WML CONSULTING

Civil, Structural and Geotechnical Engineers

Geo-Environmental Investigation & Assessment

For a site at

Alpha House, Wythenshawe

Undertaken for

Wythenshawe Community Housing Group

Report No. 11380G-WML-XX-ZZ RP-G-0002B

January 2025

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Revision Status / History

Rev	Date	Issue / Purpose/ Comment	Prepared	Checked	Authorised
-	31/01/2025	First Issue	TPB	SCS	SCS
A	17/02/2025	Rock testing results included	-	-	SCS
B	04/06/2026	Further SI following demolition	TPB	SCS	SCS

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Executive Summary

Site Location	The site comprises Alpha House, Rowlandsway, Wythenshawe, M22 5RG.
Development Proposals	It is indicated that development would comprise the construction of a new ten-storey residential apartment block. External areas will likely comprise hardstanding for access and potential parking together with localised areas of soft landscaping.
Ground Conditions	Ground conditions encountered during the intrusive investigation generally comprise made ground to depths of between 0.30 and 2.00mbgl, in turn underlain by Glacial Deposits to 1.10 and 2.35mbgl, below which extremely weak / weak mudstone of the Bollin Mudstone Member extended to a maximum proven depth of 19.50mbgl.
Site Preparation	Following demolition of the building, existing foundations, ground floor slabs and other buried concrete/brick obstructions will need to be broken out to suitable depths and, subject to appropriate screening and crushing, will be suitable for re-use as bulk fill beneath hard cover areas. The proposed development indicates the removal of the existing electricity sub-station which dates back to sometime prior to 1982. It is advised that discussions should be held with the statutory service provider regarding the status of the facility and particularly whether any equipment potentially containing PCB's could be present and if so if it has been appropriately de-commissioned. Construction near any retained trees and importantly within any RPA's should be undertaken with due regard to guidance provided in BS5837:2012 'Trees in relation to design, demolition and construction – recommendations'.
Foundations	Due to the likely heavily loaded nature of the new structure piled foundations should be taken down into the solid Bollin Mudstone strata. The choice of pile type would be largely dependent on the need to balance optimum construction methods against environmental issues such as noise and vibration effects. Consultation with a reputable piling contractor will be required in this respect.
New Pavements	New road pavement design should be based on a California Bearing Ratio (CBR) value of no more than 5% in untreated made ground and unsaturated natural granular strata.
Soakaways	In consideration of the predominantly cohesive nature of the natural soils, resulting in poor infiltration rates, soakaways are not considered a feasible drainage option for the site. In addition, given the restrictive nature of the site there would likely be insufficient room to locate an appropriately sized soakaway the required distance away from proposed and retained structures.
Concrete Classification	The typical design sulphate (DS) class and "Aggressive Chemical Environment for Concrete" (ACEC) class for the shallow made ground in the central part of the site, likely to be in contact with proposed pile caps and ring beams, are DS-3 and AC-3 respectively. The typical DS class and ACEC class for the deeper strata likely to be in contact with concrete piles are DS-1 and AC-1 respectively.
Ground Contamination	The test results indicate that the made ground beneath the site contains localised levels of PAH compounds that are elevated above the SL's due to the localised presence of ash in the made ground. Therefore, as a direct contact pollution linkage will still exist in any new landscaped areas and it is recommended that made ground exposed at the surface in such areas is removed or is covered by 450mm of uncontaminated capping soils. The risk to Controlled Waters is Low with no remedial actions required.
Ground Gas	No ground gas precautions required.
Waste Soils	For preliminary guidance based on the current information, it is likely that made ground, would be classified as 'Non-hazardous' with natural soils classified as 'Inert' for landfill disposal.

	It will be the responsibility of the waste producer to undertake further testing and classification of any waste soils for disposal to an appropriately licenced landfill in accordance with current guidelines and Duty of Care requirements. The analysis of BaP within the remaining asphalt hardstanding suggests that some areas contain coal tar at hazardous concentrations for disposal purposes.

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1.0 INTRODUCTION

Appointment

1.1 WML Consulting has been commissioned by Wythenshawe Community Housing Group to undertake a Geo-environmental Investigation and Assessment of a site known as Alpha House, Wythenshawe.

Proposed Development

1.2 The proposed development would comprise the construction of a new ten-storey residential apartment block with potentially one-hundred, one and two-bedroom units.

1.3 External areas will comprise hardstanding for access and parking together with localised areas of soft amenity landscaping.

1.4 A copy of the preliminary lower ground/ground floor is provided on drawing 18703-LB-ZZ-XX-D-A-120000, in Appendix 01.

Objective

1.5 The objective of the ground investigation and assessment was to provide geotechnical recommendations for construction design purposes together with a geo-environmental risk assessment in terms of possible ground contamination.

1.6 To achieve the objective, the following tasks were undertaken:

- Review the existing desk study report for the site and design a Phase 2 Ground Investigation.
- Characterise the ground conditions in terms of geology, soil geotechnical parameters and ground contamination from information provided by the ground investigation.
- Provide recommendations regarding suitable foundations together with any other geotechnical considerations that could affect possible future development.
- Determine a ground conceptual model for the site so as to undertake a ground contamination Generic Quantitative Risk Assessment (GQRA).

Scope

1.7 A Phase 1 Desk Study for the site has been undertaken by WML and is presented in the following report:

- Phase 1 Desk Study and Preliminary Geoenvironmental Assessment, Reference 11380G-WML-XX-ZZ TP-G-0001, dated November 2023.

1.8 This report includes the findings of a phased Phase 2 Ground Investigation designed following a review of the Phase 1 Desk Study. For ease of reference, the findings of the Desk Study are summarised in the following sections. However, the two reports are not exclusive and should be read in conjunction.

1.9 The ground investigation comprised the formation of window sample probeholes, trial pts and rotary boreholes undertaken with reference to BS5930:2015 + A1:2020 Code of Practice for Ground Investigation and BS10175:2011 together with A2:2017 (updated to :2026 during the post-demolition investigations) , "Investigation of Potentially Contaminated Sites - Code of Practice" except where superseded by EN ISO 22475-1 "Geotechnical Investigation and Assessment – Sampling by Drilling and Excavation and Groundwater Measurements".

1.10 Geotechnical soil testing was undertaken in general accordance with guidelines provided in BS1377:1990 – Parts 1-9, "Method of Test for Soils for Civil Engineering Purposes". Samples for chemical analysis were obtained and handled generally in accordance with the current guidelines (BS10175: 2011 and A2:2017).

2.0 SITE LOCATION AND DESCRIPTION

Site Location

2.1 The site comprises land between Rowlandsway and Wavell Road in Wythenshawe. It is centred on approximate Ordnance Survey National Grid Reference 382837E, 386968N with an indicative postcode of M22 5RG.

Site Description

2.2 At the time of the first phase of investigation in January 2025, the majority of the site was surfaced with a centrally located, circa 1970's eight-storey, concrete panelled, office building. A row of single-storey, concrete panelled, commercial units extend north to south along the eastern and western elevations of the structure.

2.3 The structure was surrounded by a combination of soft landscaping, including grass and shrubs with sporadic, mature deciduous trees, together with asphalt hardstanding for access and parking and paved pedestrian walkways.

2.4 The small car park in the western section of the site was noted to be located at the elevation of the structures, with a change in elevation to Rowlandsway accommodated by short brick slope/wall to the north and west. Low level brick retaining walls were also noted in the car park located in the south-eastern section of the site.

2.5 At the time of the 2025 investigation the structure was disused and subject to an asbestos strip by a specialist contractor. An electricity substation, Rowlandsway Substation, was located at ground floor level within the south-eastern section of the main structure.

2.6 The second phase of investigations in 2026 were undertaken after demolition of the former structure and removal of the floor slabs and foundations. The Rowlandsway substation was still in use together with very localised asphalt to the site perimeters. The site had been surfaced with demolition crush from the former structure.

Topography

2.7 A topographical survey of the site was not available at the time of reporting, however information from aerial imagery indicates that the site is broadly commensurate with surrounding ground level, ranging from approximately 59.00 metres Above Ordnance Datum (mAOD) in the south-eastern corner to approximately 60mAOD across the remainder of the site.

2.8 However, as noted previous in the south-east and west low level brick retaining walls and bricked slopes accommodated changes in elevation up to an anticipated 1.0m with Wavell Road, the landscaping within the eastern site area and Rowlandsway respectively.

3.0 SUMMARY OF ENVIRONMENTAL AND HISTORICAL SETTING

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

Geology

3.2 The BGS plans show the site to be underlain by Devensian Glacial Till, indicated to comprise clay locally interbedded with sands and gravels. The drift deposits are indicated to be underlain by mudstone of the Bollin Mudstone Member.

Radon

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

Mining and Subsidence

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

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

Environmental Setting

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

3.7 The site is not within an Environment Agency Source Protection Zone. No groundwater abstraction licenses are located within 500m or surface water features within 250m.

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

3.9 An electricity sub-station is located within the site.

3.10 There is a petrol filling station located approximately 141m SW of the site, a Part A(2) Authorised Activity for unload petrol is also located here.

3.11 There are no designated environmentally sensitive sites within 250m of the subject site.

3.12 Detailed assessment of flood risk is outside the scope of this report. However, reference to the EA website and the Groundsure report indicates that the risk of flooding from rivers and the sea (RoFRaS) is currently designated as 'negligible'.

3.13 The site is indicated on BGS records to be within an area which is considered to have a 'low' risk of groundwater flooding.

Site History

3.14 The earliest map dated 1876 indicates the site to comprise primarily undeveloped agricultural land. A road (later named Woodhouse Lane) extended roughly north-south through the eastern half of the site, with a field boundary and footpath extending south-westwards. A possible field drain extended south-west to the north-east across the south-eastern section of the site, adjacent to the footpath.

3.15 Between 1971 and 1976 the site was developed into its current configuration, with the centrally located Alpha House and the north-south trending single-storey units apparent to the east and west. It is anticipated that the electricity substation was also constructed in the south-eastern section of the main structure at this time. Centron House was also constructed at a similar time along the northern boundary.

3.16 The structures, with the exception of Rowlandsway substation, had been cleared by early 2026.

3.17 The area surrounding the site historically comprised primarily undeveloped agricultural land, with a series of small localised field ponds the closest being some 100m south-east. Between 1938, and the 1960's the land surrounding the site was developed for residential housing and mixed commercial retail areas. Historic nearby land uses with the potential to have caused ground contamination included:-

- Garage 80m south-west;
- Unspecified tanks 88m to 112m north, and
- Unspecified tank 209m west.

Preliminary Contamination Risk Assessment

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

3.19 Based on the site history and the proposed development scenario, potential pollution linkages were generally considered low or unlikely with associated preliminary risks being generally assessed as very low to low.

4.0 SITE INVESTIGATION

Rationale

4.1 Intrusive investigations were undertaken primarily to provide geotechnical parameters for structural design purposes but also to verify the preliminary site conceptual model and clarify the environmental risk.

4.2 Window sample probeholes were undertaken to provide information on near surface deposits and to obtain samples for chemical analysis and geotechnical testing. Due to the small diameter of the probing equipment, the depth of penetration achieved is dependent on favourable ground conditions. As such, ground penetration may be restricted in circumstances where the ground is particularly strong or contains relatively large obstructions such as cobbles and/or boulders.

4.3 Rotary boreholes were advanced to depths of between 8.50 and 19.50mbgl in order to investigate underlying solid strata and provide parameters for pile design.

4.4 A hand excavated trial pit was also formed in an area where the window sampling machine could not be tracked.

4.5 The investigation locations were chosen so as not to impact on the presence of known/suspected services beneath the site.

4.6 Chemical analysis of a general suite of contaminants was undertaken on selected samples of soil. This was to clarify the expected contamination risk.

Intrusive Works

4.7 Initial ground investigations were undertaken by LOT Geotechnics Ltd on 9th December 2024. This comprised the formation of 5no window sample probeholes to a maximum depth of 4.00 metres below ground level (mbgl) and 1no hand excavated trial pit to a depth of 0.50mbgl.

4.8 Subsequently 2no rotary cored boreholes were formed by Dynamic Sampling UK Ltd to a maximum depth of 9.00mbgl between 8th and 9th January 2025.

4.9 Following demolition of the main structure a further 5no window sample probeholes were formed by SI Ground Investigation Ltd to a maximum depth of 3.00mbgl on 28th April 2026 and a further 3no rotary cored boreholes were formed by Dynamic Sampling UK to depths of 19.50mbgl between 23rd and 28th April 2026.

4.10 The exploratory hole records are presented in Appendix 02 of this report whilst the exploratory hole locations are shown on drawing 11380G-SK01 and 11380G-SK02-A in Appendix 01.

Monitoring Standpipes

4.11 Monitoring wells were installed within WS01, WS02 and WS03 as indicated on the logs presented in Appendix 02.

Geotechnical and Chemical Testing

4.12 In-situ geotechnical testing was undertaken at regular intervals during the formation of the window samples and boreholes in the form of Standard Penetration Tests (SPT's). The results for this testing are presented on the descriptive logs in Appendix 02.

4.13 In-situ permeability testing was undertaken following the formation of 3no window sample probeholes in 2026. The results of this testing are presented in Appendix 06.

4.14 Geotechnical soils testing was undertaken on selected samples for the following:

- Natural moisture content
- Liquid and Plastic limits.
- Laboratory CBR.

4.15 The results of the geotechnical testing are presented in Appendix 03.

4.16 Selected samples of the solid strata were submitted for the following rock testing:-

- Uniaxial Compressive Strength - UCS.
- Point Load Test.

4.17 The results of the geotechnical testing are presented in Appendix 03. However, it should be noted that during laboratory testing the fractures in some of the core samples resulted in insufficient length to diameter ratio samples for the UCS testing. These were then undertaken as point load tests.

4.18 Chemical analysis was undertaken on selected soil samples for the following contaminants of concern:

- Total arsenic, boron, cadmium, chromium VI, copper, lead, mercury, nickel, selenium, vanadium, zinc.
- Total cyanide, phenols, sulphur, sulphate.
- Speciated USEPA polyaromatic hydrocarbons (PAH).
- Total petroleum hydrocarbons (TPHCWG).
- Asbestos screen and identification.
- 2:1 water/soil sulphate extract, pH.

4.19 Two samples of asphalt hardstanding from the southern part of the site were obatined and tested for Benzene(A)pyrene in order to investigate the potential presence of coal tar within the material.

4.20 The results of the chemical analysis are presented in Appendix 04.

5.0 GROUND CONDITIONS

General

5.1 Ground conditions encountered during the intrusive investigation generally comprise made ground to depths of between 0.30 and 2.00mbgl, in turn underlain by Glacial Deposits to 1.10 and 2.35mbgl, below which extremely weak / weak mudstone of the Bollin Mudstone Member extended to a maximum proven depth of 19.50mbgl.

Made Ground

5.2 During the pre-demolition investigations made ground was encountered within all of the exploratory holes from ground level to depths of between 0.30 and 0.65mbgl.

5.3 The made ground generally comprised a surface horizon of reworked topsoil to depths of between 0.25 and 0.30mbgl. This comprised dark brown, slightly gravelly, organic sand with roots and rootlets. Gravel sized fragments included brick and sandstone.

5.4 The surface horizon of topsoil was generally underlain by brown to grey, sandy gravel to depths between 0.60 and 0.65mbgl.

5.5 Within WS02 the made ground comprised a surface horizon of concrete paving slabs on a concrete blinding extending to 0.09mbgl, underlain by brown gravelly sand to 0.30mbgl.

5.6 Gravel sized fragments included brick, sandstone, limestone, ash and brick. A low cobble content was recorded within WS05, with cobble sized fragments generally comprising concrete.

5.7 Due to its relatively shallow nature confined within the service inspection pits, no SPT's were undertake within the made ground.

5.8 During the post-demolition investigations made ground comprising brownish grey, sandy, gravel and cobbles was encountered to depths of between 0.75 and 1.20mbgl. Within WS105 a deeper horizon of made ground comprising brownish grey, sandy, gravelly clay was recorded to a maximum proven depth of 2.00mbgl.

Glacial Deposits

5.9 Strata considered to represent Glacial Deposits were encountered underlying the made ground within the majority of exploratory holes, extending to depths of between 1.10 and 2.35mbgl.

5.10 The Glacial Deposits generally comprised loose to medium dense brown, locally slightly silty gravelly, variably clayey fine to medium sand or firm brown, variably silty, sandy and gravelly clay.

5.11 SPT 'N' values within the cohesive deposits ranged between 7 and 14, indicating a locally soft but generally firm consistency.

5.12 SPT 'N' values within the granular Glacial Deposits ranged between 8 and 25 confirm the loose to medium dense state of compaction.

Bollin Mudstone Member

5.13 Strata considered to represent the weathered Bollin Mudstone Member was encountered underlying the Glacial Deposits within all exploratory holes at depths of between 1.10 and 2.35mbgl.

5.14 These generally comprised highly to completely weathered mudstone in the upper horizons extending to depths of between 2.10 and 2.90mbgl and were recovered as reddish brown, slightly silty, variably sandy clay or clayey sand with mudstone lithorelicts.

5.15 Below these depths the solid strata generally comprises extremely weak to very weak, reddish brown, destructured to highly weathered mudstone extending to a maximum proven depth of 6.50mbgl below which the mudstone became extremely weak to weak to the base of the deepest hole at 19.50mbgl.

5.16 SPT 'N' values within the weathered deposits ranged between 8 and 35 indicating a firm to stiff consistency. SPT 'N' values within the solid strata are generally in excess of 50.

5.17 Core index data indicate Total Core Recovery (TCR) ranging between 0% and 100% with Solid Core Recovery generally between 0% and 93%. A Rock Quality Designation (RQD) generally of between 0% and 67% indicates the rock core to be fragmented with a discontinuous rock mass.

