JACQUET UK LTD,

WENTWORTH PARK INDUSTRIAL ESTATE,

TANKERSLEY, BARNSLEY, S75 3DH



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INTERIM GROUND INVESTIGATION REPORT

Prepared by

SILKSTONE ENVIRONMENTAL LTD

For

JARVALE CONSTRUCTION LTD

On Behalf of

JACQUET UK LTD

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D BS 10175: 2017 *Investigation of potentially contaminated sites: Code of practice*.
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1.0 INTRODUCTION

1.1 Brief

Silkstone Environmental Ltd (SEL) has completed a ground investigation for a new storage and manufacturing warehouse associated with an existing facility on land occupied by Jacquet UK Ltd, at Wentworth Park Industrial Estate, Tankersley, Barnsley, S75 3DH (the site) following receipt of a purchase order from Jarvale Construction Ltd (the client), PO ref. 11137, dated 24th May 2024.

The site comprises an office building with a faux Greek inspired façade to the front adjoining an engineering workshop to the rear. There is a bituminous surfaced car park to the front of the building and service yard on the northwestern side. The new warehouse is proposed on vacant land to the southeast of the existing building. This is an overgrown area of uneven surface topography with occasional small ponds and semi-mature trees.

The purpose of the investigation was to characterise ground conditions, determine geotechnical parameters to inform the design of the new factory floor and to assess the contamination and ground gas risk to construction workers and end users to ensure suitability for use. The work included investigation fieldwork, in-situ geotechnical testing, chemical and geotechnical laboratory testing, a programme of gas monitoring and the preparation of this report.

The intrusive investigation follows the completion of the *LCRM Stage 1 Risk Assessment* (also known as a Phase 1 desk study) prepared by Inspire Design & Development Ltd, reference JCL-1688-01-LCRM-001 and dated 22nd August 2023 which should be read alongside this latest report.

1.2 Guidance and Information Sources

This report has been produced in line with relevant guidance and best practice. The ground investigation has been carried out in general accordance with the requirements of *Land Contamination Risk Management* (Ref. A), involving a tier 2 generic quantitative risk assessment. The investigation has also been carried out in general accordance with the '*Guiding Principles for Land Contamination*' (Ref. B), the recommendations of BS5930:(2020) *Code of Practice for Site Investigations* (Ref. C), BS10175:(2017) *Investigation of Potentially Contaminated Sites: Code of Practice* (Ref. D) and CIRIA C665:2007 *Assessing the risk posed by hazardous ground gases to buildings* (Ref. E).

If land proposed to be developed is suspected to be contaminated either historically or by its current use, an investigation may be requested by the Local Authority under the Town and Country Planning Act 1990 (Ref. F) and the National Planning Policy Framework (2018) (Ref. G) to determine the level of risk and if remediation is necessary or whether there may be grounds for the land to be considered contaminated under Part 2A of the Environmental Protection act 1990 (Ref. H). Under this regime investigations are carried out to determine if the current condition of the site is suitable for its proposed use.

1.3 Report Limitations

The comments and opinions expressed in this report are based on the ground conditions encountered at the specific locations during the fieldwork and on the results of measurements made in the field and in the laboratory. However, conditions may prevail which were not revealed by the investigation and which, therefore, could not be taken into account. In particular it should be noted that groundwater levels may vary due to seasonal or other effects such as boring, drilling and excavation processes.

The conclusions reached in this report are necessarily restricted to those which can be determined from available information and may be subject to amendment in the light of additional information becoming available or to changes in relevant legislation.

This report is strictly confidential to the party to whom it is addressed and may only be relied upon by that party or their other professional advisors, for the specific purpose to which it refers. Any third party using this report does so entirely at their own risk and SEL accepts no responsibility or liability for any costs, claims, damages or expenses (including consequential damages) as a result of this report or any part of its contents being used by any third party.

Except in connection with the specific purpose for which this report has been prepared, neither the whole nor any part of this report, nor any reference thereto, may be included in any published document, circular or statement, nor published in any way, nor disclosed orally to a third party, without the written approval from SEL of the form and context of such publication or disclosure. Such approval is required whether or not SEL are referred to by name and whether or not the report is combined with others.

