	84	16.0	Low

Table 4: Plasticity Indices and Volume Change Potentials of the Natural Cohesive Strata

5.6.2 Particle Size Distribution (PSDs)

The PSD tests revealed the following:

- Natural deposits in TP4 at 2.1m comprised 'grey sandy gravelly SILT/CLAY'.
- Natural deposits in TP12 at 1.5m comprised 'grey sandy gravelly SILT/CLAY'.

5.6.3 BRE SD1 Analysis

The water-soluble sulphate contents were recorded between 11.3 and 114.0mg/l in all four samples analysed, with pH varying between 8.0 and 8.5. The total sulphur content ranged between 0.032% and 0.485%, whilst total sulphate ranged between 0.043 and 0.095%.

5.7 Ground Gas Monitoring Results

The ground gas monitoring programme is ongoing, and the full results will be summarised upon completion. However, the interim results are summarised below:

- Methane was not detected above MDL in any monitoring wells for the duration of the monitoring programme.
- A maximum steady state concentration of Carbon Dioxide was recorded as 72.3% v/v in WS1 on 8th April 2025. Detectable concentrations of carbon dioxide were recorded in all the monitoring wells;
- A minimum steady state concentration of Oxygen was recorded 17.4% v/v in WS2 on 24th April 2025.
- Ground gas flow rates were recorded at a maximum of 55.5 litres per hour (l/hr) in WS2 on 24th April 2025.
- Groundwater was encountered within all of the standpipes, ranging in depths between 0.71m and 2.6m bgl over the course of the monitoring programme.
- Atmospheric pressure at the time of sampling varied between a high of 1011 millibar (mbar) on 14th May 2025 and a low of 986 mbar on 8th April 2025.

6 GENERIC QUANTITATIVE RISK ASSESSMENT

6.1 Human Health Risk Assessment

In order to provide an up to date assessment of the risks to human health, Remada has adopted the most recent Generic Assessment Criteria (GAC) published by LQM/CIEH (S4ULs) and CL:AIRE/EIC/AGS for the assessment of potential risks to human health. The derivation of GAC, methodology, input parameters and technical guidance (CLEA) may be obtained upon request.

The proposed indicative site layout is presented in **Figure 3**.

Default parameters have been adopted for sandy loam of pH 7 and residential end use with homegrown produce. FOC ranged from 0.0058 to 0.14 giving a Soil Organic Matter (SOM) content range of between 1.0% and 24.1%, with an average result of 10.61%. In order to present a conservative assessment, the SOM content of 6% has been adopted for the assessment.

The depth to potential sources of contamination for indoor air pathways has been assumed to be 0.5m below building foundation level. The source has been conservatively assumed to be at ground level for outdoor air and direct contact pathways.

For residential land with home grown produce the CLEA version 1.06 critical receptor is conservatively modelled as a female child of age 0 to 6. In accordance with the default parameters, it was assumed that the child would spend most of their time indoors and have frequent short duration direct contact with garden soils. As such, the potential exposure pathways have been assumed to be:

- Direct soil and indoor dust ingestion.
- Consumption of home grown produce.
- Skin contact with soils and dusts.
- Inhalation of indoor and outdoor dusts and vapours.

Where GAC values for individual TPH fractions are not exceeded, the potential additive effect has been assessed by calculating overall TPH hazard index for each sample.

6.2 Comparison of Soil Analysis Results with Human Health GAC

A comparison of soil chemical analysis with GAC is presented as **Table 3**.

TPH, PAH & BTEX

None of the analytes tested were detected at concentrations that exceeded the human health GAC protective of on-site workers.

Metals & Inorganics Excluding Asbestos

None of the analytes tested were detected at concentrations that exceeded the human health GAC protective of on-site workers.

Asbestos

Asbestos was not detected in any of the samples selected for analysis.

6.3 Controlled Waters Risk Assessment

6.3.1 Sensitivity – Groundwater

The site is not indicated to be within a Groundwater Source Protection Zone. The superficial deposits are designated as Secondary Aquifer – Undifferentiated, where it is not possible to designate it as 'A' or 'B'. The Clitheroe Limestone Formation and Hodder Mudstone Formation (Undifferentiated) bedrock

underlying the site is designated as a Secondary 'B' Aquifer. There are no groundwater abstractions recorded within 1km of the site.

6.3.2 Sensitivity – Surface Waters

The nearest surface water feature is located encroaching into the northern boundary of the site, pertaining to an unnamed stream (a tributary of Mearley Brook flowing through Clitheroe). Additionally, Shaw Brook is indicated to be present adjacent to the site's southern boundary, flowing towards the north-west. There are five (5 no.) surface water abstraction points within 1000m of the site, the nearest is located 428m northwest, pertaining to Castle Castings Ltd, Additional Purpose: cooling abstraction at Mearley Brook. The license is recorded as revoked.

6.3.3 Risk Assessment

The results of the soil chemical analysis undertaken has identified that concentrations of metals and inorganic contaminants are within the range that would be expected for 'typical' natural soils. Detectable concentrations of TPH and PAHs were encountered in some samples. However, the contaminants identified are of low solubility and mobility and as such are unlikely to present a risk to groundwater beneath the site.

The ground investigation has indicated that the majority of the site is underlain by CLAY, with water being localised and perched. The only groundwater strike recorded during Remada's investigation was in WS1 at 3.0m depth. However, during the subsequent monitoring programme, groundwater was encountered within all six standpipes, ranging in depths between 0.71m and 2.60m bgl.

Consequently, the risk of leaching of contaminants as a result of infiltration of groundwater is limited. Therefore, the risk to controlled waters from contaminants within the soil at the site is considered to be low and does not warrant further consideration at this stage.

6.4 Interim Ground Gas Assessment

In order to understand the gassing regime at the site, a Characteristic Situation (as defined in CIRIA C665 and BS8576:2013) is determined for the site. CIRIA C665 and BS8576 provides definitions for each Characteristic Situation based on Gas Screening Values (GSV) which are calculated as follows:

- $GSV = \text{Gas Concentration (\% v/v)} \times \text{Measured Borehole Flow Rate (l/hr)}$

BS8576 makes a distinction between the GSV and the Hazardous Gas Flow Rate (Q_{hg}) which is also calculated using the above calculation. BS8576 states that Q_{hg} is calculated for each individual borehole for each monitoring visit, whereas the GSV is taken as the representative value for the site or site zone.

With regard to negative flow rates BS8485 states

'If a negative flow is recorded it should not automatically be discounted. Rather, an assessment of whether, under different temporal conditions, a similar positive out-flow of gas could occur should be undertaken, consistent with development of the conceptual site model. Only when the reason for the negative value is reasonably understood, and a positive flow can be credibly ruled out, should a negative value be discounted'.

As a worst case assessment, the GSV for the site is therefore taken as the maximum steady-state carbon dioxide/methane concentration recorded in the boreholes which is multiplied by the maximum flow rate recorded during the same monitoring event.

- Interim Methane GSV = $0.1\% \times 55.5 \text{ l/hr} = 0.0555 \text{ l/hr}$ (methane concentration taken as equal to the instrument detection limit of 0.1%).
- Interim Carbon Dioxide GSV = $1.6\% \times 55.5 \text{ l/hr} = 0.888 \text{ l/hr}$

The calculated GSV of greater than 0.7 for methane and carbon dioxide places the site into Characteristic Situation 3. BS 8485:2015+A1:2019 states that gas protection measures should be considered for the proposed development.

For a residential building of this type (Type A) at a site classified as Characteristic Situation 3 the required minimum gas protection score for a low risk site in accordance with BS 8485:2015+A1:2019 (Table 4) is 4.5. Appropriate forms of floor and substructure designs are listed Table 5 of BS 8485:2015+A1:2019; it is likely that structural barriers, ventilation and a ground gas membrane would comprise suitable mitigation measures.

The site should be classed as CS3, however, the gas monitoring is ongoing and two of the three visits have resulted in a CS1 classification. Further monitoring is required, on completion of the programme it may be possible to zone the gas monitoring between CS1 and CS3.

6.5 Revised Conceptual Site Model

A revised Conceptual Site Model is presented as **Table 5** below.

6.6 Waste Classification & Waste Acceptance

Waste classification has been undertaken following guidance set out in WM3 EA Technical Guidance 'Guidance on the classification and assessment of waste', 1st Edition, Version 1.2GB, October 2021. The results of this assessment determine the appropriate List of Waste (LoW) Code and whether the waste should be classified as hazardous or non-hazardous. Classification is undertaken using the results of solid (total) analyses and not on the results of the WAC analyses.

Once the waste has been classified as either hazardous or non-hazardous then the WAC testing determines if the waste meets the requirements for disposal in the required landfill. Therefore, if the waste is classified as hazardous waste, then the waste would also need to meet the hazardous waste WAC requirements to be disposed of in a hazardous waste landfill. However, if the final destination of the waste is not to landfill then WAC analysis is not required.

The WAC testing also allows for a distinction to be made between inert and non-hazardous waste. Waste that does not fall within the hazardous waste category and meets the requirements for disposal in an inert landfill can therefore be disposed of in an inert landfill. However, waste that does not meet the requirements for inert landfill will need to be disposed of in a non-hazardous landfill. In certain circumstances hazardous waste can be disposed of in a designated cell within a non-hazardous landfill. In this case the waste would need to meet more stringent leachate requirements for stable non-reactive hazardous waste.

6.6.1 Waste Classification

The results of the assessment indicated that contaminant concentrations within the Made Ground, topsoil and natural soils were generally low and would generally classify the soils as non-hazardous with LoW Code 17 05 04 (soils and stones other than those mentioned in 17 05 03).

6.6.2 Waste Acceptance

Waste Acceptance Criteria (WAC) analysis was undertaken on a sample of topsoil and two samples of natural soil. The assessment of samples indicated that both samples of clay (from W56 at 0.5m and

TP2 at 0.4m) met the requirements for disposal in an Inert landfill.

The topsoil sample from TP1 at 0.1m recorded a Total Organic Carbon (TOC) concentration of 4.6%, which would exceed the Inert Waste Landfill acceptance criteria (3%). Likewise, the Loss on Ignition concentration of 11% marginally exceeded the Hazardous Waste Landfill acceptance criteria (10%). However, it is considered likely that the site-won topsoil will be stripped during the redevelopment of the site and stockpiled for reuse as part of soft landscaping and garden areas.

6.7 Health & Safety Considerations

To ensure direct exposure of construction workers involved in the site redevelopment to any impacted contaminated shallow soils is minimised, the guidance stated in HSG 66 "Protection of Workers and the General Public During Redevelopment of Contaminated Land" should be followed.

Potential Source Areas	Potential Contaminant of Concern	Pathways	Potential Receptor	Exposure Route (Human unless otherwise stated)	Potential Identified Linkage (unmitigated)	Findings of Ground investigation	Risk (Un-mitigated)	Proposed Remediation (Mitigation) Measures	Residual Risk Estimation
<u>On-site Sources</u>	Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, Boron, TPH /PAH, PCBs	Disturbance due to construction plant causing direct contact, dusts, vapours.	Occupants of the development / building fabric	• Direct Soil Ingestion	• Yes	No threshold exceedance	Very low	None required	Very low
Agricultural Land				• Indoor Dust ingestion	• Yes	No threshold exceedance	Very low	None required	Very low
Unspecified Tank				• Skin Contact with Soils	• Yes	No threshold exceedance	Very low	None required	Very low
<u>Off-site Sources</u>				• Skin Contact with Dust	• Yes	No threshold exceedance	Very low	None required	Very low
Former Cotton & Rayon Mills		• Inhalation of Outdoor Dust		• Yes	No threshold exceedance	Very low	None required	Very low	
Infilled / drained mill pond / reservoir		• Ingestion of home grown produce		• Yes	No threshold exceedance	Very low	None required	Very low	
Refuse Tip		• Inhalation of Outdoor Vapours		• Yes	No threshold exceedance	Very low	None required	Very low	
		• Inhalation of Indoor Vapours		• Yes	No threshold exceedance	Very low	None required	Very low	
General Made Ground		Inhalation of fibres / vapours / gases by occupants of proposed development	Adjacent residents during construction	• Inhalation of ground gas	• Yes	CS3	High risk	Gas protection required	Low
Highmoor Farm				• Inhalation of radon gas	• No	Lower Probability Area	Negligible	None	Negligible
Residential Properties		Permeation of water supply pipework	Secondary Aquifers	• Ingestion via permeated water supply pipework	• Yes	No threshold exceedance	Very low	None required	Very low
Electrical sub-station				• Direct contact with Secondary (Undifferentiated) Aquifer in Superficial Deposits	• Yes	No threshold exceedance	Very low	None required	Very low
				• In-direct contact with Secondary (B) Aquifer in bedrock	• Yes	No threshold exceedance	Very low	None required	Very low

Table 5: Refined Conceptual Site Model

Direct contact with subsurface soil and/or groundwater during redevelopment works are not assessed as part of the CSM. It is considered that risks to workers will be managed as part of any the redevelopment works at the site through the application of health and safety procedures, where required.

7 GEOTECHNICAL SITE ASSESSMENT

7.1 Geotechnical Considerations

Made Ground was only encountered within one of the exploratory hole locations (WS1) to 0.45m bgl. Topsoil was encountered within all exploratory hole locations to depths of between 0.05m and 0.3m bgl.

Superficial Till deposits were encountered within all the exploratory holes underlying the Made Ground and/or topsoil, comprising brown locally slightly sandy slightly gravelly CLAY overlying stiff brownish grey gravelly locally very gravelly CLAY. The gravel comprised mudstone, sandstone and locally limestone.

GRAVEL deposits were encountered in WS5 from 2.0 to at least 3.5m bgl where it was not fully penetrated and in WS6 between 1.0 and 1.2m bgl, in the south-western and south-eastern areas of the site respectively.

Bedrock was not identified during the intrusive ground investigation.

The only groundwater strike recorded during Remada's investigation was in WS1 at 3m depth. However, standing water has been encountered within all six standpipes during the subsequent monitoring programme.

7.2 Preliminary Foundation Design Recommendations

It is understood that the development will comprise two-storey housing for which a line load of 25kN/m per floor is considered appropriate. Hence the estimated pressure for 0.6m wide strip footing is 83 kPa.

Based upon the window sample borehole information, the allowable bearing capacity of the firm CLAY ($C_u = 50$ kPa) beneath a strip footing of depth 1.2m and width 0.6m is estimated as 100 kPa to limit settlement to 25mm.

Foundations may need to be locally deepened where soft spots are present. A foundation schedule will be required for the proposed layout.

7.3 Shrinkage and Swelling

All samples of CLAY were reported as being LOW to HIGH plasticity with between 75% and 100% passing a 0.425mm sieve. The modified plasticity index equates at Low to Medium Volume Change Potential.

BRE 412 states that where the natural moisture content is less than 0.4 times the Liquid Limit ($w < 0.4 w_L$) it is indicative of desiccation. Soil desiccation has potentially occurred in five (5 No.) locations (TP3 at 1.6m, TP4 at 2.1m, TP7 at 0.7m, TP10 at 1.8m and TP12 at 1.9m bgl).

The minimum foundation depths outside the zone of tree influence as specified by the NHBC have been reproduced in **Table 7** below, however:

Volume Change Potential	A) Minimum foundation depth (m) (allowing for restricted new planting)	B) Minimum foundation depth (m) (where planting is outside the zone of influence of trees)
High	1.50	1.0
Medium	1.25	0.9
Low	0.9	0.75

Table 7: NHBC 2023 Table 4 Minimum Foundation Depths

7.4 Imported Fill

All imported fill material should comply with an earthworks specification to be prepared by the engineer and not contain concentrations of contaminants at greater than the Generic Assessment Criteria (GAC) presented in Table 3.

7.5 Excavations and Temporary Works

Based on the encountered ground conditions and observations on-site, it is considered that excavations to less than 1.2m depth from current ground level should typically stand unsupported in the short term (1 – 14 days). Excavated side slope angles in wet firm to stiff CLAY of 20 – 35 degrees are likely to be suitable, increasing to 35 – 45 degrees for dry firm to stiff CLAY, based on CIRIA Report 97 Trenching Practice. A detailed inspection of the side slopes should be made during excavation and a risk assessment carried out to fully assess the support measures required.

Groundwater is likely to be encountered as seepages within excavations. During Remada's investigation, a seepage was recorded at 3.0m bgl in WS1 only, although the resting level within all monitoring wells ranged between 0.71m and 2.6m bgl.

7.6 Highway Construction

CBR values estimated from the DCP tests indicated that, near surface the CBR values were variable with several values of between 5 and 10% recorded.

7.7 Protection of Buried Concrete

In accordance with BRE SD1 for buried concrete on a site with undisturbed ground in its natural state, and with static groundwater, analysis of selected samples for water soluble sulphate returned values of between 11.3 and 114mg/l and pH > 8.0. The characteristic values for pH and water soluble sulphate would meet the criteria for Design Sulphate Class DS-1.

Samples analysed in the three shallowest depths (in TP2, TP6 and TP10 at 1.2 – 1.6m bgl) are indicative of AC1s and DS-1. However, a total potential sulphate value of 1.45% was also calculated based on the highest total sulphur content in TP3 at 1.8m bgl. Based on this calculated Total Potential Sulphate value, Design Sulphate Class DS-4 would be considered appropriate for buried concrete and an ACEC Class of AC-3s.

It is recommended that additional BRE SD1 analysis be undertaken once the finalised foundation profile for the residential scheme is available, as this may reduce the Design Sulphate and ACEC Classes for the site.

7.8 Soakaway Drainage

Three soakaway tests were conducted within trial pits located across the site. The results indicated that there was minimal infiltration and as such soakaways will not be suitable for the proposed development.