Geotechnical Testing

5.18 Geotechnical testing undertaken on selected soil samples are summarised in the following table:

Test	Made Ground	Glacial Deposits	Bollin Mudstone Member
Natural Moisture Content	-	16.4 - 17.4%	16.5 - 18.2%
Liquid Limit	-	30 - 33%	32 - 34%
Plasticity Index	-	14 - 17% (Modified to 12 - 15%)	16 - 17% (Modified to 13 - 14%)
Atterberg Classification	-	Low Plasticity	Low Plasticity
Laboratory CBR	6.8 - 53.1%	6.0%	-

5.19 The results of the rock core laboratory testing are summarised as follows:

Depth Range	Point Load $I_s(_{50})$ MPa		Approximate Equivalent Unconfined Compressive Strength (UCS) MPa	Unconfined Compressive Strength (UCS) MPa	Relative Strength
	Axial	Diametral			
4.00 – 6.00	0.03 – 0.11	0.02 – 0.04	0.28 – 1.54	-	Extremely weak to very weak
6.00 – 8.00	0.06 – 0.26	0.02 – 0.07	0.28 – 3.64	6.8	Extremely weak to very weak
8.00 – 10.00	0.08 – 0.24	0.02 – 0.04	0.28 – 3.36	-	Extremely weak to very weak
10.00 – 12.00	-	-	-	6.2	Weak
12.00 – 14.00	0.02	0.02	0.28	6.0	Extremely weak to weak
14.00 – 16.00	0.20	0.04	0.56 – 2.80	-	Extremely weak to very weak
16.00 – 19.00	-	-	-	7.3	Weak

Notes
Limited rock samples could be obtained of a suitable length to undertake UCS testing so the equivalent has been determined using the Franklin method I_{S50} multiplied by a set factor for soft rocks.

Visual/Olfactory Evidence of Contamination

5.20 No visual and/or olfactory evidence of significant ground contamination was identified within the exploratory holes during the investigation.

Groundwater

5.21 No groundwater was encountered during the formation of the exploratory holes. However, it should be noted that the deeper rotary holes were formed with a flush that may have masked any water strikes.

5.22 It should be appreciated that the groundwater observations described above have been undertaken during a very short period of time. Significant variations in the long-term groundwater regime may occur at other times, particularly with prolonged, extreme weather conditions, and that no account can be taken of such in this report.

General

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

6.0 GEOTECHNICAL APPRAISAL

Site Preparation

6.1 During the initial investigations an asbestos survey of the existing building was being undertaken and any Asbestos Containing Materials (ACM) so encountered were being removed by an appropriately licensed contractor prior to any demolition being undertaken. A formal report should be sought from the asbestos removal contractor prior to any demolition works being commenced.

6.2 Following demolition of the building, and residual foundations, ground floor slabs and other buried concrete/brick obstructions would be broken out to suitable depths below formation levels where they are to impinge on the proposed buildings. Such materials removed as part of the clearance work, subject to appropriate screening and crushing, will be suitable for re-use as bulk fill beneath hard cover areas.

6.3 The proposed development appears to indicate the retention of the existing electricity sub-station which dates back to sometime prior to 1982. Although the use of PCB's was banned in 1976, due to the age of the oldest sub-station, it is advised that discussions should be held with the statutory service provider regarding the status of the facility and particularly whether any equipment potentially containing PCB's could be present and if so if it has been appropriately de-commissioned. Therefore, it cannot be discounted that a degree of ground remediation may be required local to the facility.

6.4 As part of the site clearance, the removal of trees and other vegetation has been undertaken and it is assumed that this was undertaken in consultation with an ecological specialist. Construction near any retained trees and importantly within any RPA's should be undertaken with due regard to guidance provided in BS5837:2012 'Trees in relation to design, demolition and construction – recommendations'.

6.5 Any further earthworks should be carried out in accordance with recommendations and guidance provided in BS6031:2009, Code of Practice for Earthworks.

6.6 Site enabling works will need to take account of the integrity of any existing/ adjacent services at the site and it cannot be ruled out that this may need to be diverted as part of the development proposals.

6.7 Due to the possibility of unforeseen ground contamination beneath the existing structure, it is recommended that excavations should be overseen by an environmental specialist who will provide appropriate advice where any suspected contamination such as hydrocarbons or ACM is encountered during site preparation and/or subsequent groundworks.

Foundations

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

6.9 The underlying Glacial Deposits are also not considered to be adequate to support the anticipated relatively heavy loading from the proposed structure.

6.10 The shallowest competent bearing horizon is therefore the Bollin Mudstone which was encountered at depths of between 1.10m and 2.35mbgl across the site area. Due to the variable weathered nature of the solid strata surface, foundations taken to such depths should be designed on a net allowable bearing pressure of no more than 150kN/m² or 250kN/m^2 on the deeper solid strata which would be in excess of 5.00mbgl, so as to reduce total and differential settlements to tolerable limits.

6.11 However, the requirement for adequate support and possible dewatering measures, together with the increased cost of soil disposal, will probably render the use of spread foundations to such depths impractical and uneconomical.

6.12 Consideration should therefore be given to piled foundations taken down into the solid Bollin Mudstone strata. The choice of pile type would be largely dependent on the need to balance optimum construction methods against environmental issues such as noise and vibration effects. Consultation with a reputable piling contractor will be required in this respect.

6.13 Foundation construction will need to take account of any remaining and/or new services and, where they are in close proximity, may need to be taken down to beneath the lowest level of the service trench so that their structural integrity is maintained.

Floor Slabs

6.14 In consideration of depth of made ground and incompetent natural strata it is anticipated that new floor slabs could be ground bearing only where underlain by imported fill which has been compacted to an appropriate specification. However, in the event that a piled foundation solution is selected for the site, floor slabs will be required to be suspended.

Excavations and Groundwater

6.15 Excavations at the site will be feasible using conventional hydraulic plant. All excavations at the site and specifically requiring man-entry, will need adequate lateral support, or will need to be battering back to a safe angle to ensure their stability.

6.16 Conventional 'sump and pump' dewatering measures are likely to be adequate to keep excavations dry, although it cannot be discounted that groundwater exclusion measures such as interlocking sheet piles would be required to prevent excessive ingress of water during periods of prolonged rainfall.

6.17 Such support measures will also reduce the risk of conditions that could lead to loss of ground beneath any nearby adjacent structures or infrastructure.

External Pavements

6.18 Laboratory CBR testing has indicated a CBR value of between 6.0 and 53.1% However, it is recommended that new road pavement design should be based on a California Bearing Ratio (CBR) value of no more than 5% in untreated made ground and unsaturated natural granular strata.

6.19 The CBR will need to be reviewed and confirmed by site inspection and possibly suitable in-situ testing at formation levels following any earthwork operations and prior to pavement construction.

6.20 In any event, all formations should be proof-rolled with any soft, loose or otherwise unsuitable material being removed and replaced with compacted granular fill.

Concrete Design

6.21 Design/mix of buried concrete should be undertaken in accordance with the "Aggressive Chemical Environment for Concrete" (ACEC) classification, of BRE Special Digest 1:2005 (Concrete in Aggressive Ground). With reference to the site history, it is deemed appropriate to classify the site as "Brownfield", with respect to BRE Special Digest, assuming mobile groundwater conditions.

6.22 Values of 2:1 water/soil extract for sulphate within deeper strata range between less than 10mg/l and 60mg/l. Values of pH range from 7.52 to 8.68 indicating near neutral to slightly alkaline conditions.

6.23 However, values of 2:1 water/soil extract for sulphate within the recently emplaced granular made ground (to depths of 0.75 and 1.10mbgl within the central area) range between 1,100mg/l and 1,570mg/l. Values of pH range within this material range from 10.22 to 10.59 indicating alkaline conditions.

6.24 On the basis of these results, the typical design sulphate (DS) class and "Aggressive Chemical Environment for Concrete" (ACEC) class for the shallow made ground in the central part of the site, likely

to be in contact with proposed pile caps and ring beams, are DS-3 and AC-3 respectively. The typical DS class and ACEC class for the deeper strata likely to be in contact with concrete piles are DS-1 and AC-1 respectively.

Drainage and Soakaways

6.25 In situ permeability testing has indicated a coefficient of permeability of $2.4x10^{-8}$ and $2.35x10^{-9}$ m/sec within the natural strata.

6.26 In consideration of the predominantly cohesive nature of the natural soils, resulting in poor infiltration rates, soakaways are not considered a feasible drainage option for the site. In addition, given the restrictive nature of the site there would likely be insufficient room to locate an appropriately sized soakaway the required distance away from proposed and retained structures.

7.0 GENERIC QUANTITATIVE RISK ASSESSMENT (GQRA)

General

7.1 A review of the readily available information had concluded that the potential for exposure to ground contamination is unlikely to low, leading to a low preliminary risk.

7.2 However, it has been considered prudent to undertake chemical analysis of the sub-surface soils to confirm the low human health risk status of the site.

Human Health

7.3 Selected samples have been analysed for a general suite of contaminants of concern and compared against Screening Levels (SL's) for human health to determine the significance of the measured concentrations in relation to the site conceptual model. Thus, a Generic Quantitative Risk Assessment has been undertaken in line with guidelines provided in Land Contamination Risk Management, updated June 2025.

7.4 The criteria for a limited number of contaminants have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.

7.5 Within the document, Category 4 Screening Levels (C4SL's) are described as being more pragmatic than previous screening criteria and represent concentrations in soil that present an 'acceptable' level of risk within the context of Part 2A.

7.6 The National Planning Policy Framework states that 'after development, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990'. Therefore, by inference, the C4SL's are appropriate for use in the planning context.

7.7 Although the SP1010 document states that C4SL only apply for a 'sandy loam soil with 6% soil organic matter', it is generally accepted that assessment criteria for metals are not sensitive to changes in soil organic content (SOM). The C4SL's have therefore been adopted as assessment criteria in this report for the listed metals within the SP1010.

7.8 Subsequent to SP1010, LQM/CIEH have published a document entitled 'The LQM/CIEH S4ULs for Human Health Risk Assessment' 2015. In brief, the document provides updated assessment criteria which have been derived in accordance with UK legislation, national as well as EA policy and using a modified version of the CLEA software and available guidance. The new screening criteria, or Suitable 4 Use Levels (S4ULs), are intended to provide a complete and updated replacement to the previous LQM/CIEH GAC of 2009. As such they are considered appropriate for use in this assessment for other contaminants not covered by C4SL's and/or for organic contaminants assuming a worst-case Soil Organic Matter (SOM) of 1% as an initial conservative assessment.

7.9 For each contaminant, S4UL's and C4SL's have been calculated for six land use scenarios, namely:

- Residential with homegrown produce.
- Residential without homegrown produce.
- Allotments.
- Commercial.
- Public Open Space, near residential housing.
- Public Parks, remote from residential housing.

7.10 In light of the proposed development with the only landscaping comprising highways verges and raised level podium planting, the SL's for a "Commercial" end-use are considered appropriate for the assessment at this stage. Organic matter within the samples has been recorded at between 1.3% and

7.6%, therefore the SL's for 1% organic matter have been used. A table of relevant SL's are provided in Appendix 05.

Soil Test Results

7.11 14no soil samples (9no pre-demolition, 5no post-demolition) were analysed for a suite of Contaminants of Concern (CoC). The majority of the concentrations were measured below the SL's for a "Commercial" end-use with the following exceptions.

Contaminant	Number of Exceedances	SL (mg/kg)	Recorded Concentrations (mg/kg)	Samples
Benzo(a)pyrene	1	35	37.3	WS01 – 0.40m
Benzo(b)fluoranthene	1	44	46.2	WS01 – 0.40m
Dibenzo(ah)anthracene	1	3.5	5.07	WS01 – 0.40m

7.12 7no soil samples were analysed for TPH CWG with BTEX. All of the concentrations were below the SL's for a "Commercial" end-use.

7.13 Further assessment of the results has been undertaken in an attempt to clarify the human health risk that may be posed by the PAH compounds.

7.14 PAH's can be associated with a diverse range of contaminative sources including petrogenic (for example oil spills and coal storage), pyrolytic (ash, clinker, soot and atmospheric deposition of smoke, coal tars for example) and phytogenic (for example plant-derived peat). Due to the prevailing chemical processes, the profile of PAH mixtures generated at high temperatures (pyrolytic sources) differ from those formed at more moderate temperatures (petrogenic sources).

7.15 The concentration ratios of certain PAH congeners can be used to infer a possible source of PAH mixtures and, by plotting each sample in terms of varying ratios, it is possible to further characterise the PAH profiles and conjecture a possible source based on where the results cluster within the plot.

7.16 The 'PAH - Double Ratio Plots' for different congeners are presented in Appendix 04 and suggest urban background combustion/pyrolytic signatures, for example where organic materials such as wood and coal have been burned at high temperatures resulting in ash and soot and more locally clinker.

7.17 This would confirm to a degree the site observations, in that no visual or olfactory evidence of hydrocarbon contamination was identified with the investigation logs indicating the presence of ash and within the made ground.

7.18 The elevated concentrations of PAHs encountered are therefore attributed to these materials being entrained within the shallow soil matrix.

7.19 No asbestos was detected within any of the samples analysed.

7.20 2no samples of asphalt (CT01 & CT02) were analysed to determine the concentration of BaP, which, if the concentration exceeds 50mg/kg, may indicate that the asphalt is likely to contain coal tar at sufficient concentrations as to deem it hazardous waste. The analysis recorded a concentration of BaP of 61.3mg/kg within CT01 and <4.0mg/kg within CT02, therefore suggesting that only the asphalt at CT01 contains coal tar at hazardous concentrations for disposal purposes.

7.21 3no soil samples in the vicinity of the electricity sub-station were analysed for Speciated PCB (EC7 & WHO12). All of the concentrations were below laboratory detection limits.

Discussion and Conclusions

Human Health

7.22 The test results indicate that the localised made ground beneath the site contains localised levels of PAH compounds that are elevated above the SL's due to the localised presence of ash in the made ground.

7.23 Notwithstanding this, where surfaced with hardstanding or buildings, there will be no mechanism for a long-term direct contact contamination linkage. Therefore the risk to end-users and to the general public will be negligible in the long-term.

7.24 However, a direct contact pollution linkage will still exist in any new landscaped areas and it is recommended that made ground exposed at the surface in such areas is removed or is covered by uncontaminated sub-soil and topsoil thus removing the pollution linkage. This will normally comprise a 450mm cover, with a minimum 150mm thickness of topsoil and 300mm thickness of sub-soil, over the existing made ground. However, the soft landscaping to the courtyards are to be in raised podium planters.

Controlled Waters

7.25 The bedrock underlying the site is classified as a 'Secondary B' Aquifer. The superficial strata is classified as a 'Secondary Undifferentiated' Aquifer.

7.26 The site is not within an Environment Agency Source Protection Zone. No groundwater abstraction licenses are located within 500m or surface water features within 250m.

7.27 However, the relatively low permeability of the predominantly cohesive superficial Deposits and Mudstone beneath the site will limit vertical and lateral migration of any undetected mobile contamination.

7.28 Following development, the site will include new structures and hardstanding with a contained drainage system. This will limit downward movement of surface water and therefore the potential for leachate generation will be reduced, thus reducing the potential for mobilisation of contaminants.

7.29 The overall risk to Controlled Waters represented by the localised PAH contamination identified within shallow made ground soils on site is therefore considered to be Low with no remedial actions required.

8.0 GROUND GAS RISK ASSESSMENT

Ground Gas Conceptual Model

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

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

8.3 The presence of ground gas resulting from shallow unrecorded mine workings can be discounted.

8.4 No appreciable thickness of made ground or other soil with significant organic content have been encountered beneath the site.

8.5 In consideration of the above, the risk to the development from ground gas is considered very low with no specific remedial measures required.

8.6 This should be confirmed with the local authority Environmental Health / Building Control Officer prior to any building design being finalised.

9.0 OTHER POTENTIAL DEVELOPMENT CONSIDERATIONS

Excavated Soils

9.1 Excavation works undertaken during the development are likely to produce waste soils for which appropriate waste management will be required. In line with current sustainability principals, any waste soils should firstly be considered for re-use where possible by incorporation into the development.

9.2 However, due to the extent of the proposed redevelopment, it is envisaged that such excavated soil will, in the main, need to be removed from site under appropriate duty of care.

9.3 It should be noted that the chemical analysis results for disposal classification are assessed against different assessment criteria to those relating to contamination risk assessment. Soils that are deemed suitable for use in terms of risk to human health and the environment may not necessary be un-contaminated and could be classified as Non-Hazardous or even Hazardous for disposal purposes.

9.4 For preliminary guidance based on the current information, it is likely that made ground, would be classified as 'Non-hazardous' with natural soils classified as 'Inert' for landfill disposal.

9.5 In the unlikely event that excavated made ground, following inspection, is found to include significant hydrocarbons or Asbestos Containing Material (ACM) and/or fibres that cannot be segregated, it may classify as Hazardous, subject to further quantification testing.

9.6 However, for Inert waste disposal, allowance will need to be made for further specific WAC testing with appropriate consideration of the additional time and cost associated with this.

9.7 It will be the responsibility of the waste producer to undertake further testing and classification of any waste soils for disposal to an appropriately licenced landfill in accordance with current guidelines and Duty of Care requirements.

9.8 The Analysis of BaP within the remaining asphalt hardstanding suggests that some areas contain coal tar at hazardous concentrations for disposal purposes.

Imported Fill

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

Water Supply Pipes

9.10 The relevant water supply provider will need to be consulted with regards the selection of suitable water supply pipe materials for the development, should these be required. In light of the ground conditions encountered, the requirement for specific materials and measures to protect the water supply from hydrocarbon contamination cannot be discounted.