SEL are unaware of any conflicts of interest in the preparation of this report.

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2.0 ENVIRONMENTAL SETTING

2.1 Site Location

The site is located off Wentworth Way on the Wentworth Industrial Park, Tankersley, close to the A61 and to the southwest of junction 36 of the M1 motorway, approximately 6.90km south of Barnsley. A location plan is presented as Figure 1 in Appendix A. A drawing showing the existing and proposed buildings on which the site area is outlined in red, is presented as Figure 2 and also included in Appendix A.

The site is centred on National Grid Reference (NGR 434045, 399573) is approximately 1.91ha in area and situated at an approximate height of 155-160m Above Ordnance Datum (AOD), with the ground across the site having an overall gentle fall to the northwest.

2.2 Historical Land Use

Information relating to the historical uses of the site and surrounding area has been determined from a review of historical Ordnance Survey (OS)[1] (1:500/1:528, 1:2500 and 1:10,000/1:10,560) maps dating from 1850 to 2023 and Google Earth aerial imagery dated 2002 to 2023.

The earliest map (1850) shows the site as fields (probable agricultural) with a wooded area directly adjacent to the east.

The 1893 map shows the wooded area to be a plantation (Potter Holes Plantation). It also identifies an air shaft on the northern corner of the site (outside the proposed development area). There are no significant changes to the site until the construction of the existing building by 1989 as part of the exiting industrial estate. The Google Earth aerial imagery dated 2002 shows the investigation area with a small amount of vegetation, which over the subsequent years becomes more heavily overgrown.

Google street view imagery dated 2009 shows the Jacquet sign outside the front of the premises.

Within the surrounding area, historical uses have included a colliery (former Wharncliffe Silkstone Colliery) approximately 80m northwest at its closest point which included, tanks, gasometers, coke ovens, rail lines, shafts, ponds and colliery tip. Other surrounding uses included several plantations, a pumping station and a farm.

2.3 Current Site Condition

The site comprises an office building with a faux Greek inspired façade to the front adjoining an engineering workshop to the rear. To the front (southwest) of the building is a bituminous surfaced car park and to the northwest of the building is a bituminous surfaced storage yard.

[1] Historical Ordnance Survey maps appended to the LCRM Stage 1 Risk Assessment, Inspire Design Group & Ordnance Survey historical maps from the National Library of Scotland (https://maps.nls.uk).

To the southeast of the site is the area proposed for the new storage and manufacturing warehouse. This area at the time of the investigation was heavily overgrown with shrubs and semi-mature trees and included a number of small ponds. The ground had an uneven topography with mounds of visible Made Ground exposed at the surface at various locations comprising mostly sand and bricks. To the rear of the site (northeast) was an unofficial footpath extending northwest to the southeast.

From the carpark leading to the investigation area was a mound of sand incorporating small metal offcuts. From discussion with the client this material is understood to be from the precision cutting of stainless steel and nickel alloys. The client also stated the sand is garnet rich and it is only used with water for cutting the metals and no other fluids are used in this process.

There was also a shallow drain/dike extending along the southeastern edge of the site which was observed to be dry during the investigation and the subsequent gas monitoring visits.

At the time of the investigation an ecologist from the RPS Group was intermittently present to give toolbox talks to all engineers and contractors working on site regarding protection of ecology due to the possible presence of great crested newts, for which evidence is understood to have been noted during a previous survey.

The ecologist also conducted walkovers of the site whilst the investigation was being undertaken and some of the exploratory hole positions were moved so that the ponds remained undisturbed and the minimal amount of vegetation was removed.

During the investigation the ponds were observed to contain water, but during the gas monitoring visits conducted in September, it was noted that the ponds no longer contained water. Discussions with the ecologist and client also confirmed the seasonal variation of water within the ponds.

2.4 Geological Setting

The anticipated geology of the investigation location based on the previous Phase 1 desk study and corroborated against the available online British Geological Survey (BGS) and Coal Authority information is summarised in Table 1[2].

[2] BGS 1:50,000 Sheet 87 (Barnsley) (Bedrock and Superficial dated 2008), BGS 1:10,000 sheet SK39NW (High Green) (Solid and Drift), and Coal Authority Interactive Map viewer website.