7.9 General Construction Advice

All formations should be cleaned, and subsequently inspected, by a suitably qualified engineer prior to placing concrete. Should any soft, compressible or otherwise unsuitable materials be encountered they should be removed and replaced by blinding concrete.

Foundation concrete, or alternatively, a blinding layer of concrete, should be placed immediately after excavation and inspection in order to protect the formation against softening and disturbance.

Generally, all formations should be placed wholly within the same material type, unless specific geotechnical inspection and assessment have been undertaken.

Where applicable ground beneath the proposed building footprint and potentially car parking may require to be stripped to reveal localised areas of made ground and structures. Excavations should be backfilled with suitably re-compacted materials to achieve formation level.

During foundation excavation works arisings should be constantly monitored for the presence of contamination.

8 CONCLUSIONS & RECOMMENDATIONS

8.1 Conclusions

The following conclusions have been made based on the findings of this investigation.

8.1.1 Phase 2 Site Investigation

Made Ground was encountered in one location (WS1) to 0.45m bgl, comprising slightly clayey, slightly sandy GRAVEL. Elsewhere, topsoil was encountered to depths of between 0.05m and 0.3m bgl. Superficial Till deposits were encountered within all exploratory hole locations. The material recovered comprised brown locally slightly sandy slightly gravelly CLAY overlying stiff brownish grey gravelly locally very gravelly CLAY. The gravel comprised mudstone, sandstone and locally limestone.

GRAVEL deposits were encountered in WS5 from 2.0m to at least 3.5m bgl where it was not fully penetrated and in WS6 between 1.0 and 1.2m bgl, in the south-western and south-eastern areas of the site respectively. Bedrock was not recovered within any of Remada's exploratory locations.

8.1.2 Human Health Risk Assessment

The results of soil chemical analysis were compared to Human Health Generic Assessment Criteria for residential land use with home grown produce and none of the analytes tested were detected at concentrations that exceeded the human health GAC protective of on-site workers.

8.1.3 Water Resources Risk Assessment

The results of the soil chemical analysis undertaken has identified that concentrations of metals and inorganic contaminants are within the range that would be expected for 'typical' natural soils. Detectable concentrations of TPH and PAHs were encountered in some samples. However, the contaminants identified are of low solubility and mobility and as such are unlikely to present a risk to groundwater beneath the site.

The ground investigation has indicated that the majority of the site is underlain by CLAY, with water being localised and perched. The only groundwater strike recorded during Remada's investigation was in WS1 at 3.0m depth. However, standing water has been encountered within all six standpipes during the subsequent monitoring programme.

Consequently, the risk of leaching of contaminants as a result of infiltration of groundwater is limited. Therefore, the risk to controlled waters from contaminants within the natural soil at the site is considered to be low and does not warrant further consideration at this stage.

8.1.4 Waste Classification

Waste Acceptance Criteria (WAC) analysis was undertaken on a sample of topsoil and two samples of natural soil. The assessment of samples indicated that both samples of clay met the requirements for disposal in an Inert landfill.

The topsoil sample from TP1 at 0.1m recorded a Total Organic Carbon (TOC) concentration of 4.6%, which would exceed the Inert Waste Landfill acceptance criteria (3%). Likewise, the Loss on Ignition concentration of 11% marginally exceeded the Hazardous Waste Landfill acceptance criteria (10%). However, it is considered likely that the site-won topsoil will be stripped during the redevelopment of the site and stockpiled for reuse as part of soft landscaping and garden areas.

8.2 Recommendations

It is understood that the development will comprise two-storey housing for which a line load of 25kN/m per floor is considered appropriate. Hence the estimated pressure for 0.6m wide strip footing

is 83 kPa. Based upon the window sample borehole information, the allowable bearing capacity of the firm CLAY ($C_u = 50$ kPa) beneath a strip footing of depth 1.2m and width 0.6m is estimated as 100 kPa to limit settlement to 25mm.

Foundations may need to be locally deepened where soft spots are present. A foundation schedule will be required for the proposed layout.

All samples of CLAY were reported as being LOW, INTERMEDIATE and HIGH plasticity with between 75% and 100% passing a 0.425mm sieve. The modified plasticity index equates at Low to Medium Volume Change Potential.

Due to a Total Potential Sulphate (TPS) = 1.45%, a Design Sulphate Class DS-4 is considered appropriate for buried concrete and an ACEC Class of AC-3s is considered appropriate for the location. It is recommended that additional BRE SD1 analysis is undertaken, in order to further investigate and potentially delineate the protection requirements for buried concrete on the site possibly as part of plot scheduling.

Three soakaway tests were conducted within trial pits located across the site. The results indicated that there was minimal infiltration and as such soakaways will not be suitable for the proposed development.

Side slopes within the clay are likely to remain stable in the short term without support or without being battered back to a safe slope gradient. However, a detailed inspection of the side slopes should be made during excavation and a risk assessment carried out to fully assess the support measures

8.3 Ground Gas

The ground gas and groundwater monitoring programme is ongoing, with the results to be forwarded upon completion. However, the results of the first three (3 No.) rounds of gas monitoring place the site into gas Characteristic Situation 3 and therefore ground gas protection measures will likely be required within the proposed buildings. It may be possible to zone the site between CS1 and CS3.

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STUDY LIMITATIONS

IMPORTANT. This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Remada, Ltd with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with (the 'Client'). Remada does not accept responsibility for any matters outside the agreed scope.

2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.

3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Remada is unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have published, more stringent objectives. Further work may be required by these parties.

4. All work carried out in preparing this report has used, and is based on, Remada's professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice pending changes in legislation, of which Remada is aware, have been considered. Following delivery of the report Remada has no obligation to advise the Client or any other party of such changes or their repercussions.

5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.

6. Whilst this report and the opinions made are to the best of Remada's belief, Remada cannot guarantee the accuracy or completeness of any information provided by third parties.

7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have received.

8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.

9. The content of this report represents the professional opinion of experienced environmental consultants. Remada does not provide specialist legal or other professional advice. The advice of other professionals may be required.

10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on site.

12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.

13. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes.

TABLES

(Not presented in report body)

Table 2: Gas Groundwater Monitoring Data

GAS & GROUNDWATER MONITORING DATA																							
SITE		Hgh Moor Park, C there																					
PROJECT No.		1134.02																					
Visit 1 of 6		Atmospheric & Ground Conditions																					
Carried Out by:		Atmospheric Pressure Variations During Visit																					
Date:		986mb																					
Instrument Details		Ground Surface Conditions																					
GFM436 14048		Dry																					
		Atmospheric Pressure Trend Over Previous 48hrs																					
		Weather Conditions																					
		Sunny, Warm																					
Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		H ₂		CO (ppm)		Duration (secs)*	Flow Rate (l/hr)	Relative Pressure (mb)	PD (ppm)	Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m AOD)	Depth of Pipe (m bgl)	Comments	
			Peak	Steady		Peak	Steady	Minimum	Steady	Minimum	Steady	Minimum	Steady				Peak	Steady					
WS1		50	0.0	0.0	0.0	2.3	2.3	19.2	19.6					60	0.0	0.00			1015	1.630		3.710	
WS2		50	0.0	0.0	0.0	1.7	1.4	18.3	18.5					60	2.8	0.00			1015	1.060		4.820	
WS3		50	0.0	0.0	0.0	1.7	1.5	18.2	18.2					60	0.0	0.00			1015	2.600		3.820	
WS4		50	0.0	0.0	0.0	1.5	0.7	18.9	20.1					60	0.0	0.00			1015	1.030		4.070	
WS5		50	0.0	0.0	0.0	0.8	0.6	19.9	20.0					60	8.1	0.00			1014	0.930		2.990	
WS6		50	0.0	0.0	0.0	1.2	0.8	20.3	20.3					60	0.0	0.0			1014	1.210		1.900	

NR = Not Recorded

* For measurement of gas concentrations

> = Above LEL

WST = Water Sample Taken

GL = Ground Level

GAS & GROUNDWATER MONITORING DATA																	REMADA GEO CONSULTANTS						
SITE		Hghmoor Farm, C there																					
PROJECT No.		C30893																					
Visit 2 of 6		Atmospheric Pressure Variations During Visit													Ground Surface Conditions								
Carried Out by:		Ben Taylor													1008mb 1009mb				Dry				
Date:		24.04.25																					
Instrument Details		GFM436 Sera number 13121													Atmospheric Pressure Trend Over Previous 48hrs				Weather Conditions				
		Steady													Partly cloudy, no rain, slight wind.								
Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		H ₂ (ppm)		CO (ppm)		Duration (secs)*	Flow Rate (l/hr)	Relative Pressure (mb)	PD (ppm)		Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m AOD)	Depth of Pipe (m bgl)	Comments
			Peak	Steady		Peak	Steady	Minimum	Steady	Minimum	Steady	Minimum	Steady				Peak	Steady					
WS1		50	0.0	0.0	0.0	0.1	0.1	20.0	20.0	0.0	0.0	0.0	0.0	240	0.0	NR			1009	0.710		3.800	
WS2		50	0.0	0.0	0.0	1.3	1.3	17.4	17.4	0.0	0.0	0.0	0.0	240	55.5	NR			1009	1.040		4.920	
WS3		50	0.0	0.0	0.0	0.0	0.0	20.2	20.2	0.0	0.0	0.0	0.0	300	0.0	NR			1009	0.820		3.880	
WS4		50	0.0	0.0	0.0	0.8	0.8	19.7	19.7	0.0	0.0	10.0	10.0	240	0.0	NR			1008	1.040		4.160	
WS5		50	0.0	0.0	0.0	0.6	0.6	19.3	19.3	0.0	0.0	10.0	10.0	300	50.6	NR			1008	0.850		3.040	
WS6		50	0.0	0.0	0.0	1.6	1.6	19.2	19.2	0.0	0.0	0.0	0.0	240	0.9	NR			1009	0.990		2.030	

Notes:

NR = Not Recorded

* For measurement of gas concentrations

> = Above LEL

WST = Water Sample Taken

GL = Ground Level

GAS & GROUNDWATER MONITORING DATA																	REMADA GEO CONSULTANTS									
SITE		Hghmoor Farm, C there																								
PROJECT No.		C30893															Atmospheric & Ground Conditions									
Visit 3 of 6																	Atmospheric Pressure Variations During Visit					Ground Surface Conditions				
Carried Out by:		Ben Tay or															1011mb 1011mb					Dry				
Date:		14.05.2025																								
Instrument Details		GFM436 Sera number 13121															Atmospheric Pressure Trend Over Previous 48hrs					Weather Conditions				
		R s ng																				Clear, no ra n, s ght wnd.				
Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		H2S (ppm)		CO (ppm)		Duration (secs)*	Flow Rate (l/hr)	Relative Pressure (mb)	PID (ppm)		Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m AOD)	Depth of Pipe (m bgl)	Comments			
			Peak	Steady		Peak	Steady	Minimum	Steady	Minimum	Steady	Minimum	Steady				Minimum	Steady						Peak	Steady	
WS1		50	0.0	0.0	0.0	0.6	0.6	20.2	20.2	0.0	0.0	0.0	0.0	240	0.0	0.00			1011	0.820		3.760				
WS2		50	0.0	0.0	0.0	0.8	0.8	18.7	18.7	0.0	0.0	0.0	0.0	240	50.0	120.00			1011	1.100		4.900				
WS3		50	0.0	0.0	0.0	0.4	0.4	20.2	20.2	0.0	0.0	0.0	0.0	300	0.0	0.00			1011	0.910		3.870				
WS4		50	0.0	0.0	0.0	0.8	0.8	20.1	20.1	0.0	0.0	0.0	0.0	240	2.2	5.00			1011	1.100		4.140				
WS5		50	0.0	0.0	0.0	0.6	0.6	19.1	19.1	0.0	0.0	10.0	0.0	300	7.0	16.00			1011	0.860		3.050				
WS6		50	0.0	0.0	0.0	1.0	1.0	19.8	19.8	0.0	0.0	10.0	0.0	240	15.0	34.00			1011	1.010		2.020				

Notes:

NR = Not Recorded

* For measurement of gas concentrations

> = Above LEL

WST = Water Sample Taken

GL = Ground Level

Table 2: Gas and Groundwater Monitoring Data

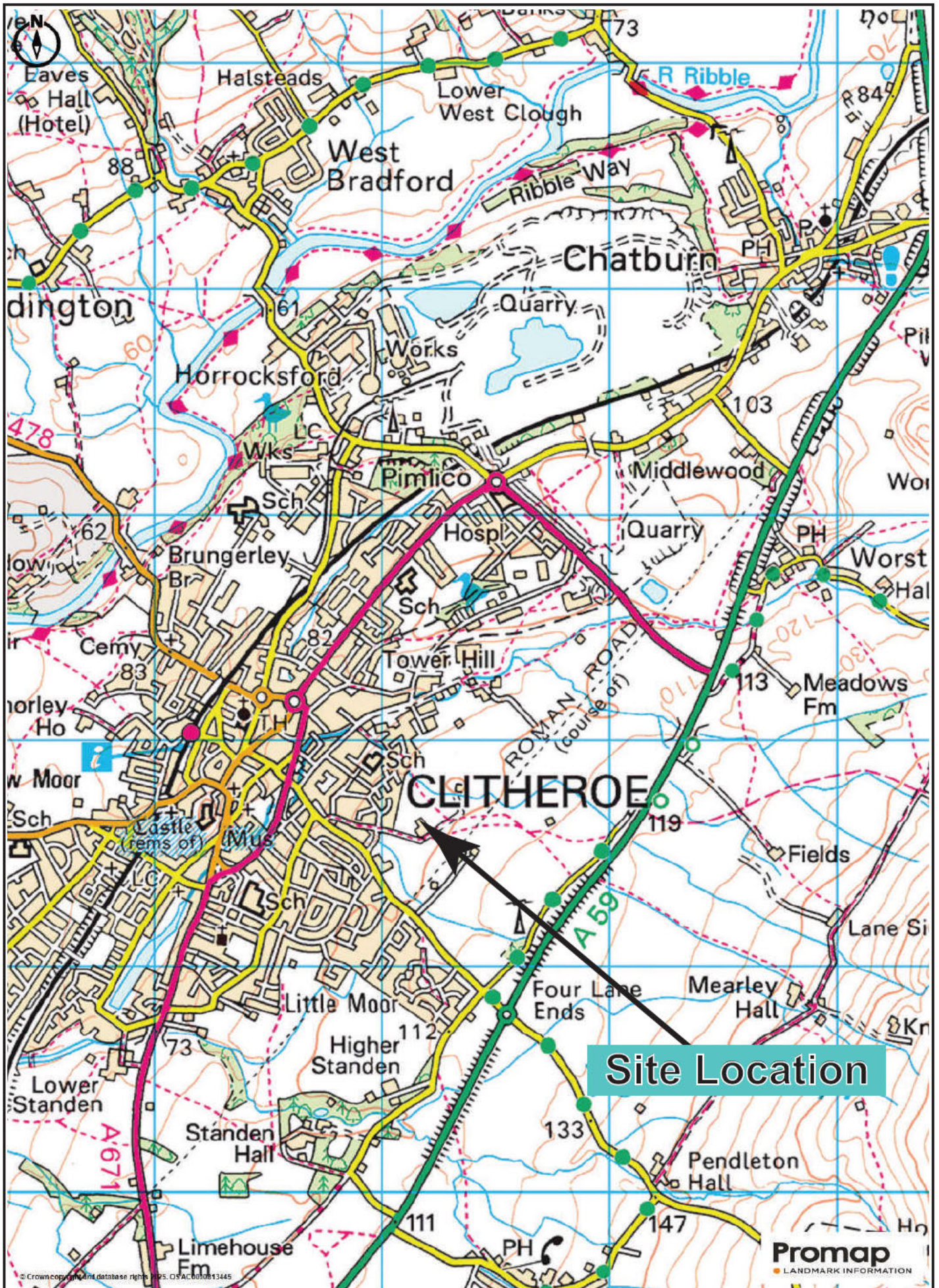
Table 3: Comparison of Soil Chemical Analyses with GAC