APPENDIX 01

Drawings

CENTRON HOUSE
(to be demolished)

Extents of existing taxi rank

WAVELL ROAD

ROWLANDSWAY

ALPHA HOUSE
(under demolition)

DELTA HOUSE

CIVIC CENTRE

FORMER BINGO HALL
(vacant)

0 2m 4m 6m 8m 10m

Notes

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OS Licence number 100022432

Application Boundary

WCHG Ownership Boundary

Rev	Date	Description	Drawn / Checked
C01	21.11.25	FINAL PLANNING ISSUE	TM/DM
P02	06.11.25	PLANNING ISSUE	TM/DM
P01	31.10.25	Draft planning issue	TM/DM

Project name

Alpha House
3995B

Drawing number — Rev

18703 - LB - ZZ - XX - D - A - 102000 **C01**

Drawing

Existing Site Plan

Purpose of issue — Suitability code

Planning Submission — S2

Scale — First issue date

1 : 200 @ A1 — xx/xx/xxxx

Client

Wythenshawe Community Housing Group & Muse Places

London
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OS Licence number 100022432

Application Boundary

WCHG Ownership Boundary

Flat Type

- 1B2P
- 1B2P M4(3)
- 2B3P
- 2B3P M4(3)

Rev	Date	Description	Drawn / Checked
C01	21.11.25	FINAL PLANNING ISSUE	TM/DM
P08	10.11.25	PLANNING ISSUE	TM/DM
P07	06.11.25	PLANNING ISSUE	TM/DM
P06	31.10.25	Draft planning issue	TM/DM
P05	26.09.25	For information	TF/TM
P04	28.08.25	Updated following comments	TM
P03	22.08.25	Updated following comment	DM
P02	08/07/25	For Information	TM/DM
P01	27/06/25	For Information	TM/DM

Project name

Alpha House

3995B

Drawing number: 18703 - LB - ZZ - XX - D - A - 120000 **C01**

Drawing

GA Plan - Ground Floor

Purpose of issue: Planning Submission

Suitability code: S2

Scale: 1 : 200 @ A1

First issue date: 27/06/2025

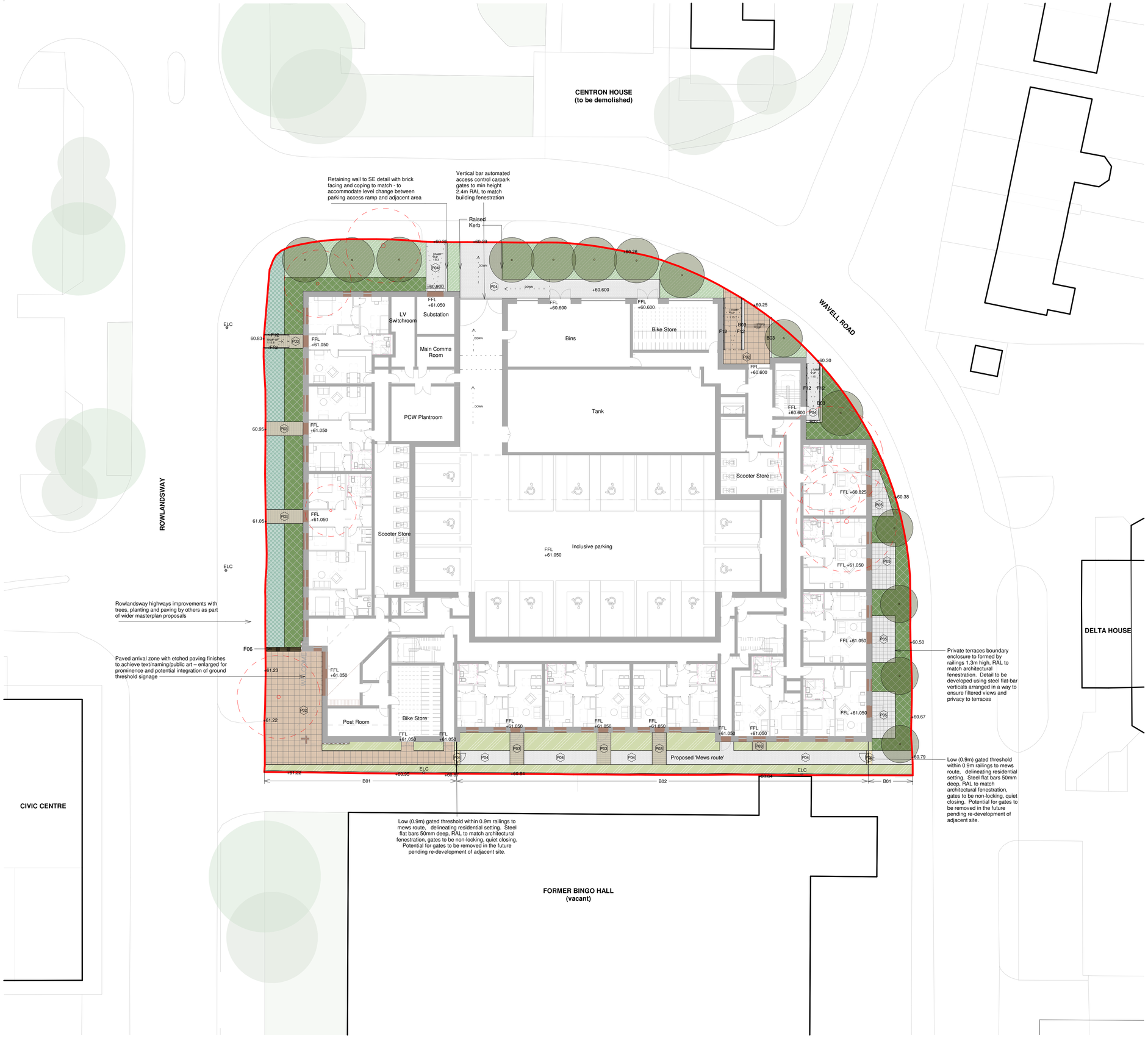
Client: Wythenshawe Community Housing Group & Muse Places

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1 | 00-Landscape GA - Ground Floor

1 : 200

0 2m 4m 6m 8m 10m

KEY

- Ownership Boundary
- Proposed trees (ref plans *18703-LB-ZZ-XX-D-L-200003 and 18703-LB-ZZ-XX-D-L-200004 Landscape Planting Plan*)
- Existing trees to be removed
- ELC Existing lighting columns

Hard Landscape

- P01 Recycled composite timber decking (to courtyard only)
- P02 Communal lobby entrance slab paving in mixed tones - pcc paving with 70% natural granite aggregate content (eg Lavaro Wit and Grijs/rood by Hardscape, 400x400mm or similar approved products)
- P03 Private entrance paving: Textured linear setts in mixed tones - pcc paving with 100% natural granite aggregate content (eg Liscio Bianco and Ambrogio by Hardscape, 330x110mm or similar approved products)
- P04 Slab paving - pcc paving with 70% natural granite aggregate content, (eg Lavaro Wit by Hardscape, 300x150mm or similar approved products)
- P05 Flags paving - natural granite aggregate paving (eg Mayfair Slabs by Tobermore,Stack, Silver, 400x400mm or similar approved products)
- P06 Gate setts paving - pcc paving with 70% natural granite aggregate content (eg Lavaro Oranje, 150x150mm or similar approved products)
- P07 Resin bound gravel 1(eg Nickel by GCL Products or similar approved products)
- P08 Resin bound gravel 2 (eg Iberian Sun by GCL Products or similar approved products)

Notes:
-Pedestrian paving at ground level to be edged with pcc edge kerbs to match adjacent surface eg by Hardscape or similar approved products

-At courtyard level paving to be edged in steel/aluminium. All planting at courtyard/podium level to be raised above slab in either 500mm or 800mm raised steel planter edge - colour to match fenestration RAL with PPC finish.

Soft Landscape (ref plans *18703-LB-ZZ-XX-D-L-200003 and 18703-LB-ZZ-XX-D-L-200004 Landscape Planting Plan*)

- PL01 Wavell Road edge planting
- PL02 Hedge planting
- PL03 Mews planting
- PL04 Courtyard planting
- PL05 Rowlandsway edge planting

Furniture (some features in courtyard only - ref plan *18703-LB-ZZ-XX-D-L-200002-Landscape GA Plan - First Floor*)

- F01 Pergola - Painted powder coated steel structures 2.4m high x width and arrangement shown. RAL to match architectural fenestration. Pergola over table seating area to include recessed LED lighting on switch system for management control with catenary lighting.
- F02 Ventilation grilles - Galvanised steel grilles in horizontal arrangement to satisfy ventilation requirements. Grilles to be fixed to concrete upstand to SE detail, suitable to withstand safe pedestrian loading eg by Lang and Fulton
- F03 Privacy panels - 1.8m high x 1.8m (or 2.5m) depth, steel painted powder coated privacy panels formed in louvre-style horizontal slatted metal screens to filter views to adjacent homes. RAL to match architectural fenestration
- F04 FSC certified hardwood 0.5m high timber growing beds, plugged fixings sizes as shown
- F05 FSC certified hardwood communal tables 0.9m x 2m approx with painted steel frame
- F06 FSC certified hardwood slatted seating with arms and backrests with painted steel frame
- F07 Painted steel bistro style tables and chairs with backrests and arms - RAL to match fenestration
- F08 Catenary lighting to specialist design - wires and fixings to SE design directional downlighters to avoid glare into homes (all other lighting to be building-mounted to architect detail)
- F09 Lockable water points
- F10 External power point
- F11 Habitat features - to include bat boxes, bird boxes, bee posts and bricks (locations to be agreed with ecologist)
- F12 Handrail fixed to wall, RAL to match architectural metalwork

Boundary

- B01 Timber fence to 1.1m height with 'tongue and groove' style FSC certified softwood, timber posts and capping rails. Boundary to be in place pending re-development of adjacent site.
- B02 Timber fence to overall 2.4m height. 0.2m high Fencing gravel board, 1.9m high 'tongue and groove' style FSC certified softwood, timber posts and capping rails, with 300mm height slatted timber trellis on top. Boundary to be in place pending re-development of adjacent site.
- B03 Dwarf retaining wall constructed in brick to match building with brick on edge copings and specials to corners, with hidden end fixings.

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Rev	Date	Description	Drawn / Checked
C01	21/11/25	FINAL PLANNING ISSUE	DM
P02	06/11/25	PLANNING ISSUE	YD/KD
P01	31/10/25	DRAFT - Planning issue	YD/KD

Project name

Alpha House

3995B

Drawing number: 18703 - LB - ZZ - XX - D - L - 200001 **C01**

Drawing

Landscape GA Plan - Ground Floor

Purpose of issue: Planning Submission

Scale: 1 : 200 @ A1

First issue date: 31/10/25

Client: Wythenshawe Community Housing Group & Muse Places

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CBL522- Alpha House, Site Location, M22 5RG



CBL Welfare area

Window sample

Rotary Borehole

All other locations other that the building footprint can be accessed to carry out window sampling.



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KEY

- Rotary Borehole
- Windowless Sample Probehole

Rev	Date	Description	Drawn / Checked
P01	24/01/24	For Information	

Project name

Alpha House

Wythenshawe, Manchester

Drawing number: 3995A - LB - XX - XX - D - A - 110000

Rev: **P01**

Drawing

Site Location Plan

Purpose of issue

Preliminary

Scale: 1 : 1250 @ A3

First issue date: 24/01/24

WML CONSULTING

Project: Alpha House

Drg Title: Exploratory Hole Plan

Job No: 11380G By: TPB

Drg No: SK-02 Rev: A

Date: 01/05/2026 Scale: NTS

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APPENDIX 02

Exploratory Hole Records

WML CONSULTING	Project Title: Alpha House, Wythenshawe		WS01
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 1
	GL (mAOD):	N Coord: 0	E Coord: 0
Date: 09/12/2024	Method: Window Sample	Driller: LOT Geotechnics Ltd	Logged By: TPB

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
0.10	E				0.25	Turf over dark brown, slightly gravelly, organic sand with rootlets. Gravel subangular, fine to coarse, including sandstone. (MADE GROUND)		
0.30 - 0.60	B				0.60	Dark grey, sandy, subangular, fine to coarse gravel including limestone, sandstone and ash. (MADE GROUND)		
0.40	E	N=14 (3,3,4,4)			1.00			
1.20	D				1.10	Medium dense, grey and brown, slightly clayey, fine to coarse SAND. (GLACIAL DEPOSITS)		
1.30	J					Firm to stiff, brown and grey mottled, slightly silty, slightly sandy CLAY with mudstone lithorelicts. (WEATHERED BOLLIN MUDSTONE MEMBER)		
		N=18 (3,4,5,6)			2.00			
					2.50			
		pp 50/125mm			2.70	Extremely weak, highly weathered, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
					3.00	End Of Borehole At 2.70 m		
					4.00			
					5.00			
					6.00			

KEY

D - Disturbed Sample
B - Bulk Sample
U - Undisturbed
W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

REMARKS

No Groundwater Encountered

Scale: 1:40

Water Strikes

Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths

Date	Casing	Water

Chiselling

From	To	Hours

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		WS02
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 1
	GL (mAOD):	N Coord: 0	E Coord: 0
Date: 09/12/2024	Method: Window Sample	Driller: LOT Geotechnics Ltd	Logged By: TPB

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
0.20	E				0.09	Concrete paving slab.		
0.30 - 0.60	B				0.30	(MADE GROUND)		
						Weak, grey concrete.		
						(MADE GROUND)		
		N=11 (2,3,3,3)			1.00	Brown, gravelly sand with a low cobble content. Gravel and cobbles are subangular, fine to coarse, including brick. (MADE GROUND)		
1.20	D							
1.40	J					Firm, brown, slightly gravelly, very sandy CLAY. Gravel is subangular, fine to medium, including sandstone.		
					1.60	(GLACIAL DEPOSITS)		
		N=25 (4,5,7,9)			2.00	Medium dense, reddish brown, clayey, fine to medium SAND.		
					2.35	(GLACIAL DEPOSITS)		
						Extremely weak, reddish brown, destructured MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
		N=43 (7,12,12,12)			3.00			
					3.50			
						Extremely weak, highly weathered, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
		sb 50/135mm			4.00	End Of Borehole At 4.00 m		
					5.00			
					6.00			

KEY

D - Disturbed Sample
B - Bulk Sample
U - Undisturbed
W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Scale: 1:40

Water Strikes

Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths

Date	Casing	Water

Chiselling

From	To	Hours

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		WS03
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 1
	GL (mAOD):	N Coord: 0	E Coord: 0
Date: 09/12/2024	Method: Window Sample	Driller: LOT Geotechnics Ltd	Logged By: TPB

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
0.10	E				0.30	Dark brown, slightly gravelly, clayey, organic sand with roots. Gravel is subangular, fine to coarse, of brick. (MADE GROUND)		
0.30 - 0.60	B				0.60	Brownish grey sand and subangular, fine to coarse gravel including limestone, sandstone and brick. (MADE GROUND)		
0.40	E	N=15 (3,4,4,4)			1.00	Medium dense, orange brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is subangular to subrounded, fine to coarse, including sandstone. (GLACIAL DEPOSITS)		
1.20	D				1.40			
1.30	J	N=18 (3,3,5,7)			2.00			
					2.10	Firm to stiff, reddish brown, very sandy CLAY. (WEATHERED BOLLIN MUDSTONE MEMBER)		
					2.70	Extremely weak, destructured, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
		pp 50/125mm			3.00	Extremely weak, highly weathered, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
						End Of Borehole At 3.00 m		
					4.00			
					5.00			
					6.00			

KEY

D - Disturbed Sample
B - Bulk Sample
U - Undisturbed
W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Scale: 1:40

Water Strikes

Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths

Date	Casing	Water

Chiselling

From	To	Hours

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		WS04
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 1
	GL (mAOD):	N Coord: 0	E Coord: 0
Date: 09/12/2024	Method: Window Sample	Driller: LOT Geotechnics Ltd	Logged By: TPB

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
0.10	E				0.30	Turf over dark brown, slightly gravelly, organic sand with rootlets. Gravel subangular, fine to coarse, including brick. (MADE GROUND)		
0.40	E				0.60	Brownish grey, sand and subangular, fine to coarse gravel including limestone, sandstone and brick. (MADE GROUND)		
		N=18 (4,4,5,5)			1.00	Medium dense, brown, slightly clayey, fine to coarse SAND. (GLACIAL DEPOSITS)		
1.80	J				1.70	Stiff, red brown, slightly silty, slightly sandy CLAY with mudstone lithorelicts. (WEATHERED BOLLIN MUDSTONE MEMBER)		
		N=18 (3,4,5,6)			2.00	Extremely weak, destructured, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
		N=35 (7,7,10,11)			2.10			
		pp 50/220mm			3.00			
					3.70	End Of Borehole At 3.70 m		
					4.00			
					5.00			
					6.00			

KEY

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B - Bulk Sample
U - Undisturbed
W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Scale: 1:40

Water Strikes

Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths

Date	Casing	Water

Chiselling

From	To	Hours

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		WS05
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 1
	GL (mAOD):	N Coord: 0	E Coord: 0
Date: 09/12/2024	Method: Window Sample	Driller: LOT Geotechnics Ltd	Logged By: TPB

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
0.10	E				0.30	Turf over dark brown, slightly gravelly, organic sand with rootlets. Gravel subangular, fine to coarse, including sandstone. (MADE GROUND)		
0.50	E				0.65	Dark brownish grey, slightly clayey, sand and subangular, fine to coarse gravel including limestone, sandstone and ash. Low cobble content of concrete. (MADE GROUND)		
		N=8 (2,2,2,2)			1.00			
1.30	D				1.20	Loose, brown, slightly clayey, fine to medium SAND. (GLACIAL DEPOSITS)		
		N=22 (4,6,6,6)			2.00			
					2.10	Firm to stiff, brown, slightly silty, slightly sandy CLAY with mudstone lithorelicts. (WEATHERED BOLLIN MUDSTONE MEMBER)		
		pp 50/165mm			2.40			
					2.70	Extremely weak, destructured, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
					3.00	Extremely weak, highly weathered, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
						End Of Borehole At 2.70 m		
					4.00			
					5.00			
					6.00			

KEY

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C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

REMARKS

No Groundwater Encountered

Scale: 1:40

Water Strikes

Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths

Date	Casing	Water

Chiselling

From	To	Hours

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		HP01
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 1
	GL (mAOD):	N Coord: 0	E Coord: 0
Date: 09/12/2024	Method: Hand Dug	Logged By: TPB	Scale: 1:10

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water
					0.20	Dark brown organic sand with rootlets. (TOPSOIL)	
0.40	E				0.50	Brownish grey, slightly clayey, gravelly sand. Gravel is subangular, fine to coarse, including brick and concrete. (MADE GROUND)	
						End Of Trial Pit At 0.50 m	
					1.00		
					2.00		

KEY

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
V - Hand Shear Vane kPa

▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING

	Project Title: Alpha House, Wythenshawe		BH01
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 2
	GL (mAOD):	N Coord: 0	E Coord: 0
Date: 09/01/2025	Method: Rotary Drilling	Driller: DSUK Ltd	Logged By: TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
								0.25	Turf over dark brown, slightly gravelly, organic sand with rootlets. Gravel subangular, fine to coarse, including sandstone. (MADE GROUND)		
								0.60			
								1.00	Brownish grey sand and subangular, fine to coarse gravel including limestone, sandstone and brick. (MADE GROUND)		
								1.40			
								2.00	Medium dense, orange brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is subangular to subrounded, fine to coarse, including sandstone. (GLACIAL DEPOSITS)		
								2.20	Firm to stiff, reddish brown, very sandy CLAY. (WEATHERED BOLLIN MUDSTONE MEMBER)		
								3.00			
3.00-4.00	80	60	0					3.50	Extremely weak, highly weathered, reddish brown and occasionally grey mottled MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
								4.00	Extremely weak, partially weathered, reddish brown and grey mottled MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
4.00-5.50 4.80-4.95 PL	93	93	67					5.00			
								5.50	Weak, slightly micaceous, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
6.10-6.32 UCS 5.50-7.00	93	87	67					6.00			
									Borehole Continues		

KEY

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C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Scale: 1:40

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING

Project Title: Alpha House, Wythenshawe

BH01

Project Number: 11380G

Client: Wythenshawe C.H.G.