Table 1: Anticipated Geology

Artificial Ground	Made Ground recorded as infilled ground extending across the ground investigation area and also Made Ground recorded 56m north.
Superficial Deposits	No superficial geology recorded onsite or within 250m of the site.
Solid Geology (Bedrock)	**Pennine Lower Coal Measures Formation** comprising interbedded mudstone, siltstone and sandstone and occasional seams of coal.
Faults	One inferred fault 180m trending WNW-ESE.
Coal Seams / Mining / Quarrying	Site within a Coal Authority designated Development High Risk Area in terms of coal mining legacy risk and within the area that is affected by past/current surface mining and probable shallow coal mine workings (<30m). Unlicensed opencast mining recorded across the investigation area. Past shallow coal mine workings approximately 100m east. Mine entry onsite (adjacent to the northern corner of the existing Jacquet building) and outside the investigation area. The Phase 1 report identifies probable unrecorded shallow workings (<30m bgl) within the site, but since these are believed to relate to the Flockton Thick coal which was subjected to opencast working and there are no recorded coal seams between this seam and the Flockton Thin coal at a depth of more than 30m, the risk from unrecorded workings was considered to be low.

2.5 Hydrogeology

The Phase 1 desk study shows that the on-site bedrock geology is designated a Secondary (A) Aquifer. Formerly known as minor aquifers, secondary (A) aquifers are defined as containing permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

With respect to groundwater vulnerability beneath the investigation area, the Phase 1 desk study records that groundwater in the bedrock aquifer has a high vulnerability to pollution discharged at the surface with a flow mechanism of well-connected fractures. and is overlain by soils of high leaching class with an infiltration value of >70%.

The Environment Agency's (EA's) online Catchment Data Explorer Map shows that the bedrock lies within the Don and Rother Millstone grit & coal measures groundwater body. The chemical quality of groundwater between 2009 and 2019 has been classified as 'Poor'.

The Groundsure Enviro Data Viewer[3] shows no groundwater Source Protection Zones (areas designated by the Environment Agency (EA) as a major groundwater source for wells, boreholes and springs used for drinking water supply) to be present within a 2km radius of the site.

The Phase 1 desk study records no active EA licensed groundwater abstractions within 1km, the nearest being 1.683km to the southeast for spray irrigation. There are also no active EA licensed groundwater abstractions for potable (drinking water) use within 2km of the site.

[3] https://www.groundsure.io/

Based on the above information, whilst the chemical quality of groundwater regionally has been consistently poor, the sensitivity of groundwater as a receptor to any potential contamination that may arise as a result of the site proposals is considered of reasonable significance. This is due to the bedrock groundwater having a high vulnerability to potential contamination with surface soils of high leaching class.

2.6 Hydrology

Other than the occasional small seasonal (intermittent) ponds within the investigation area, the nearest surface water feature to the site is a shallow ditch drain extending across the southeastern edge of the investigation area from the northeast to southwest. This was dry and vegetated at the time of the investigation suggesting that it is ephemeral (only conveys or temporarily retains water during or immediately following rainfall). When flowing, this is anticipated to be a tributary of Birdwell Dike located approximately 690m to the north. Birdwell Dike flows a short distance in a northeasterly direction before joining Warren Dike which flows north joining Rockley Dike approximately 2.56km to the north.

The EA's on-line Catchment Data Explorer map shows that the site is located within the Dearne surface water operational catchment in which the Rockley Dike from its source to the River Dove has had a 'Moderate' ecological status from 2009 to 2022 and a chemical quality of 'Fail' for 2019[4].

The Phase 1 desk study records no active EA licensed surface water abstractions (including for potable use) within 2km of the site.

Based on the above information, the level of sensitivity of surface water resources to any potential contamination that may arise as a result of the proposed development at this location is not considered to be of high significance due to the distance to the nearest permanently flowing watercourse (Birdwell Dike) 690m to the north.

2.7 Ecology

The Phase 1 desk study identifies three environmental designations within 1km of the site. These include a Local Nature Reserve (Potter Holes Plantation) adjoining the northeastern corner of the investigation area and two areas of Ancient and Semi-Natural Woodland located 591m east (Bull Wood) and 624m southwest (West Wood.