Lab Sample Number:				Residential GAC with homegrown produce 6.0% SOM	507208	507209	507210	507211	510619	510620	510621	510622
Sample Reference:					WS1	WS3	WS5	WS6	TP1	TP2	TP7	TP10
Top Depth (m):					0.2	0.1	0.1	0.5	0.1	0.4	0.2	0.4
Basal Depth (m):					-	-	-	-	-	-	-	-
Date Sampled:					02/04/2025	02/04/2025	02/04/2025	02/04/2025	10/04/2025	10/04/2025	10/04/2025	10/04/2025
Determinand	Units	Limit of detection	Accreditation Status	[mg/kg unless stated]								
Stones	%	0.01	NONE		47.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture	%	0.01	NONE		18	34	32	20	27	20	38	21
Asbestos non So	Type	N/A	ISO 17025		Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos % by hand pick ng/weight g	%	-	-		-	-	-	-	-	-	-	-
Asbestos Containing Material Types Detected (ACMT)	Type	-	-		-	-	-	-	-	-	-	-
pH	pH Units	N/A	MCERTS		8.6	6.6	6.5	8.1	6.3	7.7	6.5	7.2
Arsenic	mg/kg	1.00	MCERTS	37	8.4	14	15	13	13	15	15	12
Beryllium	mg/kg	0.06	MCERTS	1.7	0.99	1.2	1.1	1.5	0.84	1.3	1.1	1.4
Boron	mg/kg	0.20	MCERTS	290	2	2	0.6	0.7	1.2	0.6	2.7	0.9
Cadmium	mg/kg	0.20	MCERTS	11	0.8	1.2	0.7	0.6	0.8	1.2	1.2	0.8
Chromium (Hexavalent)	mg/kg	1.80	MCERTS	6	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (Trivalent)	mg/kg	1.00	NONE	910	13	35	26	34	33	25	35	28
Chromium (aqueous extractable)	mg/kg	1.00	MCERTS	-	14	36	27	35	34	26	37	30
Copper	mg/kg	1.00	MCERTS	2400	24	21	27	21	25	16	35	21
Lead	mg/kg	1.00	MCERTS	200	42	72	64	26	64	30	78	37
Mercury	mg/kg	0.30	MCERTS	1.20	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel	mg/kg	1.00	MCERTS	126	20	21	23	46	17	44	21	32
Selenium	mg/kg	1.00	MCERTS	250	< 1.0	1.3	1.3	1.2	< 1.0	1.7	< 1.0	1.3
Vanadium	mg/kg	1.00	MCERTS	410	23	54	42	43	50	33	56	38
Zinc	mg/kg	1.00	MCERTS	3700	120	140	130	85	130	150	170	170
Total Cyanide	mg/kg	1.00	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	0.027	0.044	0.036	0.0086	0.046	0.092	0.11	0.018
Calculated TOC from FOC	-	-	-	-	2.70	4.40	3.60	0.86	4.60	0.92	11.00	1.80
Calculated SOM from FOC	-	-	-	-	4.66	7.59	6.21	1.48	7.93	1.59	18.97	3.10
Aromatic TPH >C5-C6	mg/kg	0.01	NONE	160	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Aromatic TPH >C6-C8	mg/kg	0.01	NONE	530	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Aromatic TPH >C8-C10	mg/kg	0.01	NONE	150	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Aromatic TPH >C10-C12	mg/kg	1.00	MCERTS	760vap (283)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	mg/kg	2.00	MCERTS	4300se (142)	2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic TPH >C16-C21	mg/kg	8.00	MCERTS	110000	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Aromatic TPH >C21-C35	mg/kg	8.00	MCERTS		11	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Total Aliphatic Hydrocarbons:	mg/kg	10.00	NONE	-	13	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic TPH >C5-C7	mg/kg	0.01	NONE	300	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Aromatic TPH >C7-C8	mg/kg	0.01	NONE	660	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Aromatic TPH >C8-C10	mg/kg	0.02	NONE	190	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Aromatic TPH >C10-C12	mg/kg	1.00	MCERTS	380	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	mg/kg	2.00	MCERTS	660	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aromatic TPH >C16-C21	mg/kg	10.00	MCERTS	930	11	< 10	11	< 10	< 10	< 10	< 10	< 10
Aromatic TPH >C21-C35	mg/kg	10.00	MCERTS	1700	21	< 10	14	< 10	< 10	< 10	< 10	< 10
Total Aromatic Hydrocarbons	mg/kg	10.00	NONE	-	32	< 10	25	< 10	< 10	< 10	< 10	< 10
Calculated Sum TPH (sum Aliphatic + sum Aromatic)				-	45	<20	<35	<20	<20	<20	<20	<20
Naphthalene	mg/kg	0.05	MCERTS	13	0.1	0.06	0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	920	0.22	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	1100	0.07	0.11	0.45	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	860	0.18	0.08	0.29	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	440	2.2	0.86	3.4	< 0.05	0.19	< 0.05	0.29	< 0.05
Anthracene	mg/kg	0.05	MCERTS	11000	0.59	0.16	0.73	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	890	4.6	1.7	5.3	< 0.05	0.44	< 0.05	0.73	< 0.05
Pyrene	mg/kg	0.05	MCERTS	2000	4	1.4	4.5	< 0.05	0.42	< 0.05	0.68	< 0.05
Benzo[a]anthracene	mg/kg	0.05	MCERTS	13	2	0.74	2.1	< 0.05	0.18	< 0.05	0.35	< 0.05
Chrysene	mg/kg	0.05	MCERTS	27	2.1	0.8	2.3	< 0.05	0.28	< 0.05	0.42	< 0.05
Benzo[b]fluoranthene	mg/kg	0.05	ISO 17025	3.7	2.5	0.89	2.4	< 0.05	0.33	< 0.05	0.55	< 0.05
Benzo[k]fluoranthene	mg/kg	0.05	ISO 17025	100	1.1	0.43	1	< 0.05	0.12	< 0.05	0.26	< 0.05
Benzo[a]pyrene	mg/kg	0.05	MCERTS	3	2.3	0.83	2.2	< 0.05	0.23	< 0.05	0.49	< 0.05
Indeno[1,2,3-c,d]pyrene	mg/kg	0.05	MCERTS	41	1.1	0.38	1	< 0.05	0.12	< 0.05	0.22	< 0.05
Dibenz[a,h]Anthracene	mg/kg	0.05	MCERTS	0.3	0.29	0.11	0.27	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[g,h,i]perylene	mg/kg	0.05	MCERTS	350	1.2	0.4	1.1	< 0.05	0.15	< 0.05	0.25	< 0.05
Total of 16 PAHs	mg/kg	0.8	ISO 17025	-	11.5	< 0.80	3.25	6.92	2.44	< 0.80	4.23	< 0.80
Benzenes	ug/kg	5.00	MCERTS	0.37*	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	ug/kg	5.00	MCERTS	660*	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	ug/kg	5.00	MCERTS	260*	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p- and m-xylene	ug/kg	8.00	MCERTS	310*	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-xylene	ug/kg	5.00	MCERTS	330*	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	5.00	NONE	160	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Phenols	mg/kg	1.00	MCERTS	380	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 1.0

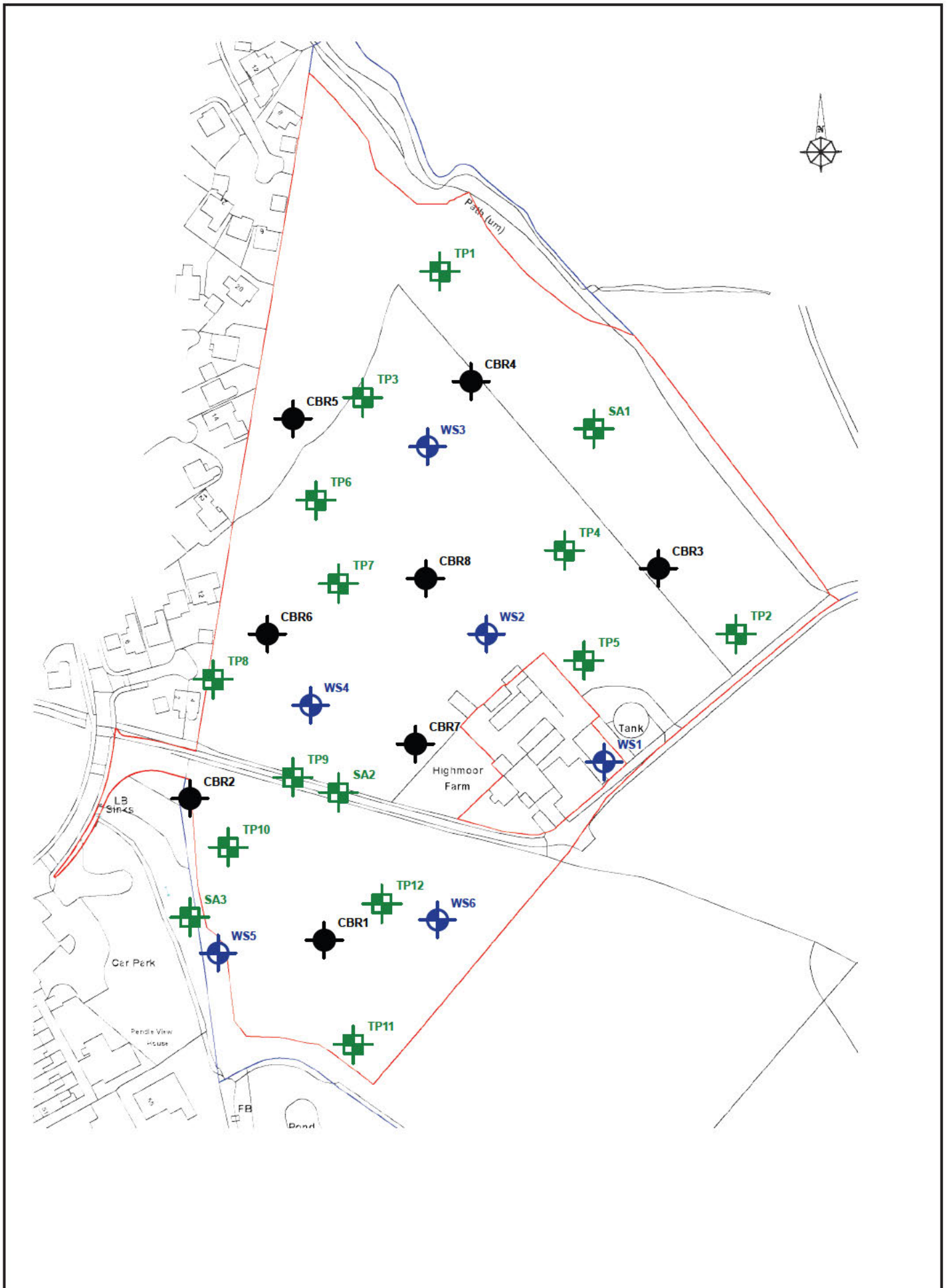
	Determinand concentration below the GAC
	Determinand concentration in excess of GAC
	Determinand concentration in excess of the vapour/solubility saturation limit.

NC: No published criteria, U.S. Unsuitable sample
vap: Screening criteria presented exceed the vapour saturation limit, which is presented in brackets.
sol: Screening criteria presented exceed the solubility saturation limit, which is presented in brackets.
dt: Screening criteria based on threshold protective of direct skin contact (guideline in brackets based on health effects following long term exposure provided for illustration only).
(1): For assessment based on the use of the surrogate marker approach the GAC for Coal Tar must be used instead of benzo[a]pyrene.
* Value presented in mg/kg

FIGURES



Notes	Revision	Approved	Date	Project Title	Scale	Drawn	Size
				Highmoor Farm, Clitheroe	as shown	PD	A4
				Drawing Title	Date	Job No.	Figure No.
				Site Location Plan	24.01.25	1134	01
				Client			
				Vernon & Co.			



Notes The proposed site layout plan has been reproduced from drawing 'Proposed Development of Land at Highmoor Farm Clitheroe' by Gary Hoerty Associates, drawing No. VHLP/778/2576/02 dated July 2020.	Revision	Approved	Date	Project Title	Scale	Drawn	Size
				Highmoor Farm, Clitheroe	as shown	LH	A4
				Drawing Title	Date	Job No.	Figure No.
				Exploratory Hole Location Plan	19.05.25	1134	03
				Client			
				Vernon & Co.			



Notes

The proposed site layout plan presented here is indicative only and may be subject to change following publication of Remada's Phase 1 report.

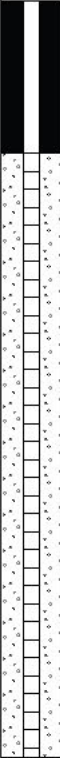
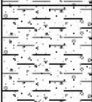
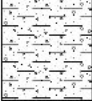
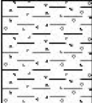
Revision	Approved	Date	Project Title	Scale	Drawn	Size
			Highmoor Farm, Clitheroe	as shown	LH	A4
			Drawing Title	Date	Job No.	Figure No.
			Proposed Indicative Site Layout	29.01.25	1134	03
			Client			
			Vernon & Co.			

EXPLORATORY HOLE LOGS

[illegible]

Percussion Drilling Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 02/04/2025	
Location:		Contractor:		Co-ords: E375160.00 N441628.00	
Project No. : 1134.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS2	Hole Type WS	Level	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30			Grass over dark brown clayey TOPSOIL with rootlets.	
					0.80			Firm light brown slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone.	
		1.00	SPT	N=9 (1,2/2,2,2,3)				Firm dark brownish grey slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse mudstone.	1
		1.20	D					<i>Locally soft between 0.8 and 1.0m bgl.</i>	
		2.00	SPT	N=15 (2,4/1,4,4,6)	2.10				2
		2.20	D					Stiff dark brownish grey gravelly to very gravelly CLAY. Gravel is angular to rounded fine to coarse mudstone.	
		3.00	SPT	N=19 (3,3/4,4,5,6)					3
		4.00	SPT	N=24 (4,4/5,6,6,7)					4
		5.00	SPT	N=20 (4,4/5,5,5,5)	5.00				5
								End of Borehole at 5.000m	6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater not encountered. 2. Gas and groundwater monitoring well installed on completion.										
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Percussion Drilling Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 02/04/2025	
Location:		Contractor:		Co-ords: E375157.00 N441694.00	
Project No. : 1134.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS3	Hole Type WS	Level	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

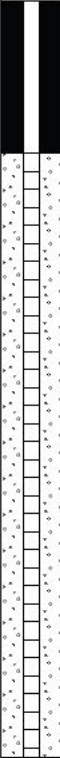
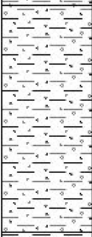
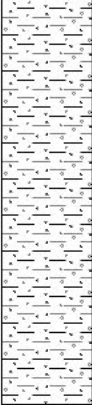
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	D		0.30			Grass over dark brown clayey TOPSOIL with rootlets.	
		1.00	SPT	N=11 (1,1/11 for 295mm)				Firm brown and light brown slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse sandstone and mudstone.	1
		1.20	D					<i>Locally soft between 0.8 and 1.0m bgl.</i>	
		2.00	SPT	N=13 (2,2/2,3,4,4)	1.70			Stiff dark brownish grey gravelly to very gravelly CLAY. Gravel is angular to rounded fine to coarse mudstone.	2
		3.00	SPT	N=22 (3,4/4,6,6,6)					3
		4.00	SPT	N=50 (8,6/5,14,14,17)	4.00			End of Borehole at 4.000m	4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater not encountered. 2. Gas and groundwater monitoring well installed on completion. 3. Terminated due to SPT refusal (N>50).										
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Percussion Drilling Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 02/04/2025	
Location:		Contractor:		Co-ords: E375100.00 N441611.00	
Project No. : 1134.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS4	Hole Type WS	Level	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.80 - 2.30	B		0.20			Grass over dark brown clayey TOPSOIL with rootlets.	
		1.00	SPT	N=8 (1,1/2,2,2,2)	0.80			Firm brown and light brown slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse sandstone and mudstone.	1
		2.00	SPT	N=11 (5,2/2,2,3,4)	2.30			Soft becoming firm dark brownish grey slightly to gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone.	2
		3.00	SPT	N=15 (3,3/3,3,4,5)				Stiff dark brownish grey gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone.	3
		4.00	SPT	N=13 (2,2/2,3,4,4)					4
		5.00	SPT	N=16 (3,3/3,3,4,6)	5.00			End of Borehole at 5.000m	5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater not encountered. 2. Gas and groundwater monitoring well installed on completion.										
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Percussion Drilling Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 02/04/2025	
Location:		Contractor:		Co-ords: E375059.00 N441487.00	
Project No. : 1134.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS5	Hole Type WS	Level	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

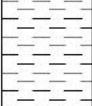
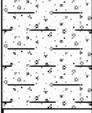
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.25			Grass over dark brown clayey TOPSOIL with rootlets.	
								Firm brown and light brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse mudstone.	
		1.00	SPT	N=10 (1,1/2,3,2,3)	1.00			Locally soft between 0.65 and 0.85m bgl.	1
		2.00 2.10	SPT D	N=11 (2,3/2,2,3,4)	1.90			Stiff dark brownish grey gravelly to very gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone and sandstone with rare subrounded mudstone cobbles.	
		3.00	SPT	N=24 (11,7/5,6,7,6)				Dark brownish grey sandy very clayey angular to subrounded fine to coarse GRAVEL of mudstone.	2
		3.50	SPT	N=50 (25 for 75mm/50 for 50mm)	3.50				3
								End of Borehole at 3.500m	4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater not encountered. 2. Gas and groundwater monitoring well installed on completion. 3. Terminated due to SPT refusal (N>50).										
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Percussion Drilling Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 02/04/2025	
Location:		Contractor:		Co-ords: E375145.00 N441498.00	
Project No. : 1134.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS6	Hole Type WS	Level	Logged By	Scale 1:50	Page Number Sheet 1 of 1

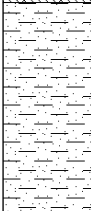
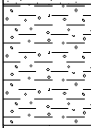
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25			Grass over dark brown clayey TOPSOIL with rootlets.	
		0.50	D					Firm brown and light brown CLAY.	
		1.00	SPT	N=15 (1,1/4,4,3,4)	1.00			Soft dark grey sandy clayey angular to subrounded fine to coarse GRAVEL of mudstone.	1
		1.20	B		1.20			Stiff dark brownish grey gravelly locally sandy CLAY. Gravel is angular to subrounded fine to coarse mudstone.	
		2.00	SPT	N=50 (4,7/50 for 295mm)	2.00			End of Borehole at 2.000m	2
									3
									4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater not encountered. 2. Gas and groundwater monitoring well installed on completion. 3. Terminated due to SPT refusal (N>50).										
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Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 10/04/2025	
Location:		Contractor:		Co-ords: E375207.00 N441696.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number SA1	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30			Grass over brown slightly clayey sandy TOPSOIL.	
								Firm light brown sandy CLAY.	
					1.00			Soft grey slightly sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse mudstone (wet).	1
					1.40			End of Borehole at 1.400m	
									2
									3
									4
									5

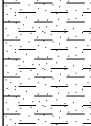
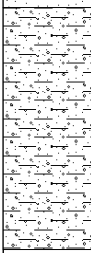
Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
		Pit sides stable.					