Sheet 2 Of 2

GL (mAOD):

N Coord: 0

E Coord: 0

Date: 09/01/2025

Method: Rotary Drilling

Driller: DSUK Ltd

Logged By: TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
7.00-8.50 8.20-8.40 PL	90	80	47					8.50	Weak, slightly micaceous, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER) End Of Borehole At 8.50 m		

KEY

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C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Scale: 1:40

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		BH02
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 2
	GL (mAOD):	N Coord: 0	E Coord: 0
Date: 09/01/2025	Method: Rotary Drilling	Driller: DSUK Ltd	Logged By: TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
								0.25	Turf over dark brown, slightly gravelly, organic sand with rootlets. Gravel subangular, fine to coarse, including sandstone. (MADE GROUND)		
								0.60			
								1.00	Dark grey, sandy, subangular, fine to coarse gravel including limestone, sandstone and ash. (MADE GROUND)		
								1.10			
									Medium dense, grey and brown, slightly clayey, fine to coarse SAND. (GLACIAL DEPOSITS)		
								2.00			
									Firm to stiff, brown and grey mottled, slightly silty, slightly sandy CLAY with mudstone lithorelicts. (WEATHERED BOLLIN MUDSTONE MEMBER)		
								2.50			
									Extremely weak, highly weathered, reddish brown and occasionally grey mottled MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
								3.00			
3.00-4.50	100	87	67					3.20	Extremely weak, partially weathered, reddish brown and grey mottled MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
								4.00			
5.06-5.16 PL											
4.50-6.00	100	80	40					5.00			
								6.00			
6.10-6.30 UCS									Weak, slightly micaceous, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
									Borehole Continues		

KEY

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S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Scale: 1:40

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING

Project Title: Alpha House, Wythenshawe		BH02
Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 2 Of 2
GL (mAOD):	N Coord: 0	E Coord: 0
Date: 09/01/2025	Method: Rotary Drilling	Driller: DSUK Ltd
		Logged By: TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
6.70-6.85 PL 6.00-7.50	100	93	47						Weak, slightly micaceous, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
7.50-9.00	100	83	53								
									End Of Borehole At 9.00 m		

KEY

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C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

No Groundwater Encountered

Scale: 1:40

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING

Project Title: Alpha House, Wythenshawe		WS101
Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 1
GL (mAOD): 0	N Coord: 0	E Coord: 0
Date: 28/04/2026	Method:	Driller: SI
		Logged By: TPB

Depth (m)	Type	Test Result	Level	Depth (m)	Description	Water	Standpipe
0.30	E				Brownish grey, sandy, angular to subangular, fine to coarse gravel and cobbles including concrete, brick, metal, wood and plastic. (MADE GROUND)		
0.90	B	N=14 (3,4,3,4)	-0.9	0.90 1.00	Firm, brown and grey mottled, slightly sandy, silty CLAY (GLACIAL DEPOSITS)		
		N=13 (2,3,3,5)	-2.1	2.00 2.10	Firm to stiff, reddish brown, slightly silty CLAY with mudstone lithorelicts. (WEATHERED BOLLIN MUDSTONE MEMBER)		
		pp 50/5mm	-2.9	2.90 3.00	Extremely weak, highly weathered, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
				4.00	End Of Borehole At 3.00 m		

KEY

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C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:30

Water Strikes

Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths

Date	Casing	Water

Chiselling

From	To	Hours

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		WS102
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 1
	GL (mAOD): 0	N Coord: 0	E Coord: 0
Date: 28/04/2026	Method:	Driller: SI	Logged By: TPB

Depth (m)	Type	Test Result	Level	Depth (m)	Description	Water	Standpipe
0.40	E				Brownish grey, sandy, angular to subangular, fine to coarse gravel and cobbles including concrete, brick, metal, wood and plastic. (MADE GROUND)		
		N=7 (1,1,2,3)		1.00			
1.20	B		-1.2	1.20	Firm, brown and grey mottled, slightly sandy, silty CLAY (GLACIAL DEPOSITS)		
		N=8 (1,2,2,3)		2.00	Firm to stiff, reddish brown, slightly silty CLAY with mudstone lithorelicts. (WEATHERED BOLLIN MUDSTONE MEMBER)		
			-2.7	2.70			
		pp 50/85mm	-2.9	2.90	Extremely weak, highly weathered, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
				3.00	End Of Borehole At 2.90 m		
				4.00			

KEY

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W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:30

Water Strikes

Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths

Date	Casing	Water

Chiselling

From	To	Hours

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		WS103
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 1
	GL (mAOD): 0	N Coord: 0	E Coord: 0
Date: 28/04/2026	Method:	Driller: SI	Logged By: TPB

Depth (m)	Type	Test Result	Level	Depth (m)	Description	Water	Standpipe
0.30	E				Brownish grey, sandy, angular to subangular, fine to coarse gravel and cobbles including concrete, brick, metal, wood and plastic. (MADE GROUND)		
0.75	B		-0.75	0.75			
		N=14 (3,3,4,4)		1.00	Firm, brown and grey mottled, slightly sandy, silty CLAY (GLACIAL DEPOSITS)		
			-1.9	1.90			
		N=15 (2,3,4,6)		2.00	Firm to stiff, reddish brown, slightly silty CLAY with mudstone lithorelicts. (WEATHERED BOLLIN MUDSTONE MEMBER)		
			-2.7	2.70			
		pp 50/290mm		3.00	Extremely weak, highly weathered, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
					End Of Borehole At 3.00 m		
				4.00			

KEY

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W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:30

Water Strikes

Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths

Date	Casing	Water

Chiselling

From	To	Hours

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING

Project Title: Alpha House, Wythenshawe			WS104
Project Number: 11380G	Client: Wythenshawe C.H.G.		Sheet 1 Of 1
GL (mAOD): 0	N Coord: 0		E Coord: 0
Date: 28/04/2026	Method:	Driller: SI	Logged By: TPB

Depth (m)	Type	Test Result	Level	Depth (m)	Description	Water	Standpipe
0.50	E		-0.9	0.90	Brownish grey, sandy, angular to subangular, fine to coarse gravel and cobbles including concrete, brick, metal, wood and plastic. (MADE GROUND)		
		N=12 (2,3,3,4)		1.00			
1.20	B		-1.1	1.10	Dark brown, slightly gravelly, sandy clay. Gravel is subangular, fine to coarse, including brick. (MADE GROUND)		
			-1.3	1.30	Firm, brown and grey mottled, slightly sandy, silty CLAY (GLACIAL DEPOSITS)		
		N=22 (3,4,5,10)		2.00	Firm to stiff, reddish brown, slightly silty CLAY with mudstone lithorelicts. (WEATHERED BOLLIN MUDSTONE MEMBER)		
			-2.2	2.20	Extremely weak, highly weathered, reddish brown MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
		pp 65/90mm	-2.7	2.70	End Of Borehole At 2.70 m		
				3.00			
				4.00			

KEY

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S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:30

Water Strikes

Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths

Date	Casing	Water

Chiselling

From	To	Hours

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		WS105
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 1
	GL (mAOD): 0	N Coord: 0	E Coord: 0
Date: 28/04/2026	Method:	Driller: SI	Logged By: TPB

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
0.20	E	N=41 (3,10,20,8)	-1.1		1.00	Brownish grey, sandy, angular to subangular, fine to coarse gravel and cobbles including concrete, brick, metal, wood and plastic. (MADE GROUND)		
1.30	B				1.10	Brownish grey, sandy, variably gravelly clay. Gravel is subangular, fine to coarse, including brick and concrete. (MADE GROUND)		
		N=10 (2,2,3,3)			2.00	End Of Borehole At 2.00 m		
					3.00			
					4.00			

KEY

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W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Hole deflecting, abandoned

Scale: 1:30

Water Strikes

Date	Strike	Level	Minutes	Casing	Sealed

Daily Log Of Depths

Date	Casing	Water

Chiselling

From	To	Hours

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING

Project Title: Alpha House, Wythenshawe		BH101
Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 3
GL (mAOD): 0	N Coord: 0	E Coord: 0
Date: 23/04/2026-24/04/2026	Method:	Driller: DSUK	Logged By:TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
									Open hole.		
								1.00			
								2.00			
								3.00			
3.00-4.50	30	20	0						No recovery.		
								4.00			
									Stiff, reddish brown CLAY with mudstone lithorelicts. (WEATHERED BOLLIN MUDSTONE MEMBER)		
								5.00			
4.50-6.00	73	7	0	60					Extremely weak, highly weathered, reddish brown MUSTONE. Fractures very close, sub-horizontal and 45 degrees, clay lined. (BOLLIN MUDSTONE MEMBER)		
								6.00			
						-6.5		6.50			
6.00-7.50 7.20-7.28 PL	60	20	7	30					Extremely weak, slightly weathered, reddish brown and grey mottled MUSTONE. Fractures very close to close, sub-horizontal and 45 degrees, smooth, clean. (BOLLIN MUDSTONE MEMBER)		
								7.00			
								8.00			
									Borehole Continues		

KEY

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B - Bulk Sample
U - Undisturbed
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S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:50

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		BH101
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 2 Of 3
	GL (mAOD): 0	N Coord: 0	E Coord: 0
Date: 23/04/2026-24/04/2026	Method:	Driller: DSUK	Logged By:TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Depth (m)	Description	Water	Standpipe
7.50-9.00	87	60	27	20			9.00	Extremely weak, slightly weathered, reddish brown and grey mottled MUSTONE. Fractures very close to close, sub-horizontal and 45 degrees, smooth, clean. (BOLLIN MUDSTONE MEMBER)		
9.00-10.50	93	73	20	15			10.00	Extremely weak, reddish brown and grey laminated MUSTONE. Fractures very close to close, sub-horizontal, clean. (BOLLIN MUDSTONE MEMBER)		
10.50-12.00 11.40-11.63 UCS	73	40	33	10			11.00			
12.00-13.50 13.32-13.50 UCS	80	40	20				12.00	Weak, reddish brown, locally thinly laminated MUSTONE. Fractures close to medium, sub-horizontal, clean, stepped. (BOLLIN MUDSTONE MEMBER)		
						-13.1	13.00	Extremely weak, reddish brown and grey laminated MUSTONE. Fractures very close to close, sub-horizontal, clean. (BOLLIN MUDSTONE MEMBER)		
						-13.5	13.10			
13.50-15.00	53	7	0				13.50	Weak, reddish brown, locally thinly laminated MUSTONE. Fractures close , sub-horizontal, clean, undulating. (BOLLIN MUDSTONE MEMBER)		
							14.00	Non-intact MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
15.00-16.50	87	40	13	20			15.00	Extremely weak to weak, reddish brown, locally thinly laminated MUSTONE. Fractures very close to close, sub-horizontal and 60 degrees, clean and locally clay lined, undulating. (BOLLIN MUDSTONE MEMBER)		
							16.00	Borehole Continues		

KEY

D - Disturbed Sample
B - Bulk Sample
U - Undisturbed
W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:50

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING

Project Title: Alpha House, Wythenshawe

BH101

Project Number: 11380G | Client: Wythenshawe C.H.G. | Sheet 3 Of 3

GL (mAOD): 0 | N Coord: 0 | E Coord: 0

Date: 23/04/2026-24/04/2026 | Method: | Driller: DSUK | Logged By:TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Legend	Depth (m)	Description	Water	Standpipe
16.50-18.00	93	53	20	15				17.00	Extremely weak to weak, reddish brown, locally thinly laminated MUSTONE. Fractures very close to close, sub-horizontal and 60 degrees, clean and locally clay lined, undulating. (BOLLIN MUDSTONE MEMBER)		
18.00-19.50	0	0	0			-19.5		18.00	No recovery. (BOLLIN MUDSTONE MEMBER)		
								19.00			
								19.50	End Of Borehole At 19.50 m		
								20.00			
								21.00			
								22.00			
								23.00			
								24.00			

KEY

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C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:50

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		BH102
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 3
	GL (mAOD): 0	N Coord: 0	E Coord: 0
Date: 24/04/2026-27/04/2026	Method:	Driller: DSUK	Logged By:TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Depth (m)	Description	Water	Standpipe
							1.00	Open hole.		
							2.00			
							3.00			
	60	27	0	0		-3.6	3.60	No recovery.		
3.00-4.50							4.00	Extremely weak, slightly weathered, grey and occasionally reddish brown mottled MUSTONE. Fractures very close, sub-horizontal, clay lined. (BOLLIN MUDSTONE MEMBER)		
						-4.45	4.45			
	100	93	33	0			5.00	Extremely weak, reddish brown MUSTONE. Fractures close to medium, sub-horizontal and 45 degrees, clean, undulating. (BOLLIN MUDSTONE MEMBER)		
4.50-6.00							6.00			
	47	20	0	0			7.00	Non-intact MUDSTONE. (BOLLIN MUDSTONE MEMBER)		
6.00-7.50						-7.5	7.50			
							8.00	Weak, reddish brown and occasionally grey laminated MUSTONE. Fractures very close to medium, sub-horizontal and 45 degrees , clean. (BOLLIN MUDSTONE MEMBER)		
								Borehole Continues		

KEY

D - Disturbed Sample
B - Bulk Sample
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W - Water Sample
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C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

REMARKS

Scale: 1:50

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		BH102
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 2 Of 3
	GL (mAOD): 0	N Coord: 0	E Coord: 0
Date: 24/04/2026-27/04/2026	Method:	Driller: DSUK	Logged By: TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Depth (m)	Description	Water	Standpipe
7.50-9.00	100	93	20	0			9.00	Weak, reddish brown and occasionally grey laminated MUSTONE. Fractures very close to medium, sub-horizontal and 45 degrees , clean. (BOLLIN MUDSTONE MEMBER)		
9.00-10.50	77	73	30	0			10.00			
10.50-12.00	100	93	53				11.00			
							12.00			
						-12.1	12.10			
12.50-12.60 PL								Extremely weak, reddish brown and grey laminated MUSTONE. Fractures very close, sub-horizontal, undulating, clean or clay lined. (BOLLIN MUDSTONE MEMBER)		
12.00-13.50	93	80	23	0			13.00			
						-13.5	13.50			
13.50-15.00	100	93	40	0			14.00	Weak, reddish brown and occasionally grey laminated MUSTONE. Fractures very close to medium, sub-horizontal and 45 degrees , clean. (BOLLIN MUDSTONE MEMBER)		
							15.00			
15.45-15.54 PL										
15.00-16.50	67	53	7	0			16.00			
								Borehole Continues		

KEY

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N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:50

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING

Project Title: Alpha House, Wythenshawe

BH102

Project Number: 11380G | Client: Wythenshawe C.H.G. | Sheet 3 Of 3

GL (mAOD): 0 | N Coord: 0 | E Coord: 0

Date: 24/04/2026-27/04/2026 | Method: | Driller: DSUK | Logged By:TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Depth (m)	Description	Water	Standpipe
								Weak, reddish brown and occasionally grey laminated MUSTONE. Fractures very close to medium, sub-horizontal and 45 degrees , clean. (BOLLIN MUDSTONE MEMBER)		
16.50-18.00	97	87	33	0		-17.3	17.00 17.30	Extremely weak, reddish brown and grey laminated MUSTONE. Fractures very close to close, sub-horizontal, undulating, clean. (BOLLIN MUDSTONE MEMBER)		
18.00-19.50	0	0	0	0		-19.5	18.00 19.00 19.50	End Of Borehole At 19.50 m		
							20.00 21.00 22.00 23.00 24.00			

KEY

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W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:50

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		BH103
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 1 Of 3
	GL (mAOD): 0	N Coord: 0	E Coord: 0
Date: 27/04/2026-28/04/2026	Method:	Driller: DSUK	Logged By:TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Depth (m)	Description	Water	Standpipe
							1.00	Open hole.		
							2.00			
							3.00			
3.00-4.50	73	60	20	30		-4.1	4.00 4.10	Destructured, reddish brown MUSTONE. (WEATHERED BOLLIN MUDSTONE MEMBER)		
4.50-6.00	100	33	13	20		-5.9	5.00 5.90	Extremely weak, slightly weathered reddish brown, locally laminated MUSTONE. Fractures very close to close, sub-horizontal and sub-vertical, clean, undulating. (BOLLIN MUDSTONE MEMBER)		
6.00-7.50 7.30-7.50 UCS	100	80	43	15			6.00 7.00	Extremely weak, reddish brown and grey mottled MUSTONE. Fractures very close to close, sub-horizontal, undulating, clean. (BOLLIN MUDSTONE MEMBER)		
							8.00	Borehole Continues		

KEY

D - Disturbed Sample
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S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