Four areas of Priority Habitat deciduous woodland have also been identified within 250m of the site, the nearest adjoining the investigation area to the immediate northeast and southeast.

The site is also located within two Impact Risk Zones to Sites of Special Scientific Interest (SSSI), although the proposed development should not require consultation regarding this.

[4] The chemical quality was classified as 'Good' between 2013 and 2016.

2.8 Visual and Cultural Designations

The Phase 1 report identified two cultural designations within 250m of the site, these both being grade II listed buildings located 162m south (Tankersley Farmhouse and associated buildings) and 209m southeast (farm building).

2.9 Land / Ground Gas

Potential sources of land / ground gas (principally methane and carbon dioxide) identified in the Phase 1 report included the deep fill associated with the former opencast workings extending through the investigation area, and/or underlying coal mine workings.

2.10 Radon Gas

Regarding radon gas, reference to the UK maps of radon on the UK Health Security Agency website[5] shows that the site is located within a Radon Affected Area. This is because the highest radon potential within the one kilometre grid square in which this site is located (determined by the percentage of homes above the radon action level) is 1-3%. However, in accordance with current UK guidance in BR 211 (Ref. I) no radon protection measures are required for new buildings where the level of risk from radon is 1-3%.

2.11 Unexploded Bomb Risk

An inspection of the unexploded bomb risk map on the Zetica UXO website identifies the site to be located within a zone of low risk from buried WWII unexploded ordnance.

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[5] https://www.ukradon.org/information/ukmaps

3.0 GROUND INVESTIGATION

3.1 Objectives

The objectives of the investigation were as follows:

- To characterise ground conditions and provide geotechnical information to inform the design of building foundations and to make basic recommendations;
- To obtain soil samples for laboratory geotechnical and contamination testing and to investigate the potential risk from ground gas by conducting a monitoring programme;
- To refine the conceptual site model presented in the Phase 1 report and provide a revised environmental risk assessment; and
- To make recommendations for any remediation or further work if appropriate.

3.2 Scope of Works

The investigation was completed in two phases with the first phase relating to the development area initially proposed (area closest to the existing building) between 15th and 19th July and the second phase relating to the development area subsequently proposed (area closest to the southeastern site boundary) between 31st July and 2nd August 2024.

The investigation was based on an outline scope specified by the client and involved the following:

- 7 no. cable percussive (also known as cable tool or shell and auger) boreholes (CP01-07) to depths of between 5.00m and 16.00m below existing ground level (begl) with standard penetration testing (SPTs) at 1.50m intervals.
- 6 no. window (also known as dynamic or windowless) sampling boreholes (WS01-06) to depths of between 0.48m and 6.00m begl with SPTs at 1.00m intervals or from the base of the hand dug inspection pits;
- 4 no. dynamic probing (DP) locations at DP01 and DP02 (to depths of 12.20 and 9.00m begl respectively) and following on from window sampling at WS05 and WS06 (to depths of 9.80 and12.60m begl respectively).
- 4 no. machine excavated trial pits (TP01-04) to depths of between 1.70 and 2.90m begl;
- Soil sampling at appropriate depth horizons for contamination testing to enable assessment of the potential human health risk, testing for Waste Acceptance Criteria (WAC) and geotechnical testing to inform foundation design; and
- Groundwater sampling for chemical analysis to enable assessment of the risk to controlled waters.

A programme of gas monitoring was also initiated from well installations established at six of the locations (WS02-03, CP01, CP04-06) involving six visits at approximately two-weekly intervals over a period of 3 months to enable assessment of the gas risk to the proposed development.

The investigation locations are identified on the exploration hole location plan provided as Figure 2 in Appendix A.

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3.3 Ground Investigation Methodology

The investigation was supervised on site by a suitably qualified and experienced SEL Engineer with all exploratory holes logged and sampled in accordance with BS5930:2020 (Ref. C). The exploratory hole logs are provided in Appendix B and a photographic record is provided in Appendix C.

Prior to commencement, the location of underground utilities was reviewed by reference to utility information acquired from Utility Site Search.