Remarks

1. Trial pit utilised as a soakaway; see separate sheet for details.
2. Groundwater not encountered.
3. Backfilled with arisings on completion.

Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 10/04/2025	
Location:		Contractor:		Co-ords: E375115.00 N441571.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number SA2	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25			Grass over brown slightly clayey sandy TOPSOIL.	1
								Firm light brown very sandy CLAY.	
					0.70			Soft grey slightly sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse mudstone (wet).	
					1.50			End of Borehole at 1.500m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability Pit sides stable.	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. Trial pit utilised as a soakaway; see separate sheet for details.
2. Groundwater not encountered.
3. Backfilled with arisings on completion.

Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 10/04/2025	
Location:		Contractor:		Co-ords: E375060.00 N441509.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number SA3	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25			Grass over brown slightly clayey sandy TOPSOIL.	1
					0.80			Firm to stiff light brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to coarse mudstone.	
					1.35			Soft brownish grey slightly sandy gravelly clay. Gravel is subangular to rounded fine to coarse mudstone (wet).	
								End of Borehole at 1.350m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
		Pit sides stable.					

Remarks 1. Trial pit utilised as a soakaway; see separate sheet for details. 2. Groundwater not encountered. 3. Backfilled with arisings on completion.							
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Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 09/04/2025	
Location:		Contractor:		Co-ords: E375151.00 N441761.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number TP01	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

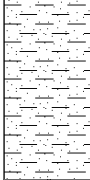
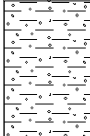
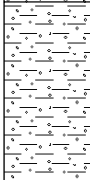
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.20			Grass over brown slightly clayey sandy TOPSOIL.	1
								Firm Light brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded fine to medium mudstone.	
		0.70	D		0.80			Soft brownish grey slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone with rare boulders up to 30cm (wet).	
					2.10			End of Borehole at 2.100m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
		Pit sides stable.					

Remarks 1. Groundwater not encountered, however, some material recovered wet. 2. Backfilled with arisings on completion.							
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Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 09/04/2025	
Location:		Contractor:		Co-ords: E375195.00 N441656.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number TP04	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

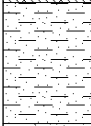
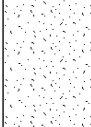
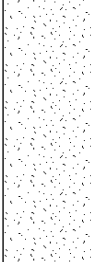
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25			Grass over brown slightly clayey sandy TOPSOIL.	1
					0.85			Firm orangish brown slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to medium mudstone.	
					1.30			Soft brownish grey slightly sandy gravelly CLAY. Gravel is angular to rounded fine to coarse mudstone (wet).	
								Soft to firm brownish grey slightly sandy very gravelly CLAY. Gravel is angular to subrounded fine to coarse with frequent boulders up to 35cm.	
									
					2.10		<i>Wet material</i>		2
					End of Borehole at 2.100m			3	
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
		Pit sides stable.					

Remarks 1. Groundwater not encountered, however, some material recovered wet. 2. Backfilled with arisings on completion.							
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Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 09/04/2025	
Location:		Contractor:		Co-ords: E375211.00 N441608.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number TP05	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

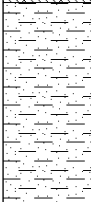
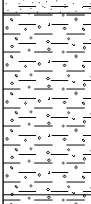
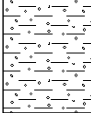
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30			Grass over brown slightly clayey sandy TOPSOIL.	1
					0.70			Firm orange brown slightly sandy CLAY with rare rounded fine to coarse mudstone gravel.	
								Soft greyish brown slightly silty slightly sandy gravelly CLAY. Gravel is angular to rounded fine to coarse with rare cobbles up to 30cm.	
		2.00	D		2.00			End of Borehole at 2.000m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
		Pit sides stable.					

Remarks 1. Groundwater not encountered. 2. Backfilled with arisings on completion.							
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Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 09/04/2025	
Location:		Contractor:		Co-ords: E375100.00 N441670.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number TP06	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30			Grass over brown clayey sandy TOPSOIL.	
								Firm light brownish grey sandy CLAY.	
		0.80	D		1.00			Soft light grey slightly sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse mudstone (wet).	1
								Soft grey slightly silty slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse mudstone (wet).	
		1.60	D		1.60				
					2.00			End of Borehole at 2.000m	2
									3
									4
									5

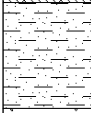
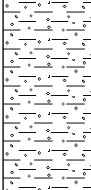
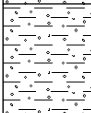
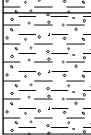
Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
		Pit sides stable.					

Remarks

- Groundwater not encountered, however, some material recovered wet.
- Backfilled with arisings on completion.

Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 09/04/2025	
Location:		Contractor:		Co-ords: E375112.00 N441621.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number TP07	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.30			Brown slightly clayey sandy TOPSOIL.	1
					0.65			Firm light brown slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to coarse mudstone.	
		0.70	B		1.30			Soft grey slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse mudstone with rare boulders up to 25cm.	
					1.70			Soft grey slightly silty slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone with rare boulders up to 40cm (wet).	
					2.10			Firm grey slightly sandy very gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone with cobbles.	
								End of Borehole at 2.100m	
									2
									3
									4
									5

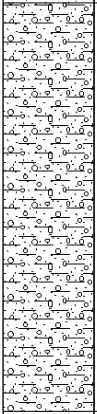
Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
		Pit sides stable.					

Remarks

- Groundwater not encountered, however, some material recovered wet.
- Backfilled with arisings on completion.

Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 09/04/2025	
Location:		Contractor:		Co-ords: E375065.00 N441608.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number TP08	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Firm light brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium mudstone.	
					0.45			Soft brownish grey slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone with frequent cobbles.	1
					1.80			End of Borehole at 1.800m	2
									3
									4
									5

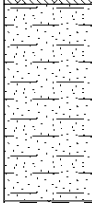
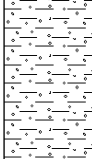
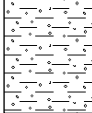
Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
		Pit sides stable.					

Remarks

- Groundwater not encountered.
- Backfilled with arisings on completion.

Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 09/04/2025	
Location:		Contractor:		Co-ords: E375093.00 N441572.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number TP09	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.70	ES		0.20			Brown slightly clayey sandy TOPSOIL.	1
								Light brown very clayey SAND.	
								Brownish grey slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone with rare boulders up to 40cm.	
								<i>Localised coarse gravel sized pockets of light brown SAND.</i>	
					1.75			End of Borehole at 1.750m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
		Pit sides stable.					

Remarks 1. Groundwater not encountered. 2. Backfilled with arisings on completion.							
---	--	--	--	--	--	--	---

Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 10/04/2025	
Location:		Contractor:		Co-ords: E375123.00 N441460.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number TP11	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.25	ES		0.30			Firm light orangish brown slightly gravelly very sandy CLAY. Gravel is subangular to subrounded fine to coarse mudstone.	1
					0.60			Soft to firm light brown slightly gravelly sandy CLAY. Gravel is subangular to rounded fine to coarse mudstone.	
		1.20	D		1.10			Soft grey slightly sandy very gravelly CLAY. Gravel is angular to rounded fine to coarse mudstone and slate with rare boulders up to 25cm (wet).	
		1.80	D		2.00			End of Borehole at 2.000m	
									2
									3
									4
									5

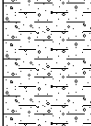
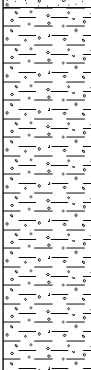
Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
		Pit sides stable.					

Remarks

- Groundwater not encountered, however, some material recovered wet.
- Backfilled with arisings on completion.

Trial Pit Log

Project Name: High Moor Farm, Clitheroe		Client: VH Land Partnerships Limited		Date: 10/04/2025	
Location:		Contractor:		Co-ords: E375127.00 N441505.00	
Project No. : 1134.02		Crew Name:		Equipment: 1.7 Tonne Tracked Excavator	
Location Number TP12	Location Type TP	Level	Logged By LH	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25			Grass over brown slightly clayey sandy TOPSOIL.	
					0.70			Light brown slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse mudstone.	
		1.50 1.50 1.50 1.50	B	HVP=16 HVP=17 HVP=19				Soft grey slightly sandy very gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone.	1
		1.90	D		1.90			End of Borehole at 1.900m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability Pit sides stable.	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

- Groundwater not encountered.
- Backfilled with arisings on completion.

APPENDIX A

SPT Hammer Energy Test Certificate



SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Socotec uk
Progress close
Binley
Coventry
CV3 2TF

SPT Hammer Ref: 110.24
Test Date: 30/01/2025
Report Date: 30/01/2025
File Name: 110.24.spt
Test Operator: DP

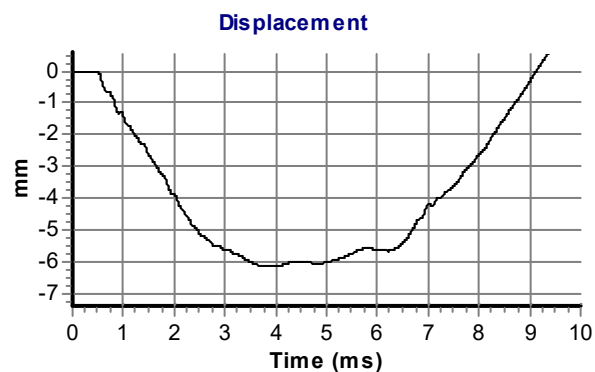
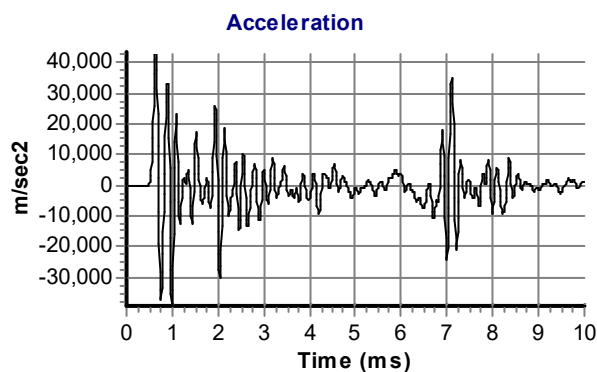
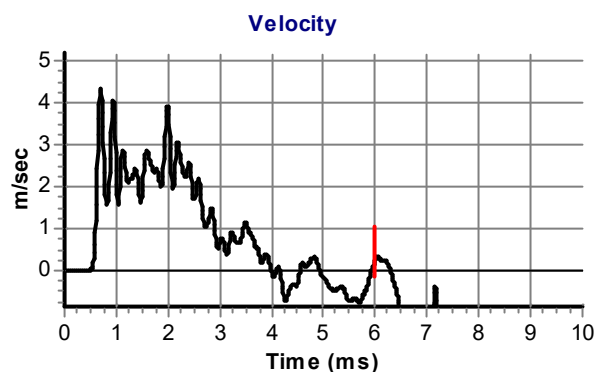
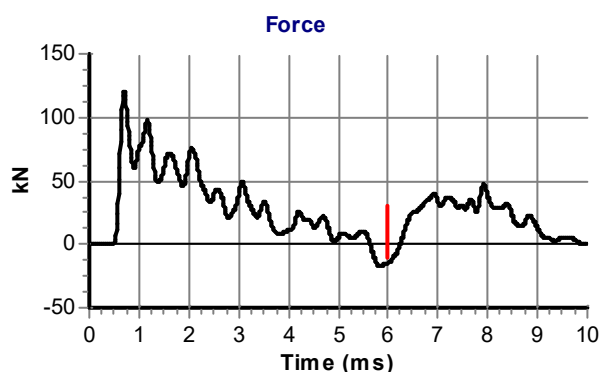
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.0
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 72570
Accelerometer No.2: 72571

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 12.6

Comments / Location



Calculations

Area of Rod A (mm^2): 905
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 417

Energy Ratio E_r (%): **88**

Signed: D Perrett
Title: Drilling Supervisor

APPENDIX B

Dynamic Cone Penetrometer (DCP) Test Results

TRL Dynamic Cone Penetrometer Test Results



Client:	VH Land Partnerships Ltd	Site Location:	High Moor Farm, Clitheroe	Test No:	CBR1	Location:	375106, 441497
Project No:	1134.02	Date:	10.4.2025	Start Depth:	Surface	Test Strata:	Topsoil
$\text{Log10(CBR)} = 2.480 - 1.057 \times \text{Log10(mm/blow)}$						Weather:	Dry Sunny

No of Blows	Depth Reading mm	Penetration/ Blow mm	CBR %	Estimated CBR %
0	57	0		
1	162	105.0	2.2	
2	232	70.0	3.4	
3	280	48.0	5.0	
4	322	42.0	5.8	
5	372	50.0	4.8	
6	421	49.0	4.9	
7	472	51.0	4.7	
8	512	40.0	6.1	
9	562	50.0	4.8	
10	629	67.0	3.5	
11	697	68.0	3.5	
12	772	75.0	3.1	
13	799	27.0	9.3	
14	820	21.0	12.1	
15	867	47.0	5.2	
16	952	85.0	2.8	

Notes:

Tested by: L Hillman
Date: 10.04.25

Checked by: K Szybut
Date: 02.05.25

TRL Dynamic Cone Penetrometer Test Results



Client:	VH Land Partnerships Ltd	Site Location:	High Moor Farm, Clitheroe	Test No:	CBR2	Location:	375063, 441549
Project No:	1134.02	Date:	10.4.2025	Start Depth:	Surface	Test Strata:	Topsoil
$\text{Log10(CBR)} = 2.480 - 1.057 \times \text{Log10(mm/blow)}$						Weather:	Dry Sunny

No of Blows	Depth Reading mm	Penetration/ Blow mm	CBR %	Estimated CBR %
0	62	0		
1	146	84.0	2.8	
2	182	36.0	6.8	
3	202	20.0	12.7	
4	222	20.0	12.7	
5	250	28.0	8.9	
6	284	34.0	7.3	
7	334	50.0	4.8	
8	371	37.0	6.6	
9	412	41.0	6.0	
10	456	44.0	5.5	
11	494	38.0	6.5	
12	534	40.0	6.1	
13	571	37.0	6.6	
14	601	30.0	8.3	
15	663	62.0	3.8	
16	702	39.0	6.3	
17	749	47.0	5.2	
18	800	51.0	4.7	
19	834	34.0	7.3	
20	850	16.0	16.1	
21	861	11.0	23.9	
22	874	13.0	20.1	
23	886	12.0	21.8	
24	894	8.0	33.5	
25	903	9.0	29.6	
28	921	6.0	45.4	
29	936	15.0	17.3	
30	945	9.0	29.6	

Notes:

Tested by L Hillman
Date: 10.04.25

Checked by: K Szybut
Date: 02.05.25

TRL Dynamic Cone Penetrometer Test Results



Client:	VH Land Partnerships Ltd	Site Location:	High Moor Farm, Clitheroe	Test No:	CBR3	Location:	375237, 441662
Project No:	1134.02	Date:	10.4.2025	Start Depth:	Surface	Test Strata:	Topsoil
$\text{Log10(CBR)} = 2.480 - 1.057 \times \text{Log10(mm/blow)}$						Weather:	Dry Sunny

No of Blows	Depth Reading mm	Penetration/ Blow mm	CBR %	Estimated CBR %
0	42	0		
1	156	114.0	2.0	
2	212	56.0	4.3	
3	267	55.0	4.4	
4	311	44.0	5.5	
5	354	43.0	5.7	
6	406	52.0	4.6	
7	445	39.0	6.3	
8	489	44.0	5.5	
9	526	37.0	6.6	
10	571	45.0	5.4	
11	606	35.0	7.0	
12	658	52.0	4.6	
13	692	34.0	7.3	
14	724	32.0	7.7	
15	751	27.0	9.3	
16	773	22.0	11.5	
17	791	18.0	14.2	
18	801	10.0	26.5	
19	813	12.0	21.8	
20	827	14.0	18.6	
21	842	15.0	17.3	
22	859	17.0	15.1	
23	876	17.0	15.1	
24	881	5.0	55.1	
25	893	12.0	21.8	
26	907	14.0	18.6	
27	931	24.0	10.5	

Notes:

Tested by L Hillman
Date: 10.04.25

Checked by: K Szybut
Date: 02.05.25

TRL Dynamic Cone Penetrometer Test Results



Client:	VH Land Partnerships Ltd	Site Location:	High Moor Farm, Clitheroe	Test No:	CBR4	Location:	375165, 441727
Project No:	1134.02	Date:	10.4.2025	Start Depth:	Surface	Test Strata:	Topsoil
$\text{Log10(CBR)} = 2.480 - 1.057 \times \text{Log10(mm/blow)}$						Weather:	Dry Sunny

No of Blows	Depth Reading mm	Penetration/ Blow mm	CBR %	Estimated CBR %
0	56	0		
1	143	87.0	2.7	
2	208	65.0	3.7	
3	246	38.0	6.5	
4	282	36.0	6.8	
5	323	41.0	6.0	
6	371	48.0	5.0	
7	428	57.0	4.2	
8	481	53.0	4.5	
9	542	61.0	3.9	
10	594	52.0	4.6	
11	656	62.0	3.8	
12	702	46.0	5.3	
13	751	49.0	4.9	
14	793	42.0	5.8	
15	871	78.0	3.0	
16	913	42.0	5.8	
17	951	38.0	6.5	

Notes:

Tested by: L Hillman
Date: 10.04.25

Checked by: K Szybut
Date: 02.05.25

TRL Dynamic Cone Penetrometer Test Results



Client:	VH Land Partnerships Ltd	Site Location:	High Moor Farm, Clitheroe	Test No:	CBR5	Location:	375097, 441718
Project No:	1134.02	Date:	10.4.2025	Start Depth:	Surface	Test Strata:	Topsoil
$\text{Log10(CBR)} = 2.480 - 1.057 \times \text{Log10(mm/blow)}$						Weather:	Dry Sunny