REMARKS

Scale: 1:50

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING	Project Title: Alpha House, Wythenshawe		BH103
	Project Number: 11380G	Client: Wythenshawe C.H.G.	Sheet 2 Of 3
	GL (mAOD): 0	N Coord: 0	E Coord: 0
Date: 27/04/2026-28/04/2026	Method:	Driller: DSUK	Logged By: TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Depth (m)	Description	Water	Standpipe
7.50-9.00	100	67	23	20		-8.1	8.10	Extremely weak, reddish brown and grey mottled MUSTONE. Fractures very close to close, sub-horizontal, undulating, clean. (BOLLIN MUDSTONE MEMBER)		
9.00-10.50 9.88-9.97 PL	67	33	13				9.00	Extremely weak, reddish brown and grey laminated MUSTONE. Fractures very close, sub-horizontal, stepped, clean. (BOLLIN MUDSTONE MEMBER)		
10.50-12.00	100	33	23	30			10.00 11.00			
12.00-13.50	93	40	28	20		-11.9	11.90 12.00	Extremely weak, reddish brown and occasionally grey mottled MUSTONE. Fractures very close, sub-horizontal, clean, smooth. (BOLLIN MUDSTONE MEMBER)		
13.50-15.00	100	73	13	25			13.00 14.00 15.00			
15.00-16.50	93	67	27	15		-15.4	15.40 16.00	Weak, reddish brown MUSTONE. Fractures close to medium, sub-horizontal and sub-vertical, clean. (BOLLIN MUDSTONE MEMBER) Borehole Continues		

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N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:50

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths

Date	Casing	Water

Flushing Medium

From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

WML CONSULTING

Project Title: Alpha House, Wythenshawe

BH103

Project Number: 11380G | Client: Wythenshawe C.H.G. | Sheet 3 Of 3

GL (mAOD): 0 | N Coord: 0 | E Coord: 0

Date: 27/04/2026-28/04/2026 | Method: | Driller: DSUK | Logged By: TPB

Core/Samples	TCR	SCR	RQD	FI	ISPT	Level	Depth (m)	Description	Water	Standpipe
16.50-18.00	93	53	31	12			17.00	Weak, reddish brown MUSTONE. Fractures close to medium, sub-horizontal and sub-vertical, clean. (BOLLIN MUDSTONE MEMBER)		
18.00-18.17 UCS							18.00			
						-18.35	18.35			
18.00-19.50	0	0	0	25			19.00	Extremely weak, reddish brown and grey laminated MUSTONE. Fractures very close , sub-horizontal, stepped, clean. (BOLLIN MUDSTONE MEMBER)		
						-19.5	19.50	End Of Borehole At 19.50 m		
							20.00			
							21.00			
							22.00			
							23.00			
							24.00			

KEY

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W - Water Sample
S - Standard Penetration Test
C - Cone Penetration Test
N - Penetration Test 'N' Value
V - Hand Shear Vane kPa
▽ - Groundwater Strike
▼ - Groundwater Level

AGS

REMARKS

Scale: 1:50

Water Strikes

Date	Strike	Level	Minutes	Casing	Remarks

Daily Log Of Depths | Flushing Medium

Date	Casing	Water	From	To	Type

Printed By GeoLogs (www.GeoLogs.com)

APPENDIX 03

Geotechnical Testing Results

LABORATORY REPORT

Contract Number: PSL24/9255

Report Date: 16 January 2025

Client's Reference: 11380G

Client Name: WML Consultants
Third Floor South
Metropolitan House
Station Road
Cheadle Hulme
SK8 7AZ

For the attention of: Tom Booth

Contract Title: Alpha House

Date Received: 13/12/2024
Date Commenced: 13/12/2024
Date Completed: 16/1/2025

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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

Checked and Approved Signatories:

A Watkins (Managing Director)	R Berriman (Associate Director)	S Royle (Laboratory Manager)
L Knight (Assistant Laboratory Manager)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

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DN4 0AR
Tel: 01302 768098
Email: rberriman@prosoils.co.uk
awatkins@prosoils.co.uk

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
WS01		B	0.30	0.60	MADE GROUND dark grey clayey gravelly sand of ash.
WS01		D	1.20		Brown mottled grey sandy slightly gravelly CLAY.
WS02		B	0.30	0.60	MADE GROUND brown sandy slightly gravelly clay.
WS02		D	1.20		Brown mottled grey sandy slightly gravelly CLAY.
WS03		B	0.40	0.60	MADE GROUND brown sandy gravelly clay.
WS03		D	1.70		Brown mottled grey sandy slightly gravelly CLAY.
WS05		D	1.30		Brown mottled grey sandy slightly gravelly CLAY.

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Alpha House

Contract No:

PSL24/9255

Client Ref:

SUMMARY OF SOIL CLASSIFICATION TESTS

BS 1377 - Part 2 : 2022 in accordance with BS EN ISO 17892 (as below)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content %	Linear Shrinkage	Particle Density Mg/m^3	Liquid Limit %	Plastic Limit %	Plasticity Index %	Passing 0.425mm %	Remarks
WS01		D	1.20		16.4			30	16	14	85	Low Plasticity CIL
WS02		D	1.20		18.2			32	16	16	88	Low Plasticity CIL
WS03		D	1.70		16.5			34	17	17	76	Low Plasticity CIL
WS05		D	1.30		17.4			33	16	17	91	Low Plasticity CIL

Water Content - BS 1377 - Part 2 : 2022 : Clause 4 in accordance with BS EN ISO 17892 - 1 : 2014 + A1 : 2022
Linear Shrinkage - BS 1377 - Part 2 : 2022 : Clause 7
Particle Density (Gas Jar method) - BS 1377 - Part 2 : 2022 : Clause 9
Liquid, Plastic Limit & Plasticity Index - BS 1377 - Part 2 : 2022 : Clause 5 & 6 in accordance with BS EN ISO 17892 - 12 : 2018 + A2 : 2022

SYMBOLS : NP = Non Plastic

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Alpha House

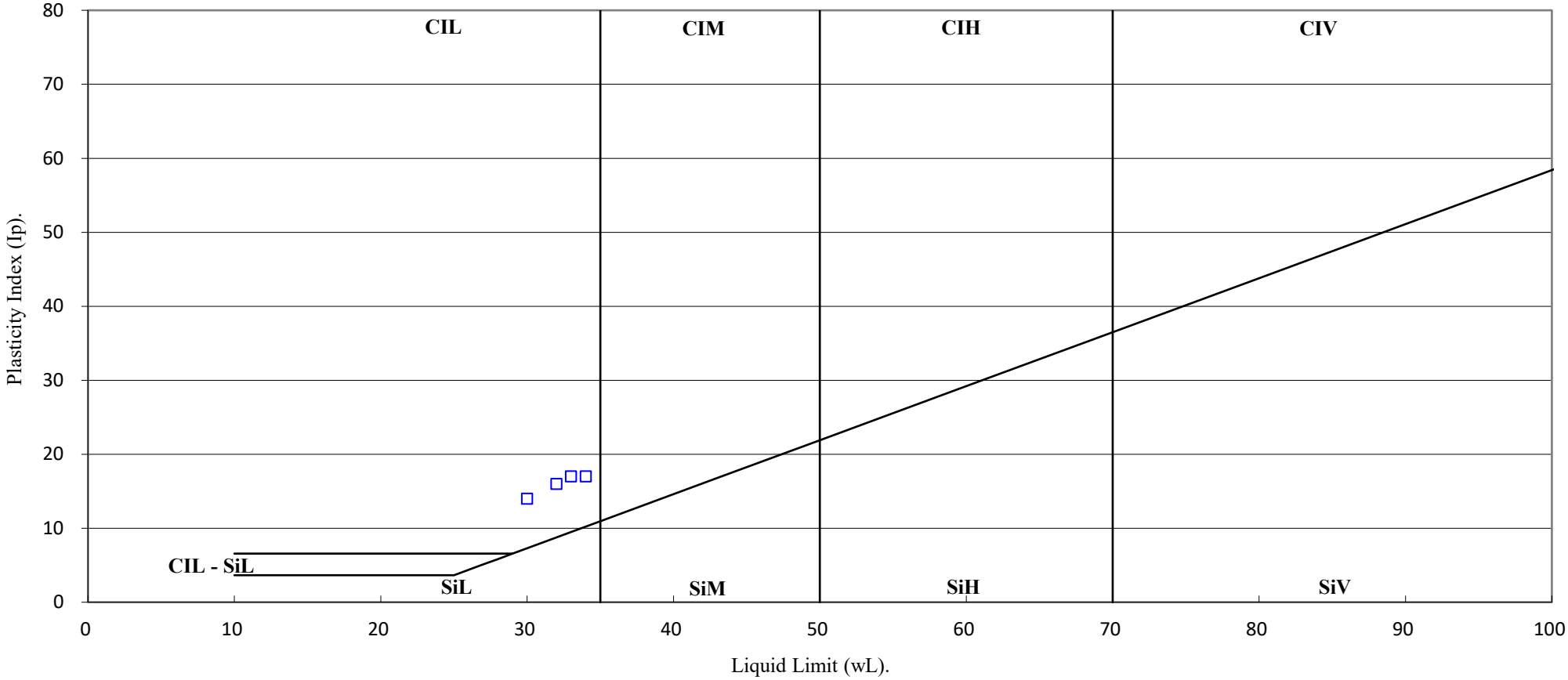
Contract No:

PSL24/9255

Client Ref:

PLASTICITY CHART

BS EN ISO 14688-2:2017 Clause 4.4



UKAS TESTING 4043 / PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	**Alpha House**	**Contract No:** **PSL24/9255** **Client Ref:**

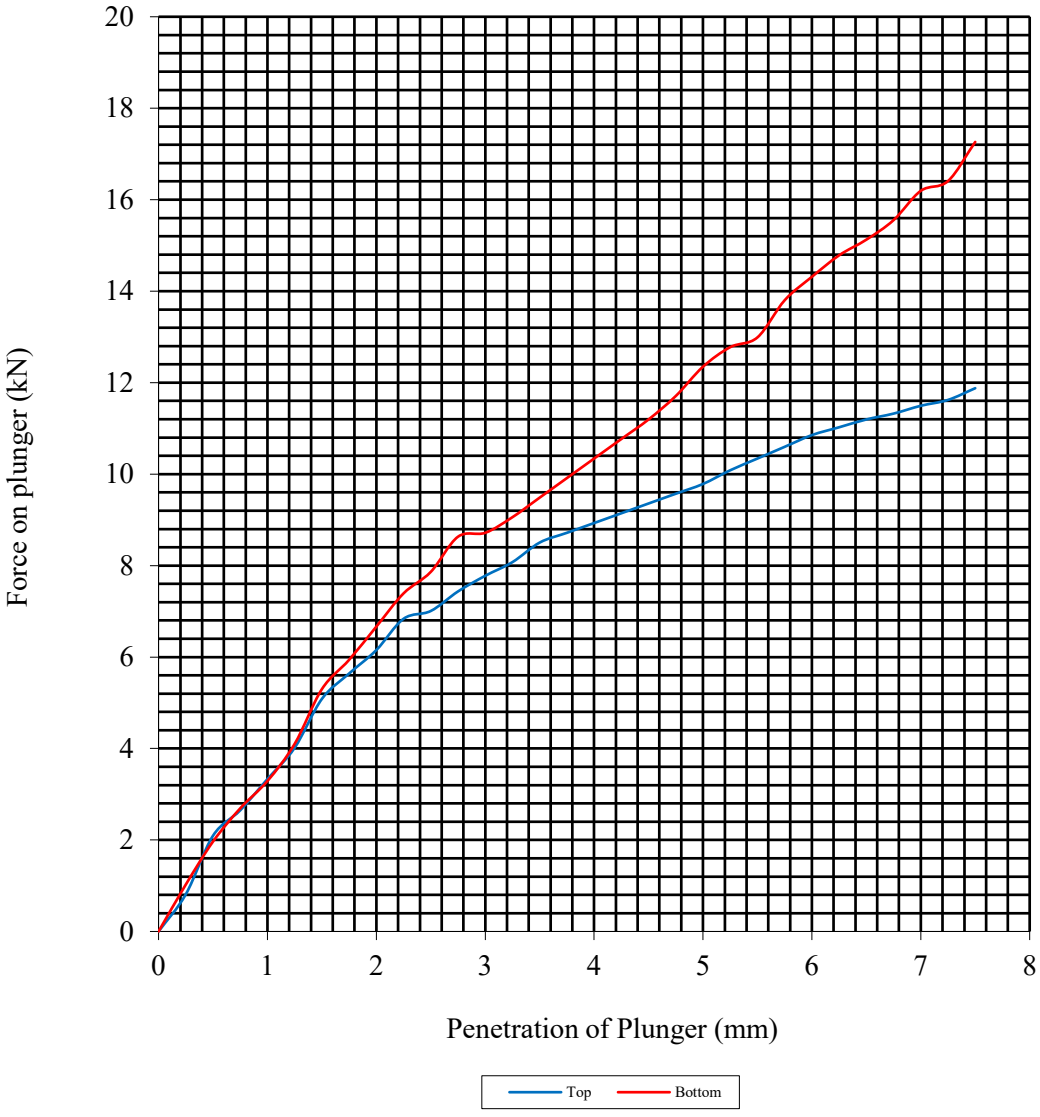
CALIFORNIA BEARING RATIO (CBR)

BS 1377 - Part 2 : Clause 15 : 2022

Hole Number: WS01 **Top Depth (m):** 0.30

Sample Number: **Base Depth (m):** 0.60

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Water Content %		C.B.R. Value %	
Water Content:	11.8	Surcharge Kg:	4.20	Sample Top	11.7	Sample Top	53.1
Bulk Density Mg/m3:	1.98	Soaking Time hrs	0	Sample Bottom	11.7	Sample Bottom	61.7
Dry Density Mg/m3:	1.77	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			0				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Alpha House

Contract No: PSL24/9255

Client Ref:

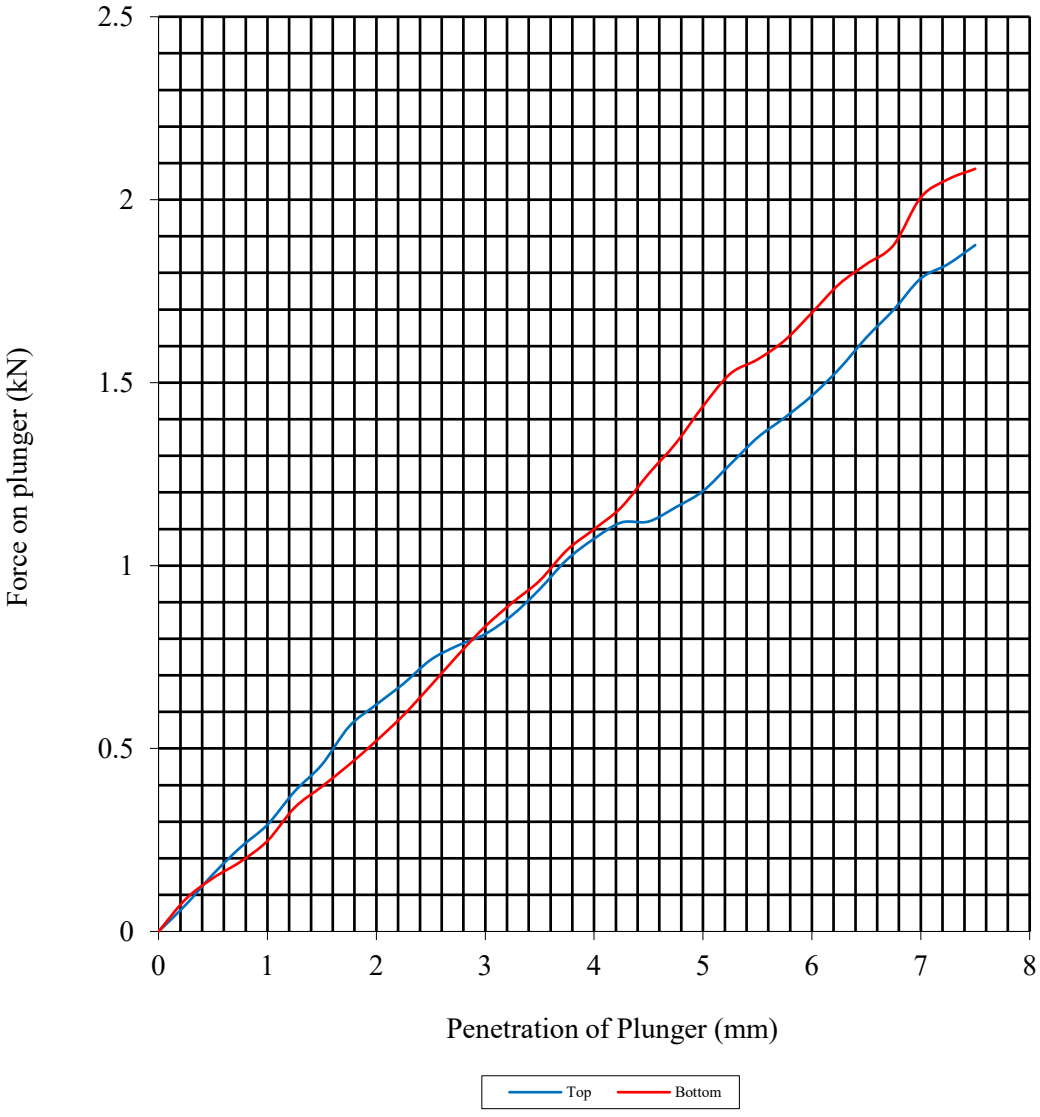
CALIFORNIA BEARING RATIO (CBR)

BS 1377 - Part 2 : Clause 15 : 2022

Hole Number: WS02 **Top Depth (m):** 0.30

Sample Number: **Base Depth (m):** 0.60

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Water Content %		C.B.R. Value %	
Water Content:	17.5	Surcharge Kg:	4.20	Sample Top	17.5	Sample Top	6.0
Bulk Density Mg/m3:	2.13	Soaking Time hrs	0	Sample Bottom	17.5	Sample Bottom	7.2
Dry Density Mg/m3:	1.81	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			3				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Alpha House

Contract No: PSL24/9255

Client Ref:

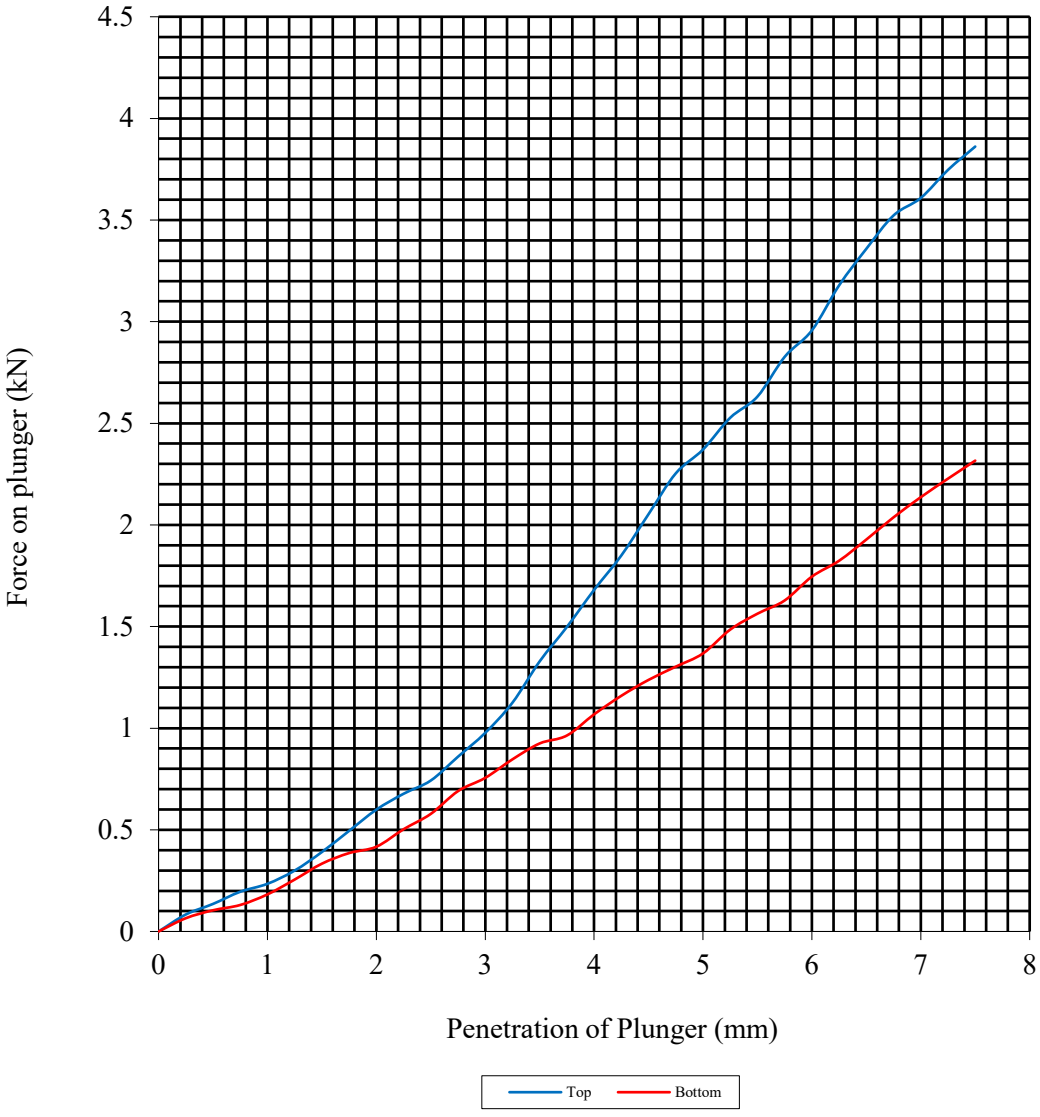
CALIFORNIA BEARING RATIO (CBR)

BS 1377 - Part 2 : Clause 15 : 2022

Hole Number: WS03 **Top Depth (m):** 0.40

Sample Number: **Base Depth (m):** 0.60

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Water Content %		C.B.R. Value %	
Water Content:	11.1	Surcharge Kg:	4.20	Sample Top	11.1	Sample Top	11.9
Bulk Density Mg/m3:	2.24	Soaking Time hrs	0	Sample Bottom	11.1	Sample Bottom	6.8
Dry Density Mg/m3:	2.02	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			20				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Alpha House

Contract No: PSL24/9255

Client Ref:

LABORATORY REPORT

Contract Number: PSL25/0287

Report Date: 13 February 2025

Client's Reference: 11380G

Client Name: WML Consultants
Third Floor South
Metropolitan House
Station Road
Cheadle Hulme
SK8 7AZ

For the attention of: Tom Booth

Contract Title: Alpha House

Date Received: 15/1/2025
Date Commenced: 15/1/2025
Date Completed: 13/2/2025

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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Checked and Approved Signatories:

A Watkins (Managing Director)
R Berriman (Associate Director)
S Royle (Laboratory Manager)
L Knight (Assistant Laboratory Manager)
S Eyre (Senior Technical Coordinator)
T Watkins (Senior Technician)

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awatkins@prosoils.co.uk

SUMMARY OF POINT LOAD TEST RESULTS

ISRM Suggested Methods : 2007

Borehole Number	Depth (m)	Sample Ref	Test Type	Orientation	Dimensions (mm)		Area	D_e^2	D_e	Failure Load (P)		I_s	Corr Fac	I_{s50}	Failure Type	Remarks
				Par / Perp	W	D	(mm2)		(mm)	(Mpa)	(kN)	(MPa)	F	(MPa)		
BH01	4.80		A	Perp	85	47	3995	5086.59	71.32	-	0.13	0.03	1.173	0.03	Valid	
BH01	6.10		A	Perp	86	48	4128	5255.93	72.50	-	0.26	0.05	1.182	0.06	Valid	
BH01	8.20		A	Perp	87	46	4002	5095.50	71.38	-	0.33	0.06	1.174	0.08	Valid	
BH02	5.06		A	Perp	85	43	3655	4653.69	68.22	-	0.44	0.09	1.150	0.11	Valid	
BH02	6.10		A	Perp	86	50	4300	5474.93	73.99	-	0.34	0.06	1.193	0.07	Valid	
BH02	6.70		A	Perp	86	36	3096	3941.95	62.78	-	0.91	0.23	1.108	0.26	Valid	

Note All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random

A = Axial, D = Diametral, I = Irregular

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Alpha House

Contract No:

PSL25/0287

Client Ref:

11380G

SUMMARY OF POINT LOAD TEST RESULTS

ISRM Suggested Methods : 2007

Borehole Number	Depth (m)	Sample Ref	Test Type	Orientation	Dimensions (mm)		D_e^2	D_e	Failure Load		I_s	Corr Fac	I_{s50}	Failure Type	Remarks
				Par / Perp	L	D		(mm)	(Mpa)	(kN)	(MPa)	F	(MPa)		
BH01	4.80		D	Par	-	85	7225	85.00	-	0.21	0.029	1.270	0.04	Valid	
BH01	6.10		D	Par	-	86	7396	86.00	-	0.12	0.016	1.276	0.02	Valid	
BH01	8.20		D	Par	-	87	7569	87.00	-	0.24	0.032	1.283	0.04	Valid	
BH02	5.06		D	Par	-	85	7225	85.00	-	0.11	0.015	1.270	0.02	Valid	
BH02	6.10		D	Par	-	86	7396	86.00	-	0.36	0.049	1.276	0.06	Valid	
BH02	6.70		D	Par	-	86	7396	86.00	-	0.43	0.058	1.276	0.07	Valid	

Note All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Alpha House

Contract No:

PSL25/0287

Client Ref:

11380G

Test Amendment Notice

Date:	13.02.25
PSL Contract Reference:	0287
PSL Technician/Test Area:	HJ - Rockroom
Contract Title:	Alpha House
Engineer/Client Details:	WML - Tom Booth
Sample Details:	BH01 @ 8.20 - 8.40 BH02 @ 6.70 - 6.85
Testing required:	UCS

Details of Unsuitability

The above sample cannot be performed due to the following reasons:

1 The Sample has not been received

2 There is insufficient material for the required testing

Sample Mass received (g) .....

Sample Mass required (g) .....

3 The sample has been previsouly tested

4 The sample has been misplaced in the laboratory

5 The sample is unsuitable for testing becaus the cores are at insufficient dimensions due to fragmentation.

Please advise action required.

1 Perform the testing on the following sampl.....

2 Combine samples has follows for testing: .....

3 Perform the following alternative testing: .....

4 Perform a non standard test:

5 Take no further action

6 Undertake the following instructions: .....

Signed: Date:

Project Engineer

PSL

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client WML Consulting Ltd

Address Third Floor South
Metropolitan House
Station Road
Cheadle Hulme
Cheshire
SK8 7AZ

Contract Alpha House

Job Number MRN 26079/5
Date of Issue 21 May 2026

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

CLIENT	WML Consulting Ltd
SITE	Alpha House
JOB NUMBER	MRN 26079/5

DATE SAMPLED	28-Apr-26	DATE RECEIVED	05-May-26
DATE TESTED	13-May-26	SAMPLED BY	Client

MATERIAL	Rock Core
ADVISED SOURCE	Site Investigation

Sample Number	Sample Label	Test Type*	D (mm)	W** (mm)	Load (P) (kN)	D_e^2 (mm^2)	D_e (mm)	Is (MPa)	F	$I_{s(50)}$ (MPa)
6096601	BH101 7.20-7.28	D	85.7		0.2	7344.49	85.70	0.03	1.27	0.03
6096604	BH102 12.50-12.60	D	84.8		0.1	7191.04	84.80	0.01	1.27	0.02
6096605	BH102 15.45-15.54	D	83.9		0.2	7039.21	83.90	0.03	1.26	0.04
6096607	BH103 9.88-9.97	D	87.2		0.1	7603.84	87.20	0.01	1.28	0.02
6096601	BH101 7.20-7.28	A	38.5	85.7	0.9	4200.99	64.82	0.21	1.12	0.24
6096604	BH102 12.50-12.60	A	68.4	84.8	0.1	7385.20	85.94	0.01	1.28	0.02
6096605	BH102 15.45-15.54	A	63.0	83.9	1.1	6729.96	82.04	0.16	1.25	0.20
6096607	BH103 9.88-9.97	A	53.4	87.2	0.4	5928.81	77.00	0.07	1.21	0.08

Test Type *			
A	Axial Test	D	Diametral Test
B	Block Test	I	Irregular Lump Test

**W Entry required if test type is not Diametral

REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Director)

DATE 21-May-26

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS

ASTM D7012 - 23 Method C

CLIENT	WML Consulting Ltd
SITE	Alpha House
JOB NUMBER	MRN 26079/5

DATE RECEIVED	05-May-26	DATE SAMPLED	28-Apr-26	
DATE TESTED	13-May-26	SAMPLED BY	Client	
MATERIAL TESTED	Rock Core		LOADING RATE	1 MPa/s

Sample Number	Sample Label	Tested By	Diameter (mm)	Length* (mm)	L/D Ratio	Moisture Condition	Method of Prep-aration	Load at Failure (kN)	Compressive Strength (N/mm^2)	Description after Test
6096602	BH101 11.40-11.63	MR	85	170	2.00		ASTM D4543	35.4	**6.2**	Split vertically top to bottom with no visible end defects
6096603	BH101 13.32-13.50	MR	85	169	1.99		ASTM D4543	33.9	**6.0**	Split vertically top to bottom with no visible end defects
6096606	BH1-3 7.30-7/50	MR	85	170	2.00		ASTM D4543	38.7	**6.8**	Split vertically top to bottom with no visible end defects
6096608	BH103 18.00-18.17	MR	85	170	2.00		ASTM D4543	41.2	**7.3**	Split vertically top to bottom with no visible end defects

Comments / Deviation from standard method / Abnormalities noted during visual inspection.
*Length after specimen preparation

NAME O.P. Davies BA (Hons) (Director) SIGNED DATE: 21-May-26

APPENDIX 04

Chemical Analytical Results

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/12048
Issue Number: 1 **Date:** 18 December, 2024

Client:
WML Consulting Ltd
Third Floor South
Metropolitan House
Station Rd
Cheadle Hulme
Cheshire
SK8 7AZ

Project Manager: Tom Booth
Project Name: Alpha House
Project Ref: 11380G
Order No: 11380G
Date Samples Received: 10/12/24
Date Instructions Received: 11/12/24
Date Analysis Completed: 18/12/24

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 24/12048

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	24/12048/1	24/12048/2	24/12048/3	24/12048/4	24/12048/5	24/12048/6	24/12048/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS01	WS01	WS01	WS02	WS02	WS03	WS03			
Depth to Top	0.10	0.40	1.30	0.20	1.40	0.20	2.50			
Depth To Bottom										
Date Sampled	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES	SOIL			
Sample Matrix Code	4AE	4AE	5A	5AB	6A	6ABE	6			
% Stones >10mm$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	7.89	8.64	7.96	8.59	7.81	8.23	8.53	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.03	0.03	0.03	<0.01	<0.01	<0.01	<0.01	g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$$^{M\#}$	580	1400	-	420	-	590	-	mg/kg	200	A-T-028s
Sulphur (total)$_D$	296	1420	-	261	-	298	-	mg/kg	50	A-T-024s
Cyanide (total)$_A$$^{M\#}$	<1	<1	-	<1	-	<1	-	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	-	<0.2	-	<0.2	-	mg/kg	0.2	A-T-050s
Organic Matter$_D$$^{M\#}$	3.3	7.6	-	4.9	-	3.3	-	% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	4	3	-	5	-	6	-	mg/kg	1	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	<1.0	-	<1.0	-	<1.0	-	mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	<0.5	-	<0.5	-	0.5	-	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	15	16	-	24	-	24	-	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	-	<1	-	<1	-	mg/kg	1	A-T-040s
Lead$_D$$^{M\#}$	31	29	-	54	-	63	-	mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	-	<0.17	-	<0.17	-	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	10	10	-	15	-	14	-	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	-	<1	-	<1	-	mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	17	33	-	28	-	20	-	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	46	44	-	47	-	77	-	mg/kg	5	A-T-024s

Envirolab Job Number: 24/12048

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	24/12048/1	24/12048/2	24/12048/3	24/12048/4	24/12048/5	24/12048/6	24/12048/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS01	WS01	WS01	WS02	WS02	WS03	WS03			
Depth to Top	0.10	0.40	1.30	0.20	1.40	0.20	2.50			
Depth To Bottom										
Date Sampled	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES	SOIL			
Sample Matrix Code	4AE	4AE	5A	5AB	6A	6ABE	6			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	-	NAD	-	NAD	-			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	-	N/A	-	N/A	-			A-T-045

Envirolab Job Number: 24/12048

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	24/12048/1	24/12048/2	24/12048/3	24/12048/4	24/12048/5	24/12048/6	24/12048/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS01	WS01	WS01	WS02	WS02	WS03	WS03			
Depth to Top	0.10	0.40	1.30	0.20	1.40	0.20	2.50			
Depth To Bottom										
Date Sampled	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES	SOIL			
Sample Matrix Code	4AE	4AE	5A	5AB	6A	6ABE	6			
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	12.8	-	<0.01	-	<0.01	-	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	0.55	-	<0.01	-	<0.01	-	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	15	-	<0.02	-	<0.02	-	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.10	37	-	0.08	-	0.16	-	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.13	37.3	-	0.11	-	0.16	-	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.14	46.2	-	0.11	-	0.17	-	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.10	28.7	-	0.10	-	0.11	-	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	16.6	-	<0.07	-	<0.07	-	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.14	52.8	-	0.10	-	0.19	-	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	5.07	-	<0.04	-	<0.04	-	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.15	87.4	-	0.15	-	0.25	-	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	8.08	-	<0.01	-	<0.01	-	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.10	27.6	-	0.10	-	0.11	-	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	1.14	-	<0.03	-	<0.03	-	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.09	62.7	-	0.10	-	0.10	-	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	0.15	85.8	-	0.14	-	0.23	-	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	1.10	525	-	0.99	-	1.48	-	mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/12048

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	24/12048/1	24/12048/2	24/12048/3	24/12048/4	24/12048/5	24/12048/6	24/12048/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS01	WS01	WS01	WS02	WS02	WS03	WS03			
Depth to Top	0.10	0.40	1.30	0.20	1.40	0.20	2.50			
Depth To Bottom										
Date Sampled	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24			
Sample Type	SOIL - ES	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES	SOIL			
Sample Matrix Code	4AE	4AE	5A	5AB	6A	6ABE	6			
TPH CWG with Clean Up										
Ali >C5-C6$_A$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	-	<10	-	-	-	<1	-	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	-	<10	-	-	-	<1	-	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	-	39	-	-	-	<1	-	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	-	46	-	-	-	1	-	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	-	606	-	-	-	25	-	mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	690	-	-	-	26	-	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	-	<10	-	-	-	<1	-	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	-	<10	-	-	-	<1	-	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	-	128	-	-	-	1	-	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	-	602	-	-	-	5	-	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	-	2660	-	-	-	20	-	mg/kg	1	A-T-055s
Total Aromatics$_A$	-	3400	-	-	-	26	-	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_A$	-	4090	-	-	-	52	-	mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s

Envirolab Job Number: 24/12048

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	24/12048/8	24/12048/9	24/12048/10	24/12048/11	24/12048/12	24/12048/13		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS04	WS04	WS04	WS05	WS05	HP01				
Depth to Top	0.10	0.40	1.80	0.10	0.50	0.40				
Depth To Bottom										
Date Sampled	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	6AE	4ABDE	6A	6AE	6ABE	6AE				
% Stones >10mm$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		% w/w	0.1	A-T-044
pH$_D^{M\#}$	7.52	8.49	7.82	8.68	8.44	8.21		pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D^{M\#}$	<0.01	0.02	<0.01	0.06	0.03	<0.01		g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D^{M\#}$	970	1200	-	720	780	320		mg/kg	200	A-T-028s
Sulphur (total)$_D$	534	787	-	329	395	207		mg/kg	50	A-T-024s
Cyanide (total)$_A^{M\#}$	<1	<1	-	<1	<1	<1		mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	-	<0.2	<0.2	<0.2		mg/kg	0.2	A-T-050s
Organic Matter$_D^{M\#}$	7.2	1.3	-	3.8	4.7	3.4		% w/w	0.1	A-T-032s
Arsenic$_D^{M\#}$	5	3	-	5	5	5		mg/kg	1	A-T-024s
Boron (water soluble)$_D^{M\#}$	<1.0	<1.0	-	<1.0	<1.0	<1.0		mg/kg	1	A-T-027s
Cadmium$_D^{M\#}$	0.5	0.9	-	<0.5	<0.5	<0.5		mg/kg	0.5	A-T-024s
Copper$_D^{M\#}$	52	19	-	18	19	37		mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	-	<1	<1	<1		mg/kg	1	A-T-040s
Lead$_D^{M\#}$	71	67	-	27	29	45		mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	-	<0.17	<0.17	<0.17		mg/kg	0.17	A-T-024s
Nickel$_D^{M\#}$	15	13	-	12	12	24		mg/kg	1	A-T-024s
Selenium$_D^{M\#}$	<1	<1	-	<1	<1	<1		mg/kg	1	A-T-024s
Vanadium$_D^{M\#}$	23	21	-	20	20	27		mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	113	60	-	50	48	71		mg/kg	5	A-T-024s