Each exploratory hole location was also cleared using a Cable Avoidance Tool (CAT) prior to breaking ground. Each windowless sampling, dynamic probing and cable percussive location was also initiated with a hand dug inspection pit to a depth of 1.20m begl where achievable, as a further precaution prior to the use of mechanical plant.

Excavation of the inspection pits was completed manually using a post hole digger and spade with the excavated soils being placed on clean plastic sheeting for recording and sampling.

The windowless sampling proceeded using an Archway Competitor tracked rig in which the soils are recovered from the ground in 1.00m long sample tubes fitted with a plastic sample liner to prevent cross contamination between samples. Standard Penetration Tests (SPTs) were carried out during window sampling at 1.00m intervals to provide information on soil strength.

Dynamic probing was completed at 4 no. locations (DP01, DP02, WS05 and WS06) using the window sampling rig. This involves driving 1.00m long steel rods into the ground and counting the blows at 100mm intervals, from which a correlation can be made with the SPT results.

The cable percussion boreholes were completed using a Dando 2000 and Dando 150 rig. This method of drilling involves the repeated lifting and dropping of heavy tools to penetrate soils and rock via a wire cable drawn though the apex of a large metal tripod frame and using steel casing to prevent the borehole from collapsing. SPTs were carried out at 1.50m intervals within each borehole.

Excavation of the trial pits was undertaken by a JCB 3CX and a CAT 432E with a 0.6m wide bucket.

Small disturbed samples for both contamination and geotechnical testing were collected from the recovered soils at each location and placed in appropriate sealed containers provided by the analytical laboratory. Bulk soil samples were also taken for geotechnical testing at appropriate locations and placed in laboratory supplied polythene sample bags.

Soil samples to be analysed for organic compounds (such as petroleum hydrocarbons) were placed in amber glass jars and stored in cool boxes with ice packs prior to dispatch to the chemical laboratory. All samples were collected using appropriate sampling equipment that was cleaned between each sampling location.

Upon completion of the fieldwork, gas monitoring wells had been established at two of the windowless sampling locations and four of the cable percussive boreholes. Three locations had flush covers and the remaining three had raised covers, all lockable metal covers set in concrete. The remaining exploratory hole locations were backfilled with soil arisings in approximately the same order that they were excavated and surface areas left clean and tidy.

Three groundwater samples were subsequently recovered for chemical testing from well installations at WS05, CP04 and CP06 on the third monitoring visit. Groundwater was sampled following well development by purging of water from the wells on the previous two visits and of three times the borehole volume of water on the day of sampling[6].

3.4 Laboratory Testing

Samples for potential contamination were submitted to a UKAS and MCERTS accredited chemical laboratory, Normec DETS. Samples for geotechnical testing were submitted to the UKAS accredited laboratory of Professional Soils Laboratory (PSL). All tests were scheduled by SEL in accordance with the encountered ground conditions.

Geotechnical Testing

The following geotechnical tests were scheduled:

Table 2: Scope of Geotechnical Testing

Test	Number
BRE concrete design suite (soil aggressiveness)	12
Atterberg limits (liquid and plastic limits)	20
Moisture content	22
Particle size distribution (sieve & sedimentation)	9

The geotechnical laboratory results are provided in Appendix D (the results for BRE concrete design are included with the chemical testing results in Appendix E) and discussed in Section 5.

Contamination Analysis

Samples for contamination testing were selected for analysis in accordance with the following:

[6] The exception to this was at WS03 where there was insufficient groundwater recharge within the well to permit full purging.

Table 3: Chemical Analysis Suite

Analytical Parameters		Soils	Groundwater
pH (acidity/alkalinity)		32	3
Metals / metalloids (arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc)		21	3
Hexavalent chromium		21	
Boron			3
Sulphate (2:1 water soluble) as SO4		32	
Total sulphate as SO4		32	3
Sulphur as S		12	3
Total and speciated polyaromatic hydrocarbons (PAHs)		21	3
Total petroleum hydrocarbons (TPHs) CWG aliphatic / aromatic split		10	3
Total Extractable petroleum hydrocarbons		1	
Benzene, toluene, ethylbenzene, xylenes (BTEX) & MTBE		10	3
Loss on ignition, Calorific value		9	
Electrical conductivity	Landfill leachate indicator	9	3
Biochemical oxygen demand (BOD)			3
Ammoniacal nitrogen as N, chloride	Landfill marker		3
Chloride			3
Dissolved organic carbon			3
Redox potential		9	
Total organic carbon (TOC)		9	
Soil organic matter (SOM)		21	
Asbestos screen & ID (stage 1)		19	
Asbestos quantification (stage 2)		3	

Testing for Waste Acceptance Criteria (WAC) was also undertaken on three samples of Made Ground.