No of Blows	Depth Reading mm	Penetration/ Blow mm	CBR %	Estimated CBR %
0	60	0		
1	183	123.0	1.9	
2	231	48.0	5.0	
3	272	41.0	6.0	
4	302	30.0	8.3	
5	334	32.0	7.7	
6	367	33.0	7.5	
7	404	37.0	6.6	
8	432	28.0	8.9	
9	491	59.0	4.1	
10	527	36.0	6.8	
11	579	52.0	4.6	
12	624	45.0	5.4	
13	657	33.0	7.5	
14	678	21.0	12.1	
15	702	24.0	10.5	
16	724	22.0	11.5	
17	746	22.0	11.5	
18	771	25.0	10.1	
19	789	18.0	14.2	
20	809	20.0	12.7	
21	824	15.0	17.3	
22	839	15.0	17.3	
23	858	19.0	13.4	
24	867	9.0	29.6	
25	882	15.0	17.3	
26	901	19.0	13.4	
27	917	16.0	16.1	
28	938	21.0	12.1	

Notes:

Tested by L Hillman
Date: 10.04.25

Checked by: K Szybut
Date: 02.05.25

TRL Dynamic Cone Penetrometer Test Results



Client:	VH Land Partnerships Ltd	Site Location:	High Moor Farm, Clitheroe	Test No:	CBR6	Location:	375083, 441644
Project No:	1134.02	Date:	10.4.2025	Start Depth:	Surface	Test Strata:	Topsoil
$\text{Log10(CBR)} = 2.480 - 1.057 \times \text{Log10(mm/blow)}$						Weather:	Dry Sunny

No of Blows	Depth Reading mm	Penetration/ Blow mm	CBR %	Estimated CBR %
0	63	0		
1	202	139.0	1.6	
2	254	52.0	4.6	
3	307	53.0	4.5	
4	341	34.0	7.3	
5	376	35.0	7.0	
6	404	28.0	8.9	
7	428	24.0	10.5	
8	457	29.0	8.6	
9	489	32.0	7.7	
10	517	28.0	8.9	
11	548	31.0	8.0	
12	584	36.0	6.8	
13	626	42.0	5.8	
14	664	38.0	6.5	
15	703	39.0	6.3	
16	742	39.0	6.3	
17	778	36.0	6.8	
18	821	43.0	5.7	
19	854	33.0	7.5	
20	893	39.0	6.3	
21	917	24.0	10.5	
22	946	29.0	8.6	

Notes:

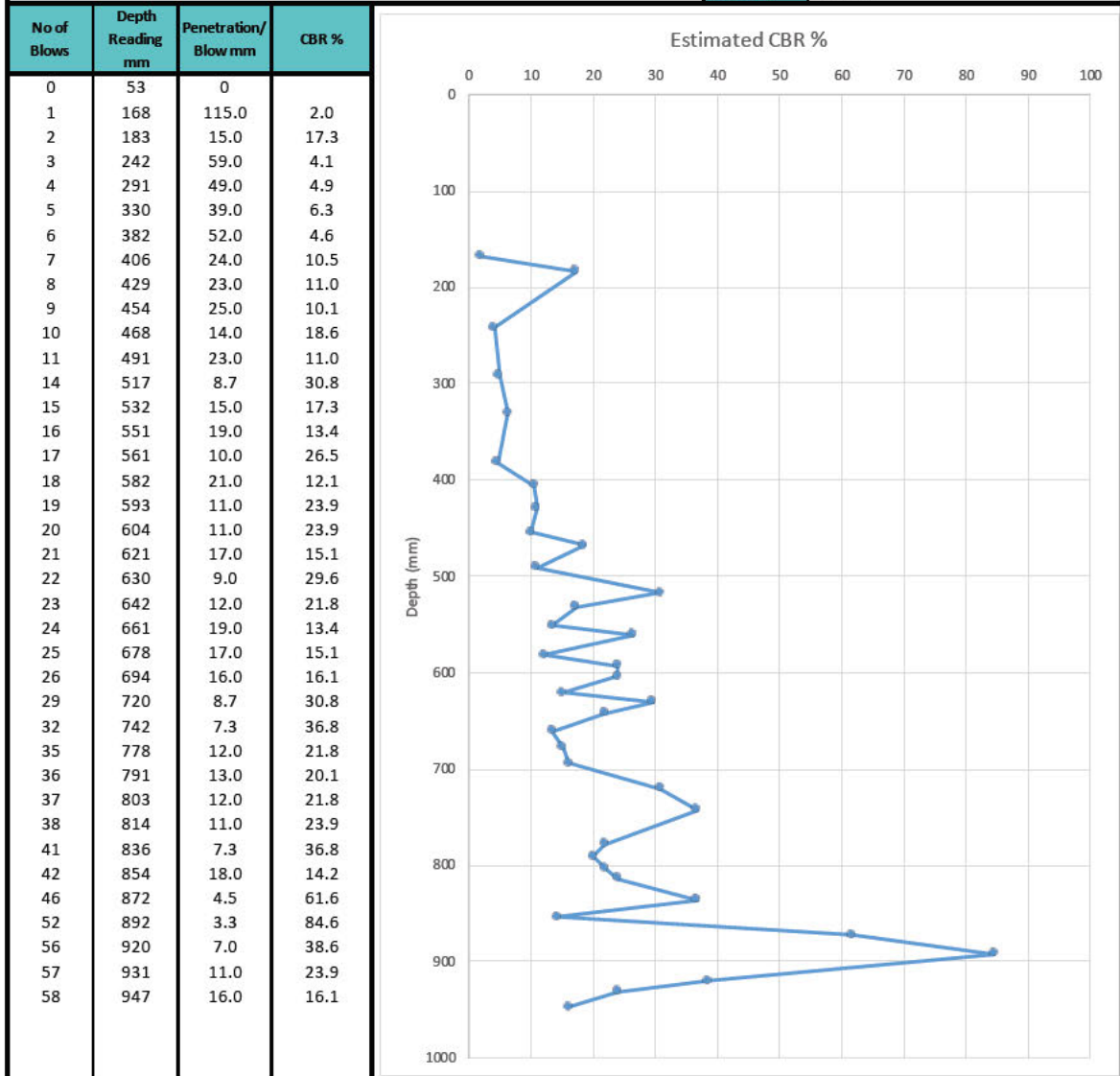
Tested by: L Hillman
Date: 10.04.25

Checked by: K Szybut
Date: 02.05.25

TRL Dynamic Cone Penetrometer Test Results



Client:	VH Land Partnerships Ltd	Site Location:	High Moor Farm, Clitheroe	Test No:	CBR7	Location:	375137, 441582
Project No:	1134.02	Date:	10.4.2025	Start Depth:	Surface	Test Strata:	Topsoil
$\text{Log10(CBR)} = 2.480 - 1.057 \times \text{Log10(mm/blow)}$						Weather:	Dry Sunny



Notes:

Tested by: L Hillman
Date: 10.04.25

Checked by: K Szybut
Date: 02.05.25

TRL Dynamic Cone Penetrometer Test Results



Client:	VH Land Partnerships Ltd	Site Location:	High Moor Farm, Clitheroe	Test No:	CBR8	Location:	375136, 441660
Project No:	1134.02	Date:	10.4.2025	Start Depth:	Surface	Test Strata:	Topsoil
$\text{Log10(CBR)} = 2.480 - 1.057 \times \text{Log10(mm/blow)}$						Weather:	Dry Sunny

No of Blows	Depth Reading mm	Penetration/ Blow mm	CBR %	Estimated CBR %
0	64	0		
1	178	114.0	2.0	
2	234	56.0	4.3	
3	271	37.0	6.6	
4	312	41.0	6.0	
5	364	52.0	4.6	
6	417	53.0	4.5	
7	450	33.0	7.5	
8	487	37.0	6.6	
9	521	34.0	7.3	
10	564	43.0	5.7	
11	602	38.0	6.5	
12	641	39.0	6.3	
13	673	32.0	7.7	
14	713	40.0	6.1	
15	751	38.0	6.5	
16	793	42.0	5.8	
17	828	35.0	7.0	
18	851	23.0	11.0	
19	864	13.0	20.1	
20	873	9.0	29.6	
21	884	11.0	23.9	
22	901	17.0	15.1	
23	914	13.0	20.1	
24	932	18.0	14.2	

Notes:

Tested by L Hillman
Date: 10.04.25

Checked by: K Szybut
Date: 02.05.25

APPENDIX C

Soakaway Test Results

Soakaway Test Report

Client: VH Land Partnerships Limited
Job Name: High Moor Farm, Clitheroe
Job No.: 1134.02

Test Date: 10.04.25

Trial Pit No. SA1
Test No. 1
Coordinates: 375207, 441696

Soil Description: 0-0.25m TOPSOIL,
0.25- 1.0m Firm very sandy CLAY,
1.0 to 1.4m Soft slightly sandy gravelly CLAY.
Weather Conditions: Dry & sunny

Time	Elapsed Time (min)	Depth to water from ground level (m)	(mm)
09:12	0	0.410	410
09:13	1	0.430	430
09:14	2	0.435	435
09:15	3	0.440	440
09:16	4	0.450	450
09:17	5	0.450	460
09:22	10	0.460	470
09:27	15	0.470	475
09:32	20	0.475	475
10:03	51	0.490	490
10:52	100	0.560	560
12:15	183	0.650	650
13:44	272	0.720	720
15:06	354	0.76	760

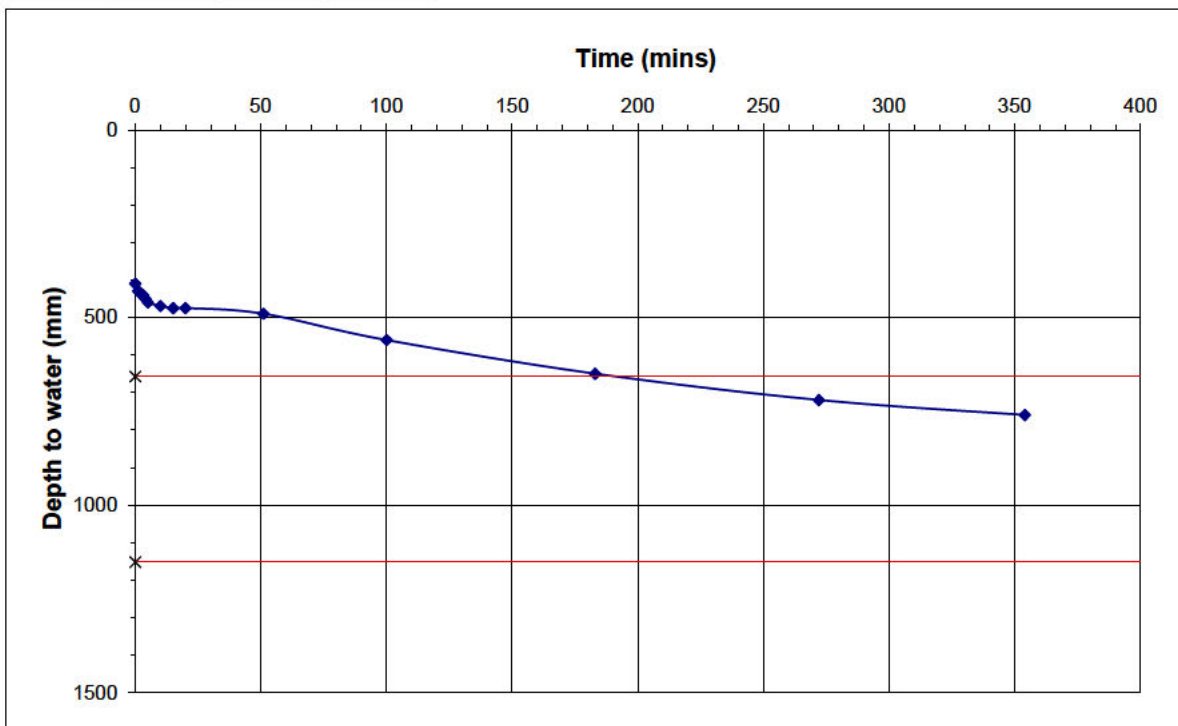
Soakaway Dimensions	(m)	(mm)
Length	= 1.60	1600
Width	= 0.40	400
Depth	= 1.40	1400

Effective depth (empty)	m	mm
25%	= 1.15	1152.5
50%	= 0.91	905.0
75%	= 0.66	657.5

Depth at start of test (mm)	=	410
Depth at end of test (mm)	=	760

Base area of pit	=	0.640
a_{p50} - 50% internal surface area inc. base	=	2.620
V_{p75-25} - Volume 75 - 25%	=	0.317

t_{p75} (min) = (Read from graph)	190
t_{p25} (min) = (Read from graph)	N/A
t_p values extrapolated from graph data =	#VALUE!
t_p value (seconds) =	#VALUE!



Soil infiltration rate, f , (m/s) = (normal test)
Soil infiltration rate, f , (m/s) = #VALUE! (pit filled with stone)

Notes: Insufficient infiltration

Logged By

LH

Checked by

KS

REMADA
GEO CONSULTANTS

Soil Description: 0-0.25m TOPSOIL,
0.25- 0.7m Firm very sandy CLAY,
0.7 to 1.5m Soft slightly sandy gravelly CLAY.
Weather Conditions: Dry & sunny

$t_{p\ 75}$ (min) = (Read from graph)	N/A
$t_{p\ 25}$ (min) = (Read from graph)	N/A
t_p values extrapolated from graph data =	#VALUE!
t_p value (seconds) =	#VALUE!

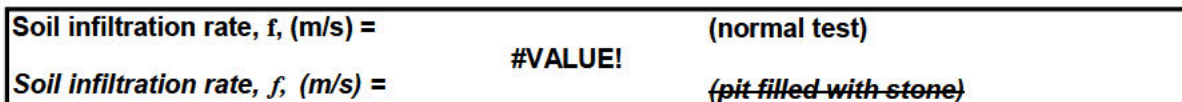


KS

REMADA
GEO CONSULTANTS

Soil Description: 0-0.25m TOPSOIL,
0.25- 0.8m Firm to stiff slightly sandy gravelly CLAY,
0.8 to 1.35m Soft slightly sandy gravelly CLAY.
Weather Conditions: Dry & sunny

$t_{p\ 75}$ (min) = (Read from graph)	N/A
$t_{p\ 25}$ (min) = (Read from graph)	N/A
t_p values extrapolated from graph data =	#VALUE!
t_p value (seconds) =	#VALUE!



KS

APPENDIX D

Gas Analyser Calibration Certificate



SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Socotec uk
Progress close
Binley
Coventry
CV3 2TF

SPT Hammer Ref: 110.24
Test Date: 30/01/2025
Report Date: 30/01/2025
File Name: 110.24.spt
Test Operator: DP

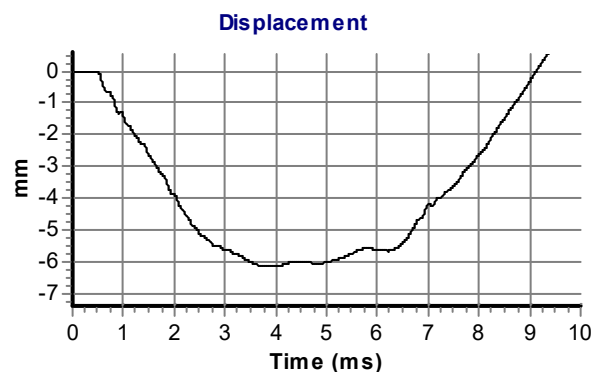
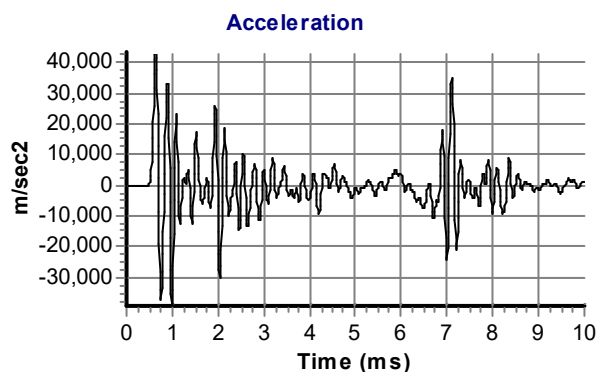
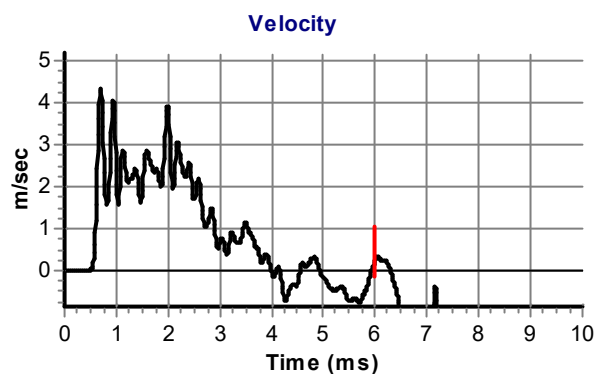
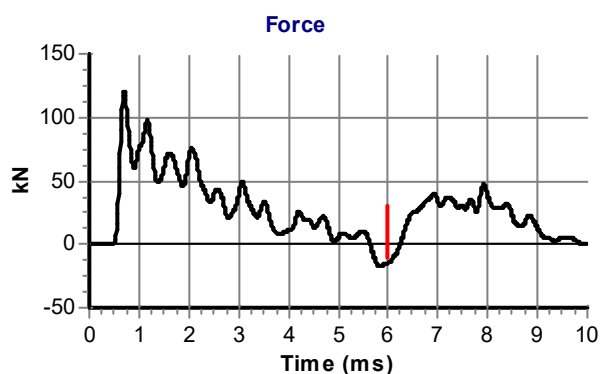
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.0
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 72570
Accelerometer No.2: 72571