Envirolab Job Number: 24/12048

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	24/12048/8	24/12048/9	24/12048/10	24/12048/11	24/12048/12	24/12048/13		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS04	WS04	WS04	WS05	WS05	HP01				
Depth to Top	0.10	0.40	1.80	0.10	0.50	0.40				
Depth To Bottom										
Date Sampled	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	6AE	4ABDE	6A	6AE	6ABE	6AE				
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	-	NAD	NAD	NAD				A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-				A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-				A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	-	N/A	N/A	N/A				A-T-045

Envirolab Job Number: 24/12048

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	24/12048/8	24/12048/9	24/12048/10	24/12048/11	24/12048/12	24/12048/13		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS04	WS04	WS04	WS05	WS05	HP01				
Depth to Top	0.10	0.40	1.80	0.10	0.50	0.40				
Depth To Bottom										
Date Sampled	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	6AE	4ABDE	6A	6AE	6ABE	6AE				
PAH-16MS										
Acenaphthene$_A^{M\#}$	0.01	<0.01	-	0.06	0.27	<0.01		mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	-	0.02	0.02	<0.01		mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	-	0.12	0.39	<0.02		mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.12	<0.04	-	0.94	1.25	0.14		mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.12	<0.04	-	1.39	1.82	0.18		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.12	<0.05	-	1.42	1.71	0.19		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.07	<0.05	-	1.16	1.54	0.13		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	-	0.47	0.60	<0.07		mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.13	<0.06	-	1.10	1.45	0.19		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	-	0.16	0.20	<0.04		mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.22	<0.08	-	1.57	2.60	0.22		mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	-	0.02	0.18	<0.01		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.07	<0.03	-	1.10	1.46	0.13		mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	-	<0.03	0.06	<0.03		mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.12	<0.03	-	0.38	1.54	0.11		mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	0.19	<0.07	-	1.57	2.31	0.20		mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	1.17	<0.08	-	11.5	17.4	1.49		mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/12048

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	24/12048/8	24/12048/9	24/12048/10	24/12048/11	24/12048/12	24/12048/13		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS04	WS04	WS04	WS05	WS05	HP01				
Depth to Top	0.10	0.40	1.80	0.10	0.50	0.40				
Depth To Bottom										
Date Sampled	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24	09-Dec-24				
Sample Type	SOIL - ES	SOIL - ES	SOIL	SOIL - ES	SOIL - ES	SOIL - ES				
Sample Matrix Code	6AE	4ABDE	6A	6AE	6ABE	6AE				
TPH CWG with Clean Up										
Ali >C5-C6$_A$	-	<0.01	-	<0.01	-	<0.01		mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	-	<0.01	-	<0.01	-	<0.01		mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	-	<1	-	<1	-	<1		mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	-	<1	-	<1	-	<1		mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	-	<1	-	2	-	<1		mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	-	3	-	7	-	<1		mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	-	15	-	33	-	15		mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	18	-	43	-	15		mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	-	<0.01	-	<0.01	-	<0.01		mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	-	<0.01	-	<0.01	-	<0.01		mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	-	<1	-	<1	-	<1		mg/kg	1	A-T-055s
Aro >C10-C12$_A$	-	<1	-	<1	-	<1		mg/kg	1	A-T-055s
Aro >C12-C16$_A$	-	<1	-	4	-	4		mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	-	2	-	32	-	9		mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	-	5	-	226	-	28		mg/kg	1	A-T-055s
Total Aromatics$_A$	-	8	-	262	-	41		mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_A$	-	26	-	305	-	57		mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	-	<0.01	-	<0.01	-	<0.01		mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	-	<0.01	-	<0.01	-	<0.01		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	-	<0.01	-	<0.01	-	<0.01		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	-	<0.01	-	<0.01	-	<0.01		mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	-	<0.01	-	<0.01	-	<0.01		mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	-	<0.01	-	<0.01	-	<0.01		mg/kg	0.01	A-T-022s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: WML Consulting Ltd, Third Floor South, Metropolitan House, Station Rd, Cheadle Hulme, Cheshire, SK8 7AZ

Project: Alpha House

Clients Project No: 11380G

Project No: 24/12048

Date Received: 11/12/2024 (am)

Cool Box Temperatures (°C): 10.5 & 11.4

NO DEVIATIONS IDENTIFIED

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

Envirolab Analysis Dates

Lab Sample ID	24/12048/1	24/12048/2	24/12048/3	24/12048/4	24/12048/5	24/12048/6	24/12048/7	24/12048/8	24/12048/9	24/12048/10	24/12048/11	24/12048/12
Client Sample No												
Client Sample ID/Depth	WS01 0.10m	WS01 0.40m	WS01 1.30m	WS02 0.20m	WS02 1.40m	WS03 0.20m	WS03 2.50m	WS04 0.10m	WS04 0.40m	WS04 1.80m	WS05 0.10m	WS05 0.50m
Date Sampled	09/12/24	09/12/24	09/12/24	09/12/24	09/12/24	09/12/24	09/12/24	09/12/24	09/12/24	09/12/24	09/12/24	09/12/24
A-T-019s	16/12/2024	18/12/2024		16/12/2024		16/12/2024		16/12/2024	16/12/2024		16/12/2024	16/12/2024
A-T-022s		13/12/2024				17/12/2024			13/12/2024		13/12/2024	
A-T-024s	16/12/2024	16/12/2024		16/12/2024		16/12/2024		16/12/2024	16/12/2024		16/12/2024	16/12/2024
A-T-026s	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024
A-T-027s	16/12/2024	16/12/2024		16/12/2024		16/12/2024		16/12/2024	16/12/2024		16/12/2024	16/12/2024
A-T-028s	16/12/2024	16/12/2024		16/12/2024		16/12/2024		16/12/2024	16/12/2024		16/12/2024	16/12/2024
A-T-031s	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024	16/12/2024
A-T-032s	16/12/2024	16/12/2024		16/12/2024		16/12/2024		16/12/2024	16/12/2024		16/12/2024	16/12/2024
A-T-040s	16/12/2024	16/12/2024		16/12/2024		17/12/2024		16/12/2024	16/12/2024		16/12/2024	16/12/2024
A-T-042sTCN	16/12/2024	16/12/2024		16/12/2024		16/12/2024		16/12/2024	16/12/2024		16/12/2024	16/12/2024
A-T-044	13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024
A-T-045	12/12/2024	12/12/2024		12/12/2024		12/12/2024		12/12/2024	12/12/2024		12/12/2024	12/12/2024
A-T-050s	16/12/2024	16/12/2024		16/12/2024		16/12/2024		16/12/2024	16/12/2024		16/12/2024	16/12/2024
A-T-055s		13/12/2024				13/12/2024			13/12/2024		13/12/2024	
Calc-As Recd		13/12/2024				17/12/2024			13/12/2024		13/12/2024	

Lab Sample ID	24/12048/13
Client Sample No	
Client Sample ID/Depth	HP01 0.40m
Date Sampled	09/12/24
A-T-019s	16/12/2024
A-T-022s	13/12/2024
A-T-024s	16/12/2024
A-T-026s	16/12/2024
A-T-027s	16/12/2024
A-T-028s	16/12/2024
A-T-031s	16/12/2024
A-T-032s	16/12/2024
A-T-040s	16/12/2024
A-T-042sTCN	16/12/2024
A-T-044	13/12/2024
A-T-045	12/12/2024
A-T-050s	16/12/2024
A-T-055s	13/12/2024
Calc-As Recd	13/12/2024

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

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 26/05250
Issue Number: 1 **Date:** 01 June, 2026

Client:
WML Consulting Ltd
Third Floor South
Metropolitan House
Station Rd
Cheadle Hulme
Cheshire
SK8 7AZ

Project Manager: Tom Booth
Project Name: Alpha House
Project Ref: 11380G
Order No: 11380G
Date Samples Received: 29/04/26
Date Instructions Received: 30/04/26
Date Analysis Completed: 01/06/26

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 26/05250

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	26/05250/1	26/05250/2	26/05250/3	26/05250/4	26/05250/5	26/05250/6	26/05250/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS101	WS101	WS102	WS102	WS103	WS103	WS104			
Depth to Top	0.30	0.90	0.40	1.20	0.30	0.75	0.50			
Depth To Bottom										
Date Sampled	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26			
Sample Type	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES			
Sample Matrix Code	4AE	5A	4AE	5AE	4AE	6AE	4AE			
% Stones >10mm$_A$	28.8	<0.1	22.9	<0.1	16.6	1.6	6.2	% w/w	0.1	A-T-044
pH$_D$[M#]	10.22	-	10.29	-	10.25	-	10.39	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$[M#]	1.10	-	1.34	-	1.19	-	1.57	g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$[M#]	17000	-	31000	-	21000	-	32000	mg/kg	200	A-T-028s
Sulphur (total)$_D$	6600	-	9480	-	6640	-	11100	mg/kg	50	A-T-024s
Cyanide (total)$_A$[M#]	<1	-	<1	-	<1	-	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	-	<0.2	-	<0.2	-	<0.2	mg/kg	0.2	A-T-050s
Organic Matter$_D$[M#]	2.06	-	1.57	-	1.83	-	1.56	% w/w	0.14	A-T-032s
Arsenic$_D$[M#]	3	-	2	-	3	-	4	mg/kg	1	A-T-024s
Boron (water soluble)$_D$[M#]	<1.0	-	<1.0	-	<1.0	-	1.0	mg/kg	1	A-T-027s
Cadmium$_D$[M#]	<1.0	-	<1.0	-	<1.0	-	<1.0	mg/kg	1	A-T-024s
Copper$_D$[M#]	16	-	13	-	20	-	17	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	-	<1	-	<1	-	<1	mg/kg	1	A-T-040s
Lead$_D$[M#]	43	-	35	-	37	-	116	mg/kg	1	A-T-024s
Mercury$_D$	<0.17	-	<0.17	-	<0.17	-	<0.17	mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	9	-	9	-	11	-	13	mg/kg	1	A-T-024s
Selenium$_D$[M#]	<1	-	<1	-	<1	-	<1	mg/kg	1	A-T-024s
Vanadium$_D$[M#]	16	-	20	-	20	-	23	mg/kg	1	A-T-024s
Zinc$_D$[M#]	86	-	94	-	81	-	112	mg/kg	1	A-T-024s

Envirolab Job Number: 26/05250

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	26/05250/1	26/05250/2	26/05250/3	26/05250/4	26/05250/5	26/05250/6	26/05250/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS101	WS101	WS102	WS102	WS103	WS103	WS104			
Depth to Top	0.30	0.90	0.40	1.20	0.30	0.75	0.50			
Depth To Bottom										
Date Sampled	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26			
Sample Type	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES			
Sample Matrix Code	4AE	5A	4AE	5AE	4AE	6AE	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	-	NAD	-	NAD	-	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	-	N/A	-	N/A	-	N/A			A-T-045

Envirolab Job Number: 26/05250

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	26/05250/1	26/05250/2	26/05250/3	26/05250/4	26/05250/5	26/05250/6	26/05250/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS101	WS101	WS102	WS102	WS103	WS103	WS104			
Depth to Top	0.30	0.90	0.40	1.20	0.30	0.75	0.50			
Depth To Bottom										
Date Sampled	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26			
Sample Type	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES			
Sample Matrix Code	4AE	5A	4AE	5AE	4AE	6AE	4AE			
PAH-16MS										
Acenaphthene$_A^{M\#}$	0.02	-	0.04	-	0.05	-	0.04	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	-	<0.01	-	0.02	-	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	-	0.03	-	0.31	-	0.06	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.10	-	0.14	-	3.38	-	0.26	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.09	-	0.12	-	2.80	-	0.26	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.19	-	0.23	-	4.41	-	0.49	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.08	-	0.10	-	1.67	-	0.21	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	-	<0.07	-	1.29	-	0.14	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.15	-	0.20	-	3.28	-	0.37	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	-	<0.04	-	0.61	-	0.07	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.21	-	0.34	-	6.07	-	0.58	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	-	<0.01	-	0.03	-	0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.09	-	0.12	-	2.10	-	0.25	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	-	<0.03	-	<0.03	-	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.12	-	0.18	-	2.23	-	0.42	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	0.15	-	0.24	-	4.73	-	0.40	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	1.20	-	1.74	-	33	-	3.56	mg/kg	0.01	A-T-019s

Envirolab Job Number: 26/05250

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	26/05250/1	26/05250/2	26/05250/3	26/05250/4	26/05250/5	26/05250/6	26/05250/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS101	WS101	WS102	WS102	WS103	WS103	WS104			
Depth to Top	0.30	0.90	0.40	1.20	0.30	0.75	0.50			
Depth To Bottom										
Date Sampled	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26			
Sample Type	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES			
Sample Matrix Code	4AE	5A	4AE	5AE	4AE	6AE	4AE			
Speciated PCB-WHO12										
PCB BZ 81$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 105$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 114$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 118$_A^{M\#}$	-	-	-	<0.007	-	-	-	mg/kg	0.007	A-T-004s
PCB BZ 123$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 126$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 156$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 157$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 167$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 169$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 189$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
PCB BZ 77$_A$	-	-	-	<0.005	-	-	-	mg/kg	0.005	A-T-004s
Total Speciated PCB-WHO12$_A$	-	-	-	<0.007	-	-	-	mg/kg	0.005	A-T-004s

Envirolab Job Number: 26/05250

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	26/05250/1	26/05250/2	26/05250/3	26/05250/4	26/05250/5	26/05250/6	26/05250/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS101	WS101	WS102	WS102	WS103	WS103	WS104			
Depth to Top	0.30	0.90	0.40	1.20	0.30	0.75	0.50			
Depth To Bottom										
Date Sampled	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26			
Sample Type	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES	SOIL	SOIL - ES			
Sample Matrix Code	4AE	5A	4AE	5AE	4AE	6AE	4AE			
TPH CWG with Clean Up										
Ali >C5-C6$_A$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	-	<1	-	-	-	<1	-	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	-	<1	-	-	-	<1	-	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	-	<1	-	-	-	<1	-	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	-	<1	-	-	-	<1	-	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	-	<1	-	-	-	5	-	mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	<1	-	-	-	5	-	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	-	<1	-	-	-	2	-	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	-	<1	-	-	-	<1	-	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	-	<1	-	-	-	<1	-	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	-	<1	-	-	-	<1	-	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	-	<1	-	-	-	1	-	mg/kg	1	A-T-055s
Total Aromatics$_A$	-	<1	-	-	-	3	-	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35)$_A$	-	<1	-	-	-	8	-	mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s

Envirolab Job Number: 26/05250

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	26/05250/8	26/05250/9	26/05250/10	26/05250/11	26/05250/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS104	WS105	WS105	CT01	CT02					
Depth to Top	1.20	0.20	1.30	0.00	0.00					
Depth To Bottom										
Date Sampled	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26					
Sample Type	SOIL	SOIL - ES	SOIL	SOLID - ROAD CORE / TARMAC	SOLID - ROAD CORE / TARMAC					
Sample Matrix Code	6AE	4AE	5AE	7	7					
% Stones >10mm$_A$	<0.1	<0.1	10.0	-	-			% w/w	0.1	A-T-044
pH$_D$ M#	-	10.59	-	-	-			pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$ M#	-	1.23	-	-	-			g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$ M#	-	27000	-	-	-			mg/kg	200	A-T-028s
Sulphur (total)$_D$	-	8080	-	-	-			mg/kg	50	A-T-024s
Cyanide (total)$_A$ M#	-	<1	-	-	-			mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	-	<0.2	-	-	-			mg/kg	0.2	A-T-050s
Organic Matter$_D$ M#	-	1.56	-	-	-			% w/w	0.14	A-T-032s
Arsenic$_D$ M#	-	4	-	-	-			mg/kg	1	A-T-024s
Boron (water soluble)$_D$ M#	-	1.0	-	-	-			mg/kg	1	A-T-027s
Cadmium$_D$ M#	-	<1.0	-	-	-			mg/kg	1	A-T-024s
Copper$_D$ M#	-	20	-	-	-			mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	-	<1	-	-	-			mg/kg	1	A-T-040s
Lead$_D$ M#	-	50	-	-	-			mg/kg	1	A-T-024s
Mercury$_D$	-	<0.17	-	-	-			mg/kg	0.17	A-T-024s
Nickel$_D$ M#	-	12	-	-	-			mg/kg	1	A-T-024s
Selenium$_D$ M#	-	<1	-	-	-			mg/kg	1	A-T-024s
Vanadium$_D$ M#	-	23	-	-	-			mg/kg	1	A-T-024s
Zinc$_D$ M#	-	101	-	-	-			mg/kg	1	A-T-024s
Benzo(a)pyrene$_A$	-	-	-	61.3	<4.0			mg/kg	4	A-T-019 TAR

Envirolab Job Number: 26/05250

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	26/05250/8	26/05250/9	26/05250/10	26/05250/11	26/05250/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS104	WS105	WS105	CT01	CT02					
Depth to Top	1.20	0.20	1.30	0.00	0.00					
Depth To Bottom										
Date Sampled	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26					
Sample Type	SOIL	SOIL - ES	SOIL	SOLID - ROAD CORE / TARMAC	SOLID - ROAD CORE / TARMAC					
Sample Matrix Code	6AE	4AE	5AE	7	7					
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	-	NAD	-	-	-					A-T-045
Asbestos Matrix (visual)$_D$	-	-	-	-	-					A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-	-	-					A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	-	N/A	-	-	-					A-T-045