The certified chemical laboratory results are presented in Appendix E of this report and discussed in section 6.

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4.0 ENCOUNTERED GROUND CONDITIONS

4.1 General

The ground and groundwater conditions encountered are described in detail on each of the exploratory hole logs and summarised below. The logs for each location are presented in Appendix B and a photographic record of the soils encountered is provided in Appendix C.

4.2 Made Ground

Made Ground was encountered at all exploratory hole locations and was proven to its full thickness at seven locations to depths of between 4.50m (CP05) and 16.00m begl (CP04). Dynamic probing also penetrated to depths of refusal at 9.00 to 12.60m begl where there is a presumption of the overlaying strata comprising Made Ground. The deepest area of Made Ground extended across the centre of the investigation area from the north to the south. The full depth of Made Ground remained unproven at TP01-04 and WS01-04.

The Made Ground encountered below the investigation area comprises mostly of a shallow variable Made Ground above opencast backfill material to bedrock. At three of the locations (CP03-05) the opencast backfill soils were at surface level beneath a thin surface covering of vegetation and sand from metal processing (CP03).

The shallow Made Ground varies in thickness and composition across the site. The site topography (undulating with a large mound centred on TP03) and the visible Made Ground exposed at the surface in places indicates that over time varying amounts and types of Made Ground has been placed on to the site.

Within the existing carpark area the Made Ground beneath consisted of a bituminous surface covering to depths of between 0.09-0.12m begl. Encountered beneath was a type 1 / sub base (CP01-02) and a coarse sand (WS01). This overlaid a sandy occasionally silty gravel of sandstone, brick, coal, slag, limestone, mudstone, clinker and concrete. At WS01 there was also a medium cobble content of limestone and sandstone. WS01 was terminated at 0.48m begl due to concrete being encountered, which was also seen in CP01 at 0.38m to 0.54m begl and at CP02 at 0.36m to 0.49m begl. Below the concrete at CP01 was a slightly sandy gravelly clay, including gravel of sandstone, brick, slag, concrete and an isolated fragment of metal wire to a depth of 0.93m begl. Beneath this was the opencast backfill which was also encountered below the concrete in CP02.

The surfacing capping for CP07, WS03-5 and DP01 was a topsoil consisting of slightly gravelly to gravelly silt occasionally silty clay with gravels of sandstone, mudstone, brick, indescript pebbles, quartzite and limestone to depths of 0.05m to 0.40m begl. There was also an occasional low cobble content of sandstone and an isolated piece of building insulation. The topsoil overlaid the opencast backfill.

At CP06 the surface capping was a type 1 / sub base (slightly sandy limestone gravel) to a depth of 0.10m begl with opencast backfill beneath.

At TP01 and WS02 the surface capping was a slightly gravelly silt with gravel of sandstone, mudstone, limestone, brick and coal with an isolated piece of timber. This extended to depths of 0.20m begl. This was underlain by opencast backfill at TP01 and at WS02 by a sandy silty gravel of sandstone, siltstone, limestone and coal with a low cobble content of masonry stone blocks to a depth of 0.90m before reaching the opencast backfill.

At TP02 the surface was capped by a silty gravel to 0.70m begl which included gravels of brick, concrete, sandstone and clinker with a high cobble content of brick, masonry stone, slag, coal, concrete and sandstone overlying the opencast backfill.

Encountered at TP03, TP04, WS06 was a slightly sandy gravelly clay, including gravels of sandstone, mudstone, brick and concrete and occasional pieces of metal and wood with a medium to high cobble content of a similar lithology.