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 12.6

Comments / Location



Calculations

Area of Rod A (mm²): 905
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 417

Energy Ratio E_r (%)

88

Signed: D Perrett
Title: Drilling Supervisor

TEST DATE AND CONDITIONS			
Date		26/11/2024	
Atmospheric Pressure		996	mB
Ambient Temperature		21.5	°C
EnviroNics Serial No.		5089	

**GFM436 Final Inspection & Calibration
Check Certificate**

GAS DATA LTD

Unit D

Earlplace Business Park

Fletchamstead Highway

Coventry

CV4 9XL

Tel 02476303311

Fax 02476307711



GAS DATA
LISTEN • ANALYSE • INFORM

Customer	Dunelm Geotechnical & Environmental Ltd
Certificate Number	125731
Order Number	340258

Serial Number	13121
Software Version	G436-00.0029/0010

Recalibration DUE Date
26/11/25

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	500	Accept > 200 cc/min	Pump Flow @ -200mB	300	Accept > 200 cc/min
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
Sensor	CH ₄		CO ₂		O ₂	
	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %
	Readings %		Readings %		Readings %	
	60.0	60	40.1	40	20.9	20.9
	Accept ±3.0		Accept ±3.0		Accept ±0.5	
	5.1	5	5.0	5	6.0	6
	Accept ±0.3		Accept ±0.3		Accept ±0.3	
Zero Reading 100% N2	0.0	0	0.0	0	0.0	0
	Accept ±0.0		Accept ±0.0		Accept ±0.1	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings (ppm)			
Gas Type	Range (ppm)		Zero Reading		Instrument Gas Reading	
H2S	5000	1500	0	Accept ±0.0	1500	Accept ±5.0%
CO	2000	1000	0	Accept ±0.0	1001	Accept ±5.0%
Hexane	2.0%	2.0%	0	Accept ±0.0	1.99	Accept ±10.0%

Cross Gas Effects									
Applied Gas (ppm)		Instrument Readings (ppm)							
Gas Type	Concentration	Toxic 1:	H2S	Toxic 2:	CO	Toxic 3:	HEX		
H2S	1500	1500		0		0			
CO	1000	130		1001		0			
Hexane	2.0%	0		0		1.99			

Pressure Checks			
Atmospheric Pressure [AP] (mB)			
Current Atmospheric Pressure (mB)		Instrument Atmospheric Pressure Reading (mB)	
AP Open Ports		995	Accept ± 2.0
AP Port (Internal)	+800 mB	800	Accept ± 5.0
	+1200mb	1200	Accept ± 5.0

Flow Checks					
Borehole Flow			Differential Pressure		
Applied Reading (l/h)	Instrument Reading (l/h)		Applied Pressure (Pa)	Instrument Reading (Pa)	
-30	-30.0	Accept ± 3.0	-495	-497	Accept ± 50
-3	-3.0	Accept ± 1.0	-19	-19	Accept ± 6.0
0	0.0	Accept ± 0.0	0	0	Accept ± 0.5
3	3.0	Accept ± 0.5	16	15	Accept ± 3.0
30	29.9	Accept ± 3.0	388	385	Accept ± 50
60	60.0	Accept ± 6.0	1189	1185	Accept ± 130
90	91.0	Accept ± 9.0	2354	2424	Accept ± 250

Temperature Checks		
Calibration Temperature	Instrument Temperature Reading $^{\circ}\text{C}$	
Applied Temperature $^{\circ}\text{C}$		
-10	-10.0	Accept ± 2.0
0	0.0	Accept ± 1.0
30	30.0	Accept ± 1.0
60	60.0	Accept ± 1.0
100	100.0	Accept ± 1.0

Technician:
<i>Jack Rutland</i>

Date Tested:
<i>26/11/2024</i>

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated.

The results displayed on the instrument at each stage are recorded above.

TEST DATE AND CONDITIONS			
Date	26.11.24		
Atmospheric Pressure	996	mB	
Ambient Temperature	21.5	°C	
Envionics Serial No.	5089		

GAS DATA LTD Unit D Earlplace Business Park Fletchamstead Highway Coventry CV4 9XL UK +44 (0) 24 7630 3311	 GAS DATA LISTEN · ANALYSE · INFORM
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GFM436-1 OUTWARD INSPECTION & QUALITY CHECK SHEET

INSTRUMENT DETAILS			
SO Number	Instrument Type	Instrument Serial Number + SW Version	Job Number(s)
340252	GFM436	13121 G436-29110	125731

Calibration Technician

Date 26.11.24

Inspection Technician

Date 27.11.24

INSTRUMENT CHECKS		Pass (P), Fail (F) or not applicable (NA)	INSTRUMENT PACKING LIST		Tick if included
Function Tests	Dust Caps Fitted	P	Instrument		✓
	Keyboard Test (All Keys)	P	Leather Case		✓
	Backlight	P	Instrument Strap		✓
	Clock Set / Running	P	AC Battery Charger (UK)		✓
	Comms Test	P	AC Battery Charger (EURO)		X
	Pump Flow Test (In & Out)	P	AC Battery Charger (US)		X
	Overall Leak Test (30mB)	n/a	AC Battery Charger (AUS)		X
	Battery Charge Test	P	Gas Sample Pipe - (new issue)		✓
	Service Date set to?	26.11.25	Flow Sample Pipe - (new issue)		✓
	Data Logging Enabled?	P	Hard Carry Case		✓
Channel Tests	Verify CH4/LEL/Hexane/PID	P	Spares Pot		X
	Verify CO2	P	Allen Key		X
	Verify O2	P	Temperature Probe		X
	Verify H2S	P	Vane Anemometer		X
	Verify CO	P	USB Cable		X
	Verify LEL	P	USB Memory stick		X
	Verify 1 st Option Gas	N/A	SM V5 Software	Ver 6.05	X
	Verify Atmospheric pressure	P	Internal Filter Pack	Qty	X
	Verify differential pressure	P	External Filter Pack	Qty	X
	Verify flow	P	Field Guide		X
	Verify temperature probe input	P	Extra Items: Sample Tubes		
	Verify vane anemometer input	P			
DataBase Checks	Jobcard(s) completed and signed	P	Comments:		
	Jobcard(s) booked off database	P			
	Calibration certificate completed	P			
	Complete & print QI record	n/a			
Label Checks	No. of Calibration label fitted	GDC 13629			
	MCERTS label displayed	N/A			
	Warranty label fitted				
H2S Range	H2S Range from Sales Order	5000 ppm			
	H2S Range from Cal Cert	5000 ppm			
	Over-range value correct?	P			
QA Cylinders Used	No. of High Range CH4/CO2	60194			
	No. of Low Range CH4/CO2/O2	56840			
	No. of H2S	6037292			
	No. of CO	56836			
	No. of Optional Cylinder	N/A			

APPENDIX E

Laboratory Chemical Analysis

Remada Ltd
Forward House
17 High Street
Henley-in-Arden
Warwickshire
B955AA

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

t: 01923 225404
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e: reception@i2analytical.com

e: [REDACTED]
info@remada.co.uk

Analytical Report Number : 25-017782

Project / Site name:	High Moor Farm Clitheroe	Samples received on:	09/04/2025
Your job number:	1134 02	Samples instructed on/ Analysis started on:	09/04/2025
Your order number:	1134 02	Analysis completed by:	16/04/2025
Report Issue Number:	1	Report issued on:	16/04/2025
Samples Analysed:	4 soil samples		

Signe

[REDACTED]
Senior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting
air - once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

Analytical Report Number: 25-017782
Project / Site name: High Moor Farm Clitheroe
Your Order No: 1134 02

Lab Sample Number				507208	507209	507210	507211
Sample Reference				WS1	WS3	WS5	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.20	0.10	0.10	0.50
Date Sampled				02/04/2025	02/04/2025	02/04/2025	02/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	47.4	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	18	34	32	20
Total mass of sample received	kg	0.1	NONE	1.1	1.1	1.1	2

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KWB	KWB	MUA	KWB
Analysis completed	N/A	N/A	N/A	15/04/2025	15/04/2025	16/04/2025	15/04/2025

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.6	6.6	6.5	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.027	0.044	0.036	0.0086

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.1	0.06	0.08	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.22	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.07	0.11	0.45	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.18	0.08	0.29	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	2.2	0.86	3.4	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.59	0.16	0.73	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	4.6	1.7	5.3	< 0.05
Pyrene	mg/kg	0.05	MCERTS	4	1.4	4.5	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2	0.74	2.1	< 0.05
Chrysene	mg/kg	0.05	MCERTS	2.1	0.8	2.3	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	2.5	0.89	2.4	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.1	0.43	1	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.3	0.83	2.2	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.1	0.38	1	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.29	0.11	0.27	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.2	0.4	1.1	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	24.5	8.91	27.2	< 0.80
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Analytical Report Number: 25-017782
Project / Site name: High Moor Farm Clitheroe
Your Order No: 1134 02

Lab Sample Number	507208	507209	507210	507211
Sample Reference	WS1	WS3	WS5	WS6
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A
Depth (m)	0.20	0.10	0.10	0.50
Date Sampled	02/04/2025	02/04/2025	02/04/2025	02/04/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.4	14	15	13
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.99	1.2	1.1	1.5
Boron (water soluble)	mg/kg	0.2	MCERTS	2	2	0.6	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	1.2	0.7	0.6
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	13	35	26	34
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	36	27	35
Copper (aqua regia extractable)	mg/kg	1	MCERTS	24	21	27	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	42	72	64	26
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	21	23	46
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.3	1.3	1.2
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	23	54	42	43
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	140	130	85

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	2	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	11	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	13	< 10	< 10	< 10

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	11	< 10	11	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	21	< 10	14	< 10
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	32	< 10	25	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number : 25-017782

Project / Site name: High Moor Farm Clitheroe

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
507208	WS1	None Supplied	0.2	Brown loam with stones
507209	WS3	None Supplied	0.1	Brown loam and clay with gravel
507210	WS5	None Supplied	0.1	Brown loam and clay with gravel
507211	WS6	None Supplied	0.5	Brown clay

Analytical Report Number : 25-017782

Project / Site name: High Moor Farm Clitheroe

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
TPH Chromatogram in soil	TPH Chromatogram in soil	In-house method	L064B	D	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL/L130B	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate	In-house method	L009B	D	MCERTS

Analytical Report Number : 25-017782

Project / Site name: High Moor Farm Clitheroe

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

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

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

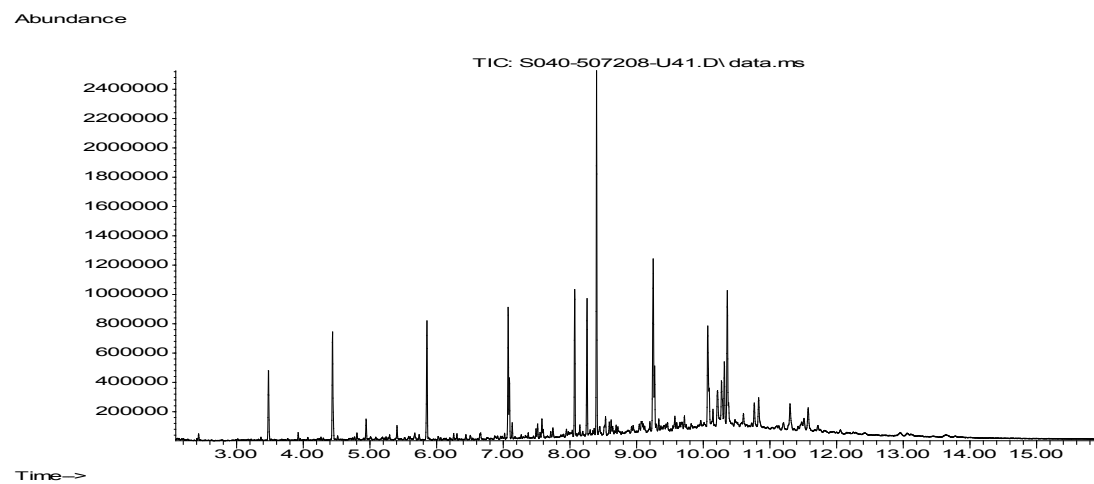
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

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

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

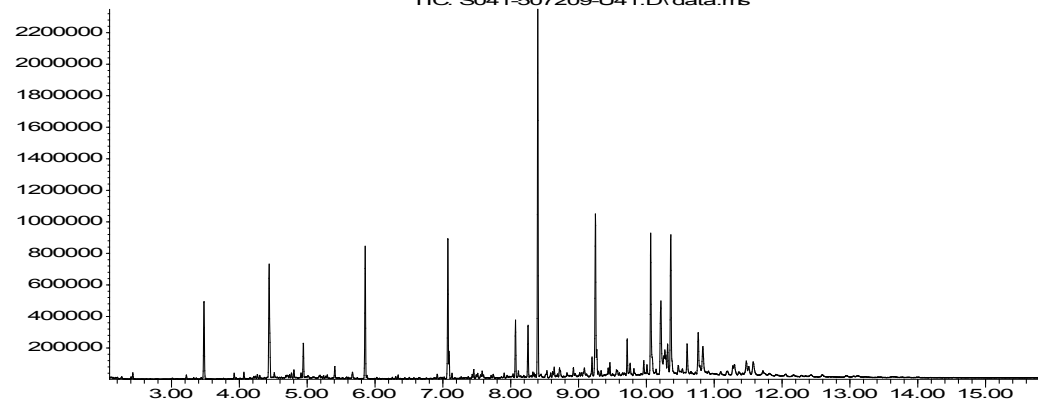
Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

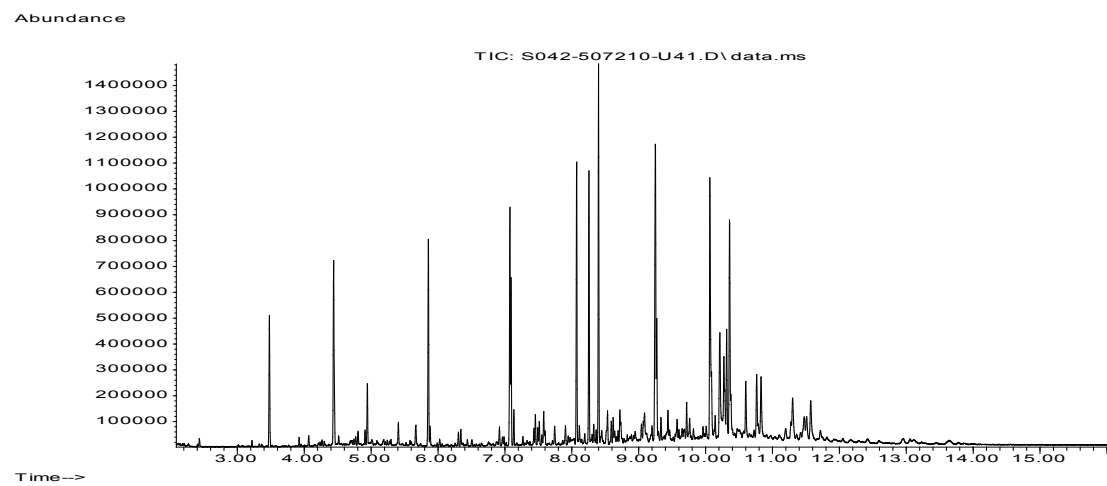


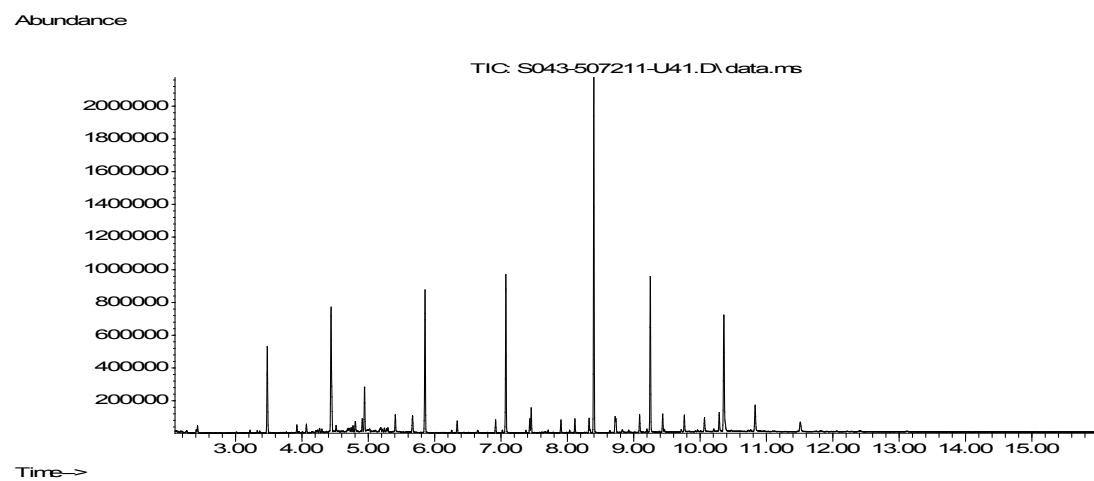
Abundance

TIC: S041-507209-U41.D\data.ms



Time→





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e: reception@i2analytical.com

Preliminary Report Number : 25-018494

Project / Site name:	High Moor Farm, Clitheroe	Samples received on:	11/04/2025
Your job number:	1134 02	Samples instructed on/ Analysis started on:	11/04/2025
Your order number:	1134 02	Analysis completed by:	not complete
Report Issue Number:	0	Report issued on:	24/04/2025
Samples Analysed:	8 soil samples		

Signed:

Customer Service Advisor
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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Preliminary reports provided at the request of the client should be considered as incomplete and have not been through the complete quality control procedure.