Envirolab Job Number: 26/05250

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	26/05250/8	26/05250/9	26/05250/10	26/05250/11	26/05250/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS104	WS105	WS105	CT01	CT02					
Depth to Top	1.20	0.20	1.30	0.00	0.00					
Depth To Bottom										
Date Sampled	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26					
Sample Type	SOIL	SOIL - ES	SOIL	SOLID - ROAD CORE / TARMAC	SOLID - ROAD CORE / TARMAC					
Sample Matrix Code	6AE	4AE	5AE	7	7					
PAH-16MS										
Acenaphthene$_A^{M\#}$	-	0.07	-	-	-			mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	-	<0.01	-	-	-			mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	-	0.07	-	-	-			mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	-	0.59	-	-	-			mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	-	0.73	-	-	-			mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	-	1.17	-	-	-			mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	-	0.55	-	-	-			mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	-	0.30	-	-	-			mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	-	0.86	-	-	-			mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	-	0.19	-	-	-			mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	-	1.31	-	-	-			mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	-	0.01	-	-	-			mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	-	0.67	-	-	-			mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	-	<0.03	-	-	-			mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	-	0.73	-	-	-			mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	-	0.94	-	-	-			mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	-	8.19	-	-	-			mg/kg	0.01	A-T-019s

Envirolab Job Number: 26/05250

Client Project Name: Alpha House

Client Project Ref: 11380G

Lab Sample ID	26/05250/8	26/05250/9	26/05250/10	26/05250/11	26/05250/12			Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS104	WS105	WS105	CT01	CT02					
Depth to Top	1.20	0.20	1.30	0.00	0.00					
Depth To Bottom										
Date Sampled	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26	28-Apr-26					
Sample Type	SOIL	SOIL - ES	SOIL	SOLID - ROAD CORE / TARMAC	SOLID - ROAD CORE / TARMAC					
Sample Matrix Code	6AE	4AE	5AE	7	7					
Speciated PCB-WHO12										
PCB BZ 81$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
PCB BZ 105$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
PCB BZ 114$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
PCB BZ 118$_A^{M\#}$	<0.007	-	<0.007	-	-			mg/kg	0.007	A-T-004s
PCB BZ 123$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
PCB BZ 126$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
PCB BZ 156$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
PCB BZ 157$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
PCB BZ 167$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
PCB BZ 169$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
PCB BZ 189$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
PCB BZ 77$_A$	<0.005	-	<0.005	-	-			mg/kg	0.005	A-T-004s
Total Speciated PCB-WHO12$_A$	<0.007	-	<0.007	-	-			mg/kg	0.005	A-T-004s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
Subscript "@"	Result is an opinion
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: WML Consulting Ltd, Third Floor South, Metropolitan House, Station Rd, Cheadle Hulme, Cheshire, SK8 7AZ

Project: Alpha House

Clients Project No: 11380G

Project No: 26/05250

Date Received: 30/04/2026 (am)

Cool Box Temperatures (°C): 12.4

Lab Sample ID	26/05250/1	26/05250/7
Client Sample No		
Client Sample ID/Depth	WS101 0.30m	WS104 0.50m
Date Sampled	28/04/26	28/04/26
Deviation Code		
F	✓	✓

Key
F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	26/05250/1	26/05250/7
Client Sample No		
Client Sample ID/Depth	WS101 0.30m	WS104 0.50m
Date Sampled	28/04/26	28/04/26
Sulphate (acid soluble)	✓	✓

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

Envirolab Analysis Dates

Lab Sample ID	26/05250/1	26/05250/2	26/05250/3	26/05250/4	26/05250/5	26/05250/6	26/05250/7	26/05250/8	26/05250/9	26/05250/10	26/05250/11	26/05250/12
Client Sample No												
Client Sample ID/Depth	WS101 0.30m	WS101 0.90m	WS102 0.40m	WS102 1.20m	WS103 0.30m	WS103 0.75m	WS104 0.50m	WS104 1.20m	WS105 0.20m	WS105 1.30m	CT01 0.00m	CT02 0.00m
Date Sampled	28/04/26	28/04/26	28/04/26	28/04/26	28/04/26	28/04/26	28/04/26	28/04/26	28/04/26	28/04/26	28/04/26	28/04/26
A-T-004s				07/05/2026				07/05/2026		07/05/2026		
A-T-019 TAR											15/05/2026	15/05/2026
A-T-019s	08/05/2026		08/05/2026		08/05/2026		08/05/2026		08/05/2026			
A-T-022s		07/05/2026				07/05/2026						
A-T-024s	01/06/2026		21/05/2026		19/05/2026		21/05/2026		19/05/2026			
A-T-026s	21/05/2026		21/05/2026		21/05/2026		21/05/2026		21/05/2026			
A-T-027s	19/05/2026		19/05/2026		19/05/2026		19/05/2026		19/05/2026			
A-T-028s	29/05/2026		29/05/2026		29/05/2026		29/05/2026		29/05/2026			
A-T-031s	18/05/2026		18/05/2026		18/05/2026		18/05/2026		18/05/2026			
A-T-032s	26/05/2026		26/05/2026		26/05/2026		26/05/2026		26/05/2026			
A-T-040s	21/05/2026		21/05/2026		21/05/2026		21/05/2026		21/05/2026			
A-T-042sTCN	08/05/2026		08/05/2026		08/05/2026		08/05/2026		08/05/2026			
A-T-044	21/05/2026	21/05/2026	21/05/2026	21/05/2026	21/05/2026	21/05/2026	21/05/2026	21/05/2026	21/05/2026	21/05/2026		
A-T-045	11/05/2026		11/05/2026		11/05/2026		11/05/2026		11/05/2026			
A-T-050s	22/05/2026		22/05/2026		22/05/2026		22/05/2026		22/05/2026			
A-T-055s		11/05/2026				11/05/2026						
Calc-As Recd		11/05/2026				11/05/2026						

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

End of Report

APPENDIX 05

Site Specific Acceptance Criteria

Screening Levels for "Commercial" end use assuming a 1% SOM for Hydrocarbons.

Contaminant	Screening Levels for Commercial End Use (mg/kg)
Metals	
Arsenic	640
Boron	240,000
Cadmium	190
Chromium III	8,600
Chromium VI	33
Copper	68,000
Lead*	2330
Mercury	58
Nickel	980
Selenium	12,000
Vanadium	9,000
Zinc	730,000
Non Metals	
Phenol	440
Polyaromatic Hydrocarbons (PAHs)	
Benz[a]anthracene	170
Benzo[a]pyrene	35
Benzo[b]fluoranthene	44
Benzo[ghi]perylene	3,900
Benzo[k]fluoranthene	1,200
Chrysene	350
Dibenz[ah]anthracene	3.5
Fluoranthene	23,000
Indeno[123-cd]pyrene	500
Naphthalene	190
Pyrene	54,000

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

Contaminant	Screening Levels for Commercial End Use (mg/kg)
Volatile Organic Compounds	
Benzene	27
Ethylbenzene	5,700
Toluene	56,000
M - Xylene	6,200
O - Xylene	6,600
P - Xylene	5,900
Total Petroleum Hydrocarbons	
Aliphatic C5-6	3,200
Aliphatic C6-8	7,800
Aliphatic C8-10	2,000
Aliphatic C10-12	9,700
Aliphatic C12-16	59,000
Aliphatic C16-35	1,600,000
Aliphatic C35 - 44	1,600,000
Aromatic C5 - 7	26,000
Aromatic C7 - 8	56,000
Aromatic C8-10	3,500
Aromatic C10-12	16,000
Aromatic C12-16	36,000
Aromatic C16-21	28,000
Aromatic C21-35	28,000
Aromatic C35 - 44	28,000

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

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

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

Table 1: Inorganic Tier 1 Water Environment Screening Criteria

Contaminant	Units	Hardness Banding ($CaCO_3$ mg/l)	EQS /WFD (Freshwater)	UK DWS
Arsenic	µg/l	-	50	10
Ammonia	mg/l	-	0.2	0.5
Boron	µg/l	-	2000	1000
Cadmium	µg/l	-	5	5
Chromium	µg/l	0-50	2	50
		50-100	10	
		100-150	10	
		150-200	20	
		200-250	20	
Copper	µg/l	0-10	0.5	2000
		10-50	0.5	
		50-200	3	
		200-250	8	
		>250	12	
Cyanide (Free)	µg/l	-	1	-
Cyanide		-	-	50
Iron	µg/l	-	1000	200
Lead	µg/l	0-50	4	10
		50-150	10	
		150-250	20	
		>250	20	
Mercury	µg/l	-	1	1
Nickel	µg/l	0-50	8	20
		50-100	20	
		100-150	20	
		150-250	40	
		>250	40	
Selenium	µg/l	-	-	10
Sulphate (SO_4)	mg/l	-	400	250
Zinc	µg/l	0-50	8	5000
		50-150	15	
		150-250	50	
		>250	50	
pH	-	-	6-9	-

Table 2: Organic Tier 1 Water Environment Screening Criteria

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

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

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

APPENDIX 06

In Situ Test Results

IN SITU PERMEABLILTY TEST

Site Name Alpha House, Wythenshawe
Job Number 11380G

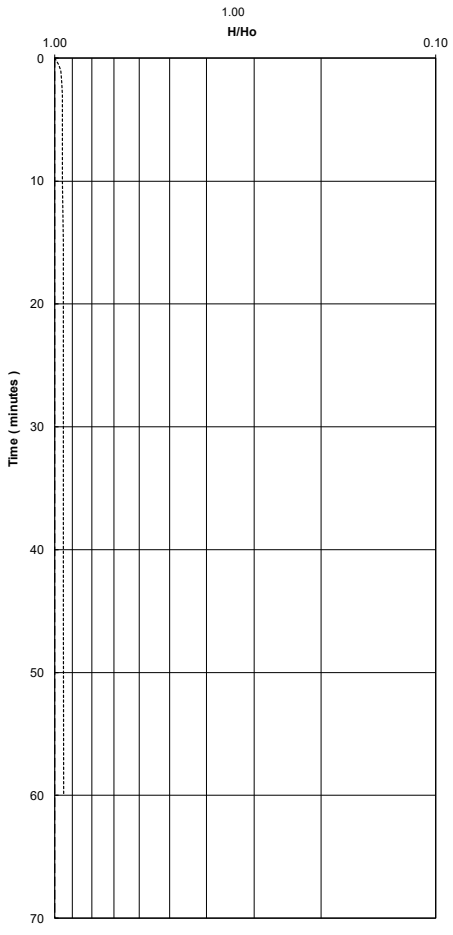
Date 28-Apr-26
Borehole Number WS101

FIELD MEASUREMENTS

Time Elapsed (t) mins	Depth at Time, t(m)	H (m)	H/Ho
0.00	0.75	2.25	1.00
0.50	0.80	2.20	0.98
1.00	0.83	2.17	0.96
2.00	0.84	2.16	0.96
3.00	0.85	2.15	0.96
4.00	0.85	2.15	0.96
5.00	0.85	2.15	0.96
7.00	0.85	2.15	0.96
10.00	0.85	2.15	0.96
15.00	0.86	2.14	0.95
30.00	0.86	2.14	0.95
45.00	0.86	2.14	0.95
60.00	0.87	2.13	0.95

BOREHOLE INFORMATION

Depth to base of casing:	0.00 m
Depth to base of borehole before test:	3.00 m
Depth to base of borehole after test:	3.00 m
Test Section:	2.00 m
Depth to standing water:	3.00 m
Depth to induced water:	0.75 m
Diameter of Borehole (D):	0.09 m
Diameter of Piezo/Standpipe (d):	0.03 m
Test Length (L):	2.19 m
Diameter of test length (D):	0.090 m
Differential head at start of test (Ho):	2.25 m
Differential Head at end of test (Hf):	2.13 m
Time elapsed at end of test (tf):	3600 sec



PERMEABILITY CALCULATION

H/Ho > 0.37, thus permeability is calculated as a constant head test

Therefore

Permeability, K = Q / HxF

where

FLOW RATE (Q)	2.12E-07 m3/secs
AVERAGE HEAD (Hc)	2.19 m
SHAPE FACTOR (F)	4.80E+02

PERMEABILITY 2.40E-08 m/sec

Remarks:

WML CONSULTING

IN SITU PERMEABLILTY TEST

Site Name Alpha House, Wythenshawe
Job Number 11380G

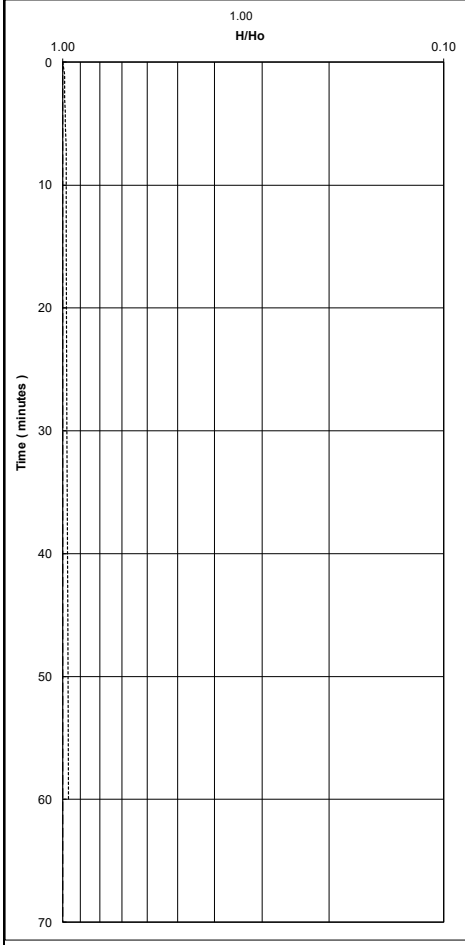
Date 28-Apr-26
Borehole Number WS102

FIELD MEASUREMENTS

Time Elapsed (t) mins	Depth at Time, t(m)	H (m)	H/Ho
0.00	0.80	2.10	1.00
0.50	0.81	2.09	1.00
1.00	0.82	2.08	0.99
2.00	0.82	2.08	0.99
3.00	0.82	2.08	0.99
4.00	0.83	2.07	0.99
5.00	0.83	2.07	0.99
7.00	0.84	2.06	0.98
10.00	0.84	2.06	0.98
15.00	0.84	2.06	0.98
30.00	0.85	2.05	0.98
45.00	0.86	2.04	0.97
60.00	0.87	2.03	0.97

BOREHOLE INFORMATION

Depth to base of casing:	0.00 m
Depth to base of borehole before test:	2.90 m
Depth to base of borehole after test:	2.90 m
Test Section:	2.10 m
Depth to standing water:	2.90 m
Depth to induced water:	0.80 m
Diameter of Borehole (D):	0.09 m
Diameter of Piezo/Standpipe (d):	0.03 m
Test Length (L):	2.07 m
Diameter of test length (D):	0.090 m
Differential head at start of test (Ho):	2.10 m
Differential Head at end of test (Hf):	2.03 m
Time elapsed at end of test (tf):	3600 sec



PERMEABILITY CALCULATION

H/Ho > 0.37, thus permeability is calculated as a constant head test

Therefore

Permeability, K = Q / HxF

where

FLOW RATE (Q)	1.24E-07 m3/secs
AVERAGE HEAD (Hc)	2.07 m
SHAPE FACTOR (F)	4.80E+02

PERMEABILITY 1.55E-08 m/sec

Remarks:

WML CONSULTING

IN SITU PERMEABLILTY TEST

Site Name Alpha House, Wythenshawe
Job Number 11380G

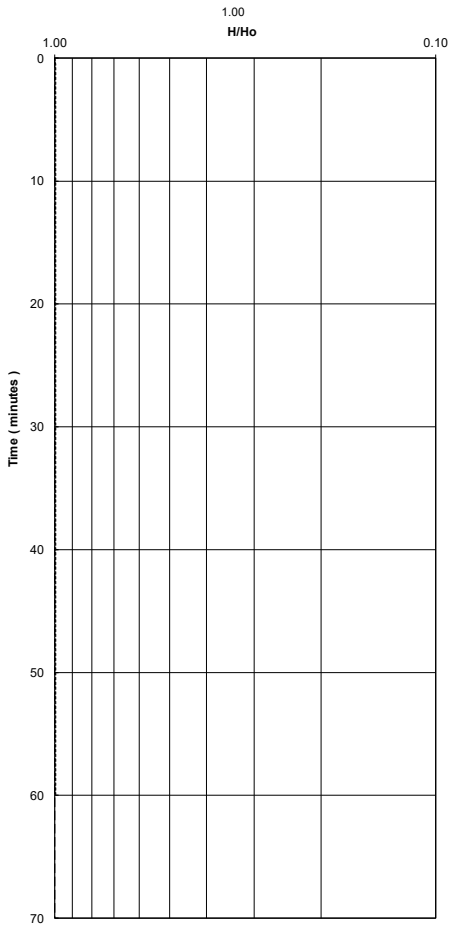
Date 28-Apr-26
Borehole Number WS104

FIELD MEASUREMENTS

Time Elapsed (t) mins	Depth at Time, t(m)	H (m)	H/Ho
0.00	0.70	2.00	1.00
0.50	0.71	1.99	1.00
1.00	0.71	1.99	1.00
2.00	0.71	1.99	1.00
3.00	0.71	1.99	1.00
4.00	0.71	1.99	1.00
5.00	0.71	1.99	1.00
7.00	0.71	1.99	1.00
10.00	0.71	1.99	1.00
15.00	0.71	1.99	1.00
30.00	0.71	1.99	1.00
45.00	0.71	1.99	1.00
60.00	0.71	1.99	1.00

BOREHOLE INFORMATION

Depth to base of casing:	0.00 m
Depth to base of borehole before test:	2.70 m
Depth to base of borehole after test:	2.70 m
Test Section:	2.00 m
Depth to standing water:	2.70 m
Depth to induced water:	0.70 m
Diameter of Borehole (D):	0.09 m
Diameter of Piezo/Standpipe (d):	0.03 m
Test Length (L):	2.00 m
Diameter of test length (D):	0.090 m
Differential head at start of test (Ho):	2.00 m
Differential Head at end of test (Hf):	1.99 m
Time elapsed at end of test (tf):	3600 sec



PERMEABILITY CALCULATION

H/Ho > 0.37, thus permeability is calculated as a constant head test

Therefore

Permeability, K = Q / HxF

where

FLOW RATE (Q)	1.77E-08 m3/secs
AVERAGE HEAD (Hc)	2.00 m
SHAPE FACTOR (F)	4.80E+02

PERMEABILITY 2.35E-09 m/sec

Remarks:

WML CONSULTING