Opencast backfill underlies the shallow variable Made Ground which was very similar in composition across the site and extended to bedrock at varying depths. This generally consisted of grey and orange mostly clayey soils with gravels and silts.

The clays are slightly gravelly to gravelly incorporating gravels of sandstone, siltstone, mudstone, coal and occasional brick, slag, clinker, indescript pebbles, ironstone concretion with a low to medium cobble content of mudstone and siltstone, with isolated brick cobbles and limestone cement. The gravels were sandy clayey and occasionally silty with gravels of sandstone, siltstone, mudstone, brick, clinker and slag, coal and a low to high cobble content of brick, mudstone, siltstone and sandstone. There was also an isolated piece of timber with a slight creosote odour at TP01 0.47-0.76m begl, a piece of metal wire, a brick cobble and limestone cement. There was also a very gravelly slightly clayey silt incorporating gravels of coal and siltstone with isolated fragments of brick.

4.3 Natural Ground

Bedrock was encountered at all seven CP boreholes at depths ranging between 4.50 and 16.00m begl and was observed as a light to dark grey occasionally locally orangey brown highly weathered to weathered mudstone. Engineering bedrock at the CP locations, as determined at the point of SPT refusal ranged between 5.45 and 16.45m begl.

Presumed engineering bedrock was also recorded at all four DP locations as determined by the depth of refusal at 9.00-12.60m begl.

The variation to the depth to bedrock is due to the opencast workings extending across the site.

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4.4 Groundwater

During the fieldwork the following observations of perched groundwater were made.

Table 4: Groundwater

Location	Depth (m AoD)	Observation	Strata
CP01	147.89	Groundwater strike	Opencast Backfill (clay) directly above natural mudstone.
CP02	147.05	Groundwater strike	Opencast Backfill (clay).
CP03	148.29	Groundwater strike	Opencast Backfill (gravel).
CP06	152.15	Groundwater strike	Opencast Backfill (clay).
WS01	155.18	Slow ingress	Sandy silty gravel (Made Ground).
WS03	152.10	Wet strata	Opencast Backfill (gravel).
	151.10	Wet strata	Opencast Backfill (gravel).
WS04	153.77	Slow ingress	Opencast Backfill (gravel).
DP01	151.26	Slow ingress	-
DP02	155.81	Slow ingress	-