Results contained in preliminary reports may be subject to change and therefore should not be used as a basis for decision making, except at the risk of the

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.

Application of uncertainty of measurement would provide a range within which the true result lies.

An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 25-018494
Project / Site name: High Moor Farm, Clitheroe
Your Order No: 1134 02

Lab Sample Number				510619	510620	510621	510622	510623
Sample Reference				TP1	TP2	TP7	TP10	TP2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.10	0.40	0.20	0.40	1.20
Date Sampled				10/04/2025	10/04/2025	10/04/2025	10/04/2025	10/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	18.8
Moisture Content	%	0.01	NONE	27	20	38	21	13
Total mass of sample received	kg	0.1	NONE	2	2	1.1	1.1	1

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	SPU	SPU	PDO	SPU	-
Analysis completed	N/A	N/A	N/A	23/04/2025	23/04/2025	23/04/2025	23/04/2025	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	6.3	7.7	6.5	7.2	8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	0.051
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	34
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	16.9
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	1.4
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	450
Total Sulphur	%	0.005	MCERTS	-	-	-	-	0.045
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	-	-	-	-	< 0.5
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	-	< 0.05
Organic Matter	%	0.1	MCERTS	-	-	19	-	-
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.046	0.0092	-	0.018	-
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	-	0.11	-	-
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	-	-	-	-	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	-	-	-	-	< 5.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	1.1	< 1.0	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	0.19	< 0.05	0.29	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	0.44	< 0.05	0.73	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	0.42	< 0.05	0.68	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.18	< 0.05	0.35	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	0.28	< 0.05	0.42	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.33	< 0.05	0.55	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.12	< 0.05	0.26	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.23	< 0.05	0.49	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.12	< 0.05	0.22	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.15	< 0.05	0.25	< 0.05	-

Analytical Report Number: 25-018494

Project / Site name: High Moor Farm, Clitheroe

Your Order No: 1134 02

Lab Sample Number				510619	510620	510621	510622	510623
Sample Reference				TP1	TP2	TP7	TP10	TP2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.10	0.40	0.20	0.40	1.20
Date Sampled				10/04/2025	10/04/2025	10/04/2025	10/04/2025	10/04/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2.44	< 0.80	4.23	< 0.80	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	15	15	12	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.84	1.3	1.1	1.4	-
Boron (water soluble)	mg/kg	0.2	MCERTS	1.2	0.6	2.7	0.9	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	1.2	1.2	0.8	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	-
Chromium (III)	mg/kg	1	NONE	33	25	35	28	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	34	26	37	30	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	25	16	35	21	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	64	30	78	37	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	44	21	32	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.7	< 1.0	1.3	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	50	33	56	38	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	130	150	170	170	-

Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	3.7
Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	7.3

Petroleum Hydrocarbons

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

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

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-

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

Analytical Report Number: 25-018494
Project / Site name: High Moor Farm, Clitheroe
Your Order No: 1134 02

Lab Sample Number	510624	510625	510626
Sample Reference	TP3	TP6	TP10
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	1.80	1.60	1.40
Date Sampled	10/04/2025	10/04/2025	10/04/2025
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.1	11	15
Total mass of sample received	kg	0.1	NONE	1	1	1

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-
Analysis completed	N/A	N/A	N/A	-	-	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.3	8.5	8.3
Total Cyanide	mg/kg	1	MCERTS	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.095	0.047	0.043
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	230	23	25
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	114	11.3	12.7
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	6.6	1.4	1
Total Sulphur	mg/kg	50	MCERTS	4800	430	320
Total Sulphur	%	0.005	MCERTS	0.485	0.043	0.032
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	< 0.5	< 0.5	< 0.5
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Organic Matter	%	0.1	MCERTS	-	-	-
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	-	-	-
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	-	-
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0	< 5.0	< 5.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-

Analytical Report Number: 25-018494
Project / Site name: High Moor Farm, Clitheroe
Your Order No: 1134 02

Lab Sample Number				510624	510625	510626
Sample Reference				TP3	TP6	TP10
Sample Number				None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A
Depth (m)				1.80	1.60	1.40
Date Sampled				10/04/2025	10/04/2025	10/04/2025
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			

Total PAH

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

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	-
Chromium (III)	mg/kg	1	NONE	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-

Magnesium (leachate equivalent)	mg/l	2.5	NONE	5.8	< 2.5	< 2.5
Magnesium (water soluble)	mg/kg	5	NONE	12	< 5.0	< 5.0

Petroleum Hydrocarbons

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

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

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-
p & m-Xylene	µg/kg	8	MCERTS	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-

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

Analytical Report Number : 25-018494

Project / Site name: High Moor Farm, Clitheroe

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
510619	TP1	None Supplied	0.1	Brown loam and clay with gravel and vegetation
510620	TP2	None Supplied	0.4	Brown clay and sand with gravel and vegetation
510621	TP7	None Supplied	0.2	Brown loam and clay with gravel and vegetation
510622	TP10	None Supplied	0.4	Brown loam and clay with gravel and vegetation
510623	TP2	None Supplied	1.2	Brown clay and sand with gravel and stones
510624	TP3	None Supplied	1.8	Brown clay and sand with gravel
510625	TP6	None Supplied	1.6	Brown clay and sand with gravel
510626	TP10	None Supplied	1.4	Brown clay and loam with vegetation and gravel

Analytical Report Number : 25-018494

Project / Site name: High Moor Farm, Clitheroe

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate	In-house method	L023B	D	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L023B	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES	In-house method based on TRL 447	L038B	D	NONE
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
TPH Chromatogram in soil	TPH Chromatogram in soil	In-house method	L064B	D	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Water Soluble Nitrate (leachate equivalent)	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE

Analytical Report Number : 25-018494

Project / Site name: High Moor Farm, Clitheroe

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrate, water soluble, in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL/L130B	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser	In-house method	L082B	D	MCERTS
Ammonium as NH ₄ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate	In-house method	L009B	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

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

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

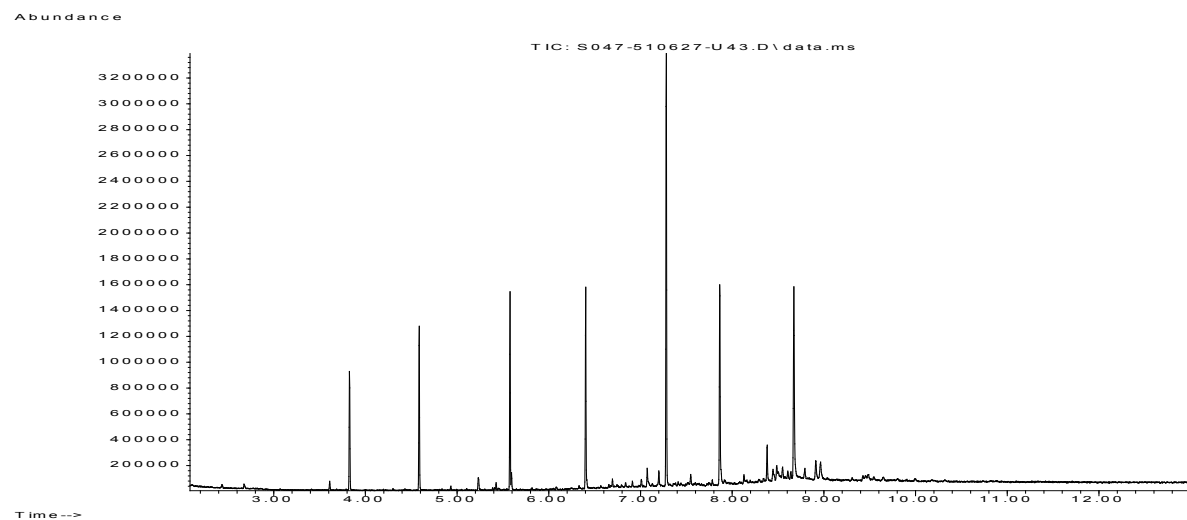
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

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

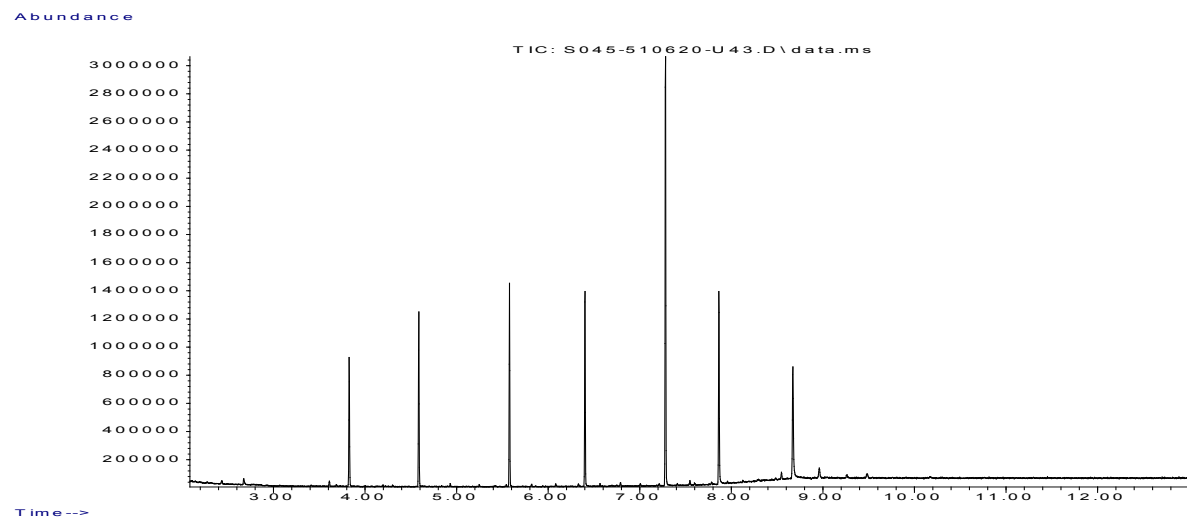
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

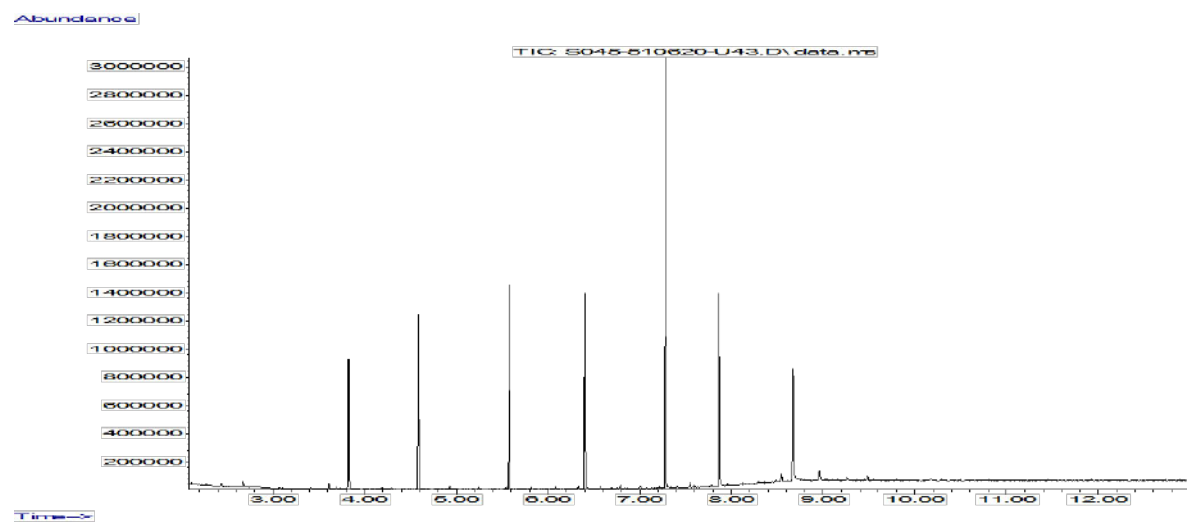
Quality control parameter failure associated with individual result applies to calculated sum of individuals.

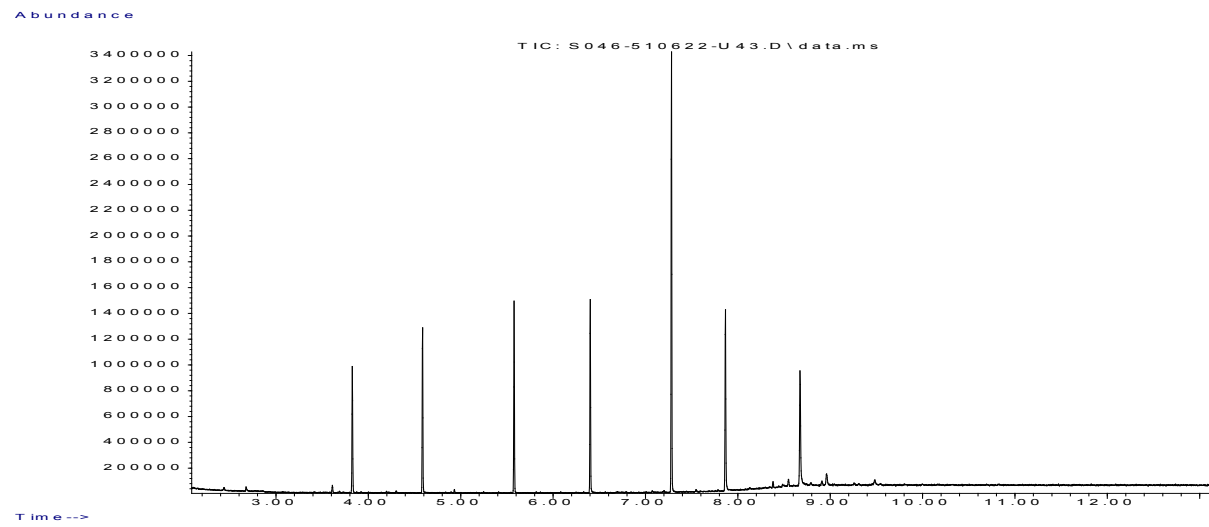
The result for sum should be interpreted with caution



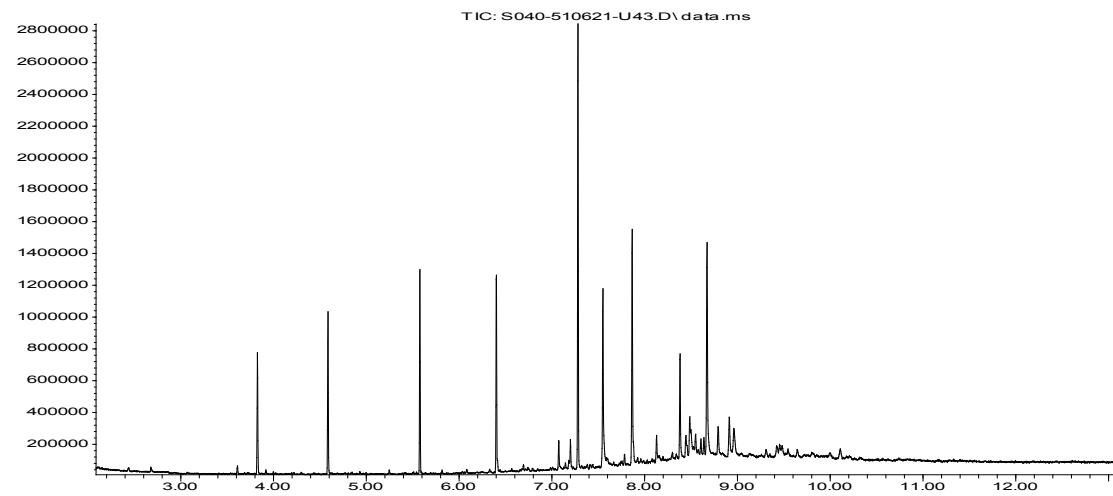
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Abundance



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e: [REDACTED]
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Analytical Report Number : 25-017783

Project / Site name: High Moor Farm Clitheroe

Samples received on: 09/04/2025

Your job number: 1134 02

**Samples instructed on/
Analysis started on:** 09/04/2025

Your order number: 1134 02

Analysis completed by: 15/04/2025

Report Issue Number: 1

Report issued on: 15/04/2025

Samples Analysed: 10:1 WAC sample

Signed:

[REDACTED]
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

Analytical Report Number: 25-017783
Project / Site name: High Moor Farm Clitheroe
Your Order No: 1134 02

Lab Sample Number				507227
Sample Reference				WS6
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				0.50
Date Sampled				02/04/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	20
Total mass of sample received	kg	0.1	NONE	2

General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	7.4
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.9
Loss on Ignition @ 450°C	%	0.2	MCERTS	4.4
Acid Neutralisation Capacity	⁺ / ₋ mmol/kg	-9999	NONE	1.7

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05
Coronene	mg/kg	0.05	NONE	< 0.05

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	< 0.85
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Petroleum Hydrocarbons

Mineral Oil (EC10 - EC40) EH_CU_1D_AL	mg/kg	10	NONE	< 10
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VOCs

Benzene	µg/kg	5	MCERTS	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0
Total BTEX	µg/kg	10	MCERTS	< 10

Analytical Report Number: 25-017783
 Project / Site name: High Moor Farm Clitheroe
 Your Order No: 1134 02

Lab Sample Number				507227
Sample Reference				WS6
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				0.50
Date Sampled				02/04/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001

Total PCBs	mg/kg	0.007	MCERTS	< 0.007
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



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Waste Acceptance Criteria Analytical Results							
Report No:	25-017783						
					Client: REMADALT		
Location	High Moor Farm Clitheroe						
Lab Reference (Sample Number)	507227				Landfill Waste Acceptance Criteria		
Sampling Date	02/04/2025				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS6						
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	0.9				3%	5%	6%
Loss on Ignition (%) **	4.4				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.4				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	1.7				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:1	Limit values for compliance leaching test		
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.00100			< 0.0100	0.5	2	25
Barium *	0.0198			0.198	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.0049			0.049	0.5	10	70
Copper *	< 0.00070			< 0.0070	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	< 0.000400			< 0.00400	0.5	10	30
Nickel *	0.0046			0.046	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0090			0.090	4	50	200
Chloride *	0.44			4.4	800	15000	25000
Fluoride*	0.29			2.9	10	150	500
Sulphate *	0.74			7.4	1000	20000	50000
TTDS*	9.8			98	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	5.04			50.4	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	80						
Moisture (%)	20						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.				*= UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation				** = MCERTS accredited			

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3. This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Where colour coding is used on this report, this is for guidance purposes only. This does not constitute a statement of conformity of pass or fail.

Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number : 25-017783

Project / Site name: High Moor Farm Clitheroe

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
507227	WS6	None Supplied	0.5	Brown clay

Analytical Report Number : 25-017783

Project / Site name: High Moor Farm Clitheroe

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH at 20°C in soil	Determination of pH in soil by addition of water followed by electrometric measurement	In-house method	L005B	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1 ratio with a buffer solution followed by Ion Selective Electrode	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Sample Preparation		In-house method	L043B	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe	In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046B	W	NONE
Loss on ignition of soil @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	In-house method	L047-PL	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025

Analytical Report Number : 25-017783

Project / Site name: High Moor Farm Clitheroe

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

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

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

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

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

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

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

The result for sum should be interpreted with caution

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Analytical Report Number : 25-018496

Project / Site name:	High Moor Farm, Clitheroe	Samples received on:	11/04/2025
Your job number:	1134 02	Samples instructed on/ Analysis started on:	11/04/2025
Your order number:	1134 02	Analysis completed by:	25/04/2025
Report Issue Number:	1	Report issued on:	25/04/2025
Samples Analysed:	2 10:1 WAC samples		

Signed:

Technical Reviewer
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

Analytical Report Number: 25-018496
Project / Site name: High Moor Farm, Clitheroe
Your Order No: 1134 02

Lab Sample Number				510627	510628
Sample Reference				TP1	TP2
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.10	0.40
Date Sampled				10/04/2025	10/04/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	27	20
Total mass of sample received	kg	0.1	NONE	2	2

General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	6.4	7.8
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	4.6	0.9
Loss on Ignition @ 450°C	%	0.2	MCERTS	11	3.5
Acid Neutralisation Capacity	mmol/kg +/-	-9999	NONE	-3.3	7

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.19	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.44	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.42	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.18	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.28	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.33	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.12	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.23	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.12	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.15	< 0.05
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	2.44	< 0.85
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Petroleum Hydrocarbons

Mineral Oil (EC10 - EC40) EH_CU_1D_AL	mg/kg	10	NONE	< 10	< 10
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VOCs

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0

Total BTEX	µg/kg	10	MCERTS	< 10	< 10
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Analytical Report Number: 25-018496
 Project / Site name: High Moor Farm, Clitheroe
 Your Order No: 1134 02

Lab Sample Number				510627	510628
Sample Reference				TP1	TP2
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.10	0.40
Date Sampled				10/04/2025	10/04/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001
Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007

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

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Waste Acceptance Criteria Analytical Results

Report No:	25-018496					
Location	High Moor Farm, Clitheroe					
Lab Reference (Sample Number)	510627					
Sampling Date	10/04/2025					
Sample ID	TP1					
Depth (m)	0.10					
Solid Waste Analysis						
TOC (%)**	4.6			3%	5%	6%
Loss on Ignition (%) **	11			--	--	10%
BTEX (µg/kg) **	< 10			6000	--	--
Sum of PCBs (mg/kg) **	< 0.007			1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL	< 10			500	--	--
Total PAH (WAC-17) (mg/kg)	2.44			100	--	--
pH (units)**	6.4			--	>6	--
Acid Neutralisation Capacity (mmol / kg)	-3.3			--	To be evaluated	To be evaluated
Eluate Analysis	10:1		10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l		mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.00377		0.0377	0.5	2	25
Barium *	0.00571		0.0571	20	100	300
Cadmium *	< 0.000100		< 0.00100	0.04	1	5
Chromium *	0.0017		0.017	0.5	10	70
Copper *	0.0082		0.082	2	50	100
Mercury *	< 0.000500		< 0.00500	0.01	0.2	2
Molybdenum *	< 0.000400		< 0.00400	0.5	10	30
Nickel *	0.0038		0.038	0.4	10	40
Lead *	0.0015		0.015	0.5	10	50
Antimony *	0.0020		0.020	0.06	0.7	5
Selenium *	< 0.0040		< 0.040	0.1	0.5	7
Zinc *	0.0083		0.083	4	50	200
Chloride *	0.98		9.8	800	15000	25000
Fluoride*	0.27		2.7	10	150	500
Sulphate *	1.9		19	1000	20000	50000
TDS*	18		180	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010		< 0.10	1	-	-
DOC	12.2		122	500	800	1000
Leach Test Information						
Stone Content (%)	< 0.1					
Sample Mass (kg)	2.0					
Dry Matter (%)	73					
Moisture (%)	27					
Results are expressed on a dry weight basis, after correction for moisture content where applicable.				* = UKAS accredited (liquid eluate analysis only)		
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation				** = MCERTS accredited		

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3. This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Where colour coding is used on this report, this is for guidance purposes only. This does not constitute a statement of conformity of pass or fail.
Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.



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Croxley Green Business Park
Watford, WD18 8YS

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email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results								
Report No:		25-018496						
						Client: REMADALT		
						Landfill Waste Acceptance Criteria Limits Inert Waste LandfillStable Non-reactive HAZARDOUS waste in non-hazardous LandfillHazardous Waste Landfill		
Location		High Moor Farm, Clitheroe						
Lab Reference (Sample Number)		510628						
Sampling Date		10/04/2025						
Sample ID		TP2						
Depth (m)		0.40						
Solid Waste Analysis								
TOC (%)**	0.9				3%	5%	6%	
Loss on Ignition (%) **	3.5				--	--	10%	
BTEX (µg/kg) **	< 10				6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007				1	--	--	
Mineral Oil (mg/kg) EH,TD,CU,AL	< 10				500	--	--	
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--	
pH (units)**	7.8				--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	7.0				--	To be evaluated	To be evaluated	
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:1	Limit values for compliance leaching test			
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *	0.00181			0.0181	0.5	2	25	
Barium *	0.0149			0.149	20	100	300	
Cadmium *	0.000151			0.00151	0.04	1	5	
Chromium *	0.0031			0.031	0.5	10	70	
Copper *	0.0017			0.017	2	50	100	
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2	
Molybdenum *	< 0.000400			< 0.00400	0.5	10	30	
Nickel *	0.0033			0.033	0.4	10	40	
Lead *	< 0.0010			< 0.010	0.5	10	50	
Antimony *	< 0.0017			< 0.017	0.06	0.7	5	
Selenium *	< 0.0040			< 0.040	0.1	0.5	7	
Zinc *	0.012			0.12	4	50	200	
Chloride *	0.64			6.4	800	15000	25000	
Fluoride*	0.50			5.0	10	150	500	
Sulphate *	1.6			16	1000	20000	50000	
TDS*	38			380	4000	60000	100000	
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-	
DOC	5.57			55.7	500	800	1000	
Leach Test Information								
Stone Content (%)	< 0.1							
Sample Mass (kg)	2.0							
Dry Matter (%)	80							
Moisture (%)	20							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					* = UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation					** – MCFETS accredited			

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3. This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Where colour coding is used on this report, this is for guidance purposes only. This does not constitute a statement of conformity of pass or fail.

Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number : 25-018496

Project / Site name: High Moor Farm, Clitheroe

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
510627	TP1	None Supplied	0.1	Brown loam and clay with gravel and vegetation
510628	TP2	None Supplied	0.4	Brown clay and sand with gravel and vegetation

Analytical Report Number : 25-018496

Project / Site name: High Moor Farm, Clitheroe

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH at 20°C in soil	Determination of pH in soil by addition of water followed by electrometric measurement	In-house method	L005B	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1 ratio with a buffer solution followed by Ion Selective Electrode	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Sample Preparation		In-house method	L043B	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe	In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046B	W	NONE
Loss on ignition of soil @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	In-house method	L047-PL	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025

Analytical Report Number : 25-018496

Project / Site name: High Moor Farm, Clitheroe

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

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

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

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

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

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

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

The result for sum should be interpreted with caution

APPENDIX F

Laboratory Geotechnical Tests



2788

Laboratory Report



Contract Number: 78340

Client Ref: 1373.02

Client PO: 1373.02

Date Received: 22-04-2025

Date Completed: 02-05-2025

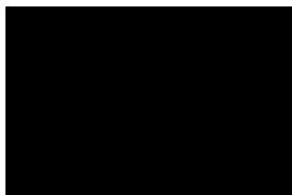
Report Date: 02-05-2025

Client: Remada Limited

This report has been checked and approved by:

Contract Title: High Moor Farm, Clitheroe

For the attention of:



Senior Office Administrator

Description	Qty
Determination of water content BS EN ISO 17892-1:2014 - @ Non Accredited Test	8
4 Point Liquid & Plastic Limit.. BS EN ISO 17892-12 - * UKAS	8
Particle Size Distribution BS EN ISO 17892-4 : 5.1 - * UKAS	2

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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 test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Senior Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)

Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)

Wayne Honey (HR & HSE Manager)

[illegible]

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve, Clause 5.2

Contract Number

78340

Borehole/Pit No.

TP4

Project Name

High Moor Farm, Clitheroe

Sample No.

Sample Description

Grey fine to coarse sandy fine to coarse gravelly SILT/ CLAY

Depth Top

2.10

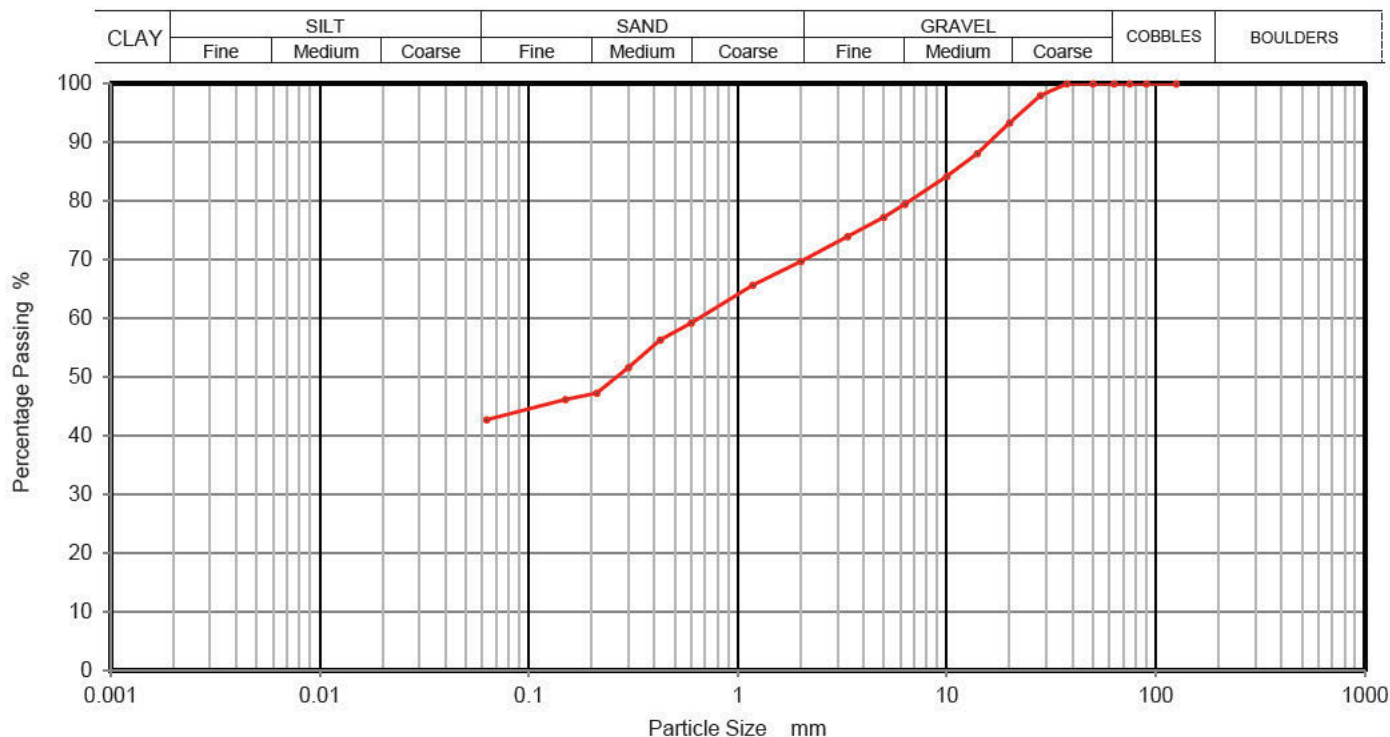
Depth Base

Date Tested

18/04/2025

Sample Type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	93		
14	88		
10	84		
6.3	79		
5	77		
3.35	74		
2	70		
1.18	66		
0.63	59		
0.425	56		
0.30	52		
0.20	47		
0.15	46		
0.063	43		

Sample Proportions	% dry mass
Cobbles	0
Gravel	30
Sand	27
Silt and Clay	43

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve, Clause 5.2

Contract Number

78340

Borehole/Pit No.

TP12

Project Name

High Moor Farm, Clitheroe

Sample No.

Sample Description

Grey fine to coarse sandy fine to coarse gravelly SILT/ CLAY

Depth Top

1.50

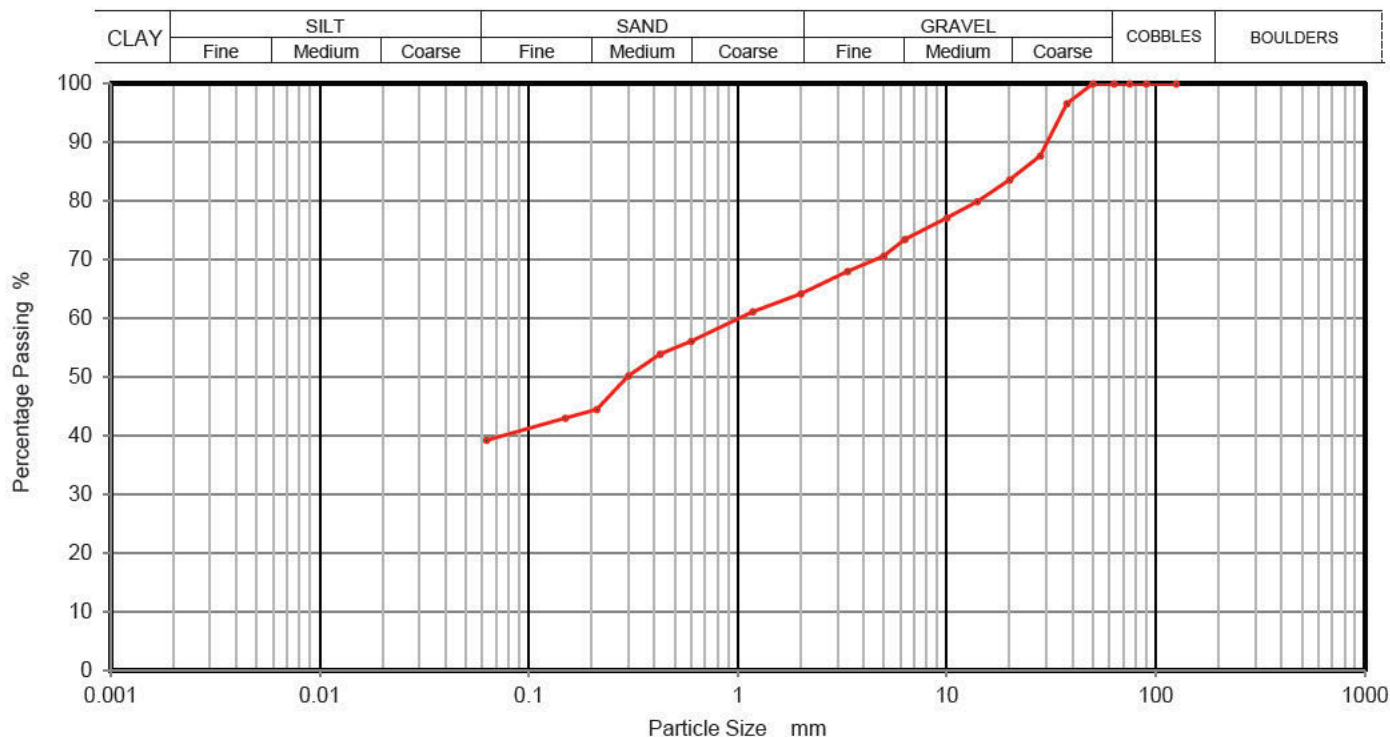
Depth Base

Date Tested

18/04/2025

Sample Type

B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	97		
28	88		
20	84		
14	80		
10	77		
6.3	73		
5	71		
3.35	68		
2	64		
1.18	61		
0.63	56		
0.425	54		
0.30	50		
0.20	44		
0.15	43		
0.063	39		

Sample Proportions	% dry mass
Cobbles	0
Gravel	36
Sand	25
Silt and Clay	39

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