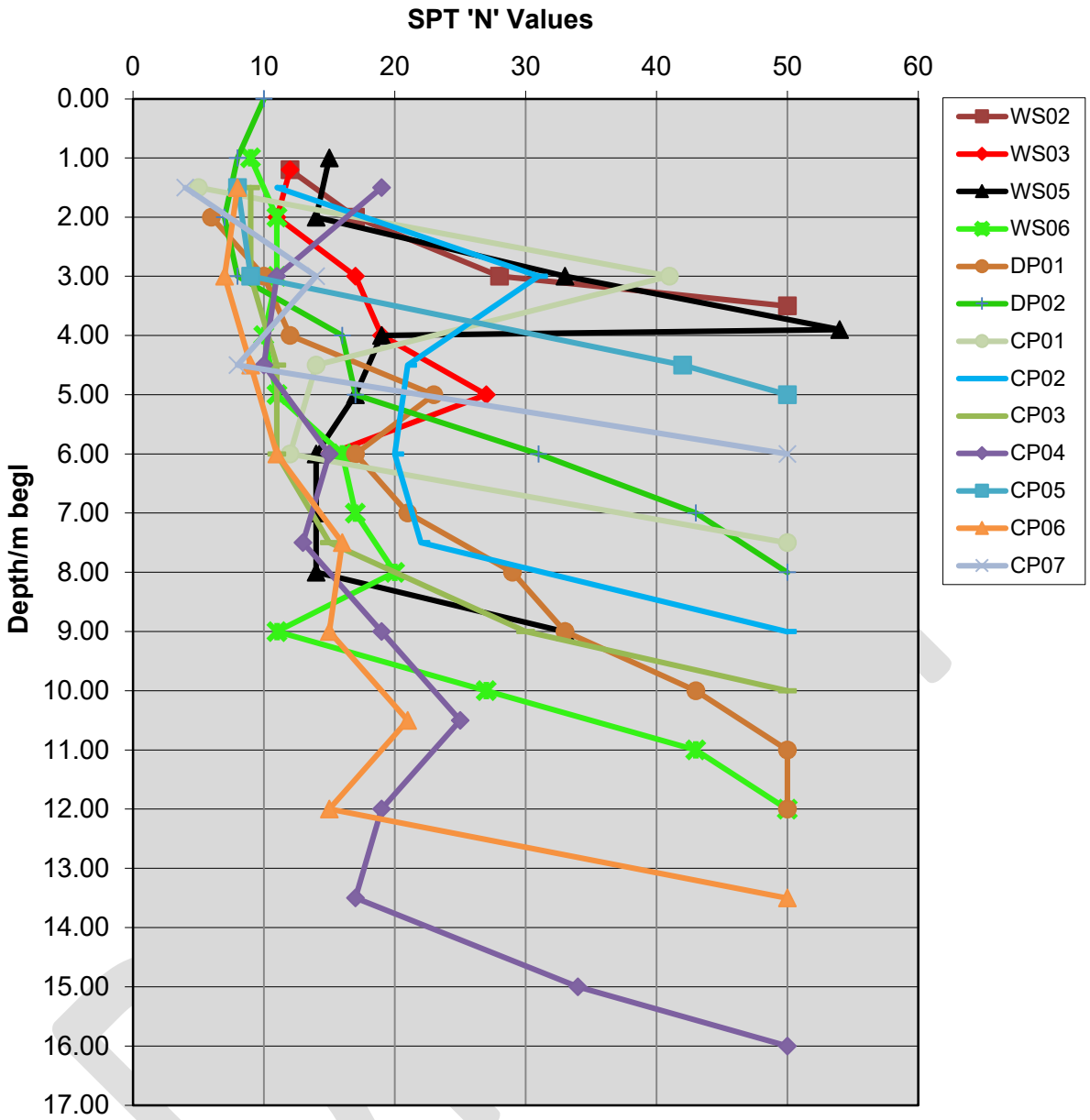
During the subsequent monitoring programme groundwater has been recorded in four of the six monitoring wells at depths ranging between 4.80m and 9.01m begl, with the average deepest groundwater level (AoD) having been recorded at CP06. The results of the groundwater monitoring (with two rounds of monitoring remaining to be completed) are included in Appendix H.

4.5 In-situ Testing for Soil Strength

Standard Penetration Tests (SPTs) were carried out at 1.00m intervals during windowless sampling and at 1.50m intervals during cable percussive drilling. The SPT 'N' values are recorded on the exploratory hole logs provided in Appendix B and are also shown graphically on page 21.

Dynamic probing was undertaken following on from the SPTs completed during window sampling at WS05 and WS06 to depths of 9.80 and 5.60m begl respectively. Standalone dynamic probing was also undertaken at DP01 and DP02 to depths of 12.20 and 9.00m begl respectively. The dynamic probe logs are included in Appendix B and the SPT equivalent N values have been calculated based on a multiplier of 3.1 and are also included in the graph referred to above.

The SPTs and DPs were conducted through Made Ground. The N values exceeded the maximum of 50 at varying depths due to the backfilled opencast workings extending across the site. The depth to bedrock is shallower on the southeastern, northeastern and western edges of the investigation area. The deepest parts of the opencast fill material is across the centre of the site from north to south (DP01, CP04, CP03, WS06 and CP06).


SPT 'N' Values
0
10
20
30
40
50
60
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
11.00
12.00
13.00
14.00
15.00
16.00
17.00
Depth/m begl
WS02
WS03
WS05
WS06
DP01
DP02
CP01
CP02
CP03
CP04
CP05
CP06
CP07

5.0 GEOTECHNICAL ASSESSMENT

5.1 Proposed Works

The investigation has been undertaken for a proposed new manufacturing warehouse to the south east of the existing workshop as shown on Figure 2 (Appendix A) or adjoining the drain further to the southeast in which the intervening area will be developed to serve as a yard.

5.2 Ground Conditions

The site is underlain by Made Ground comprising predominantly opencast backfill to depths ranging between 4.50 and 16.00m begl which is deepest across the central part of the site extending north to south. This overlays a light to dark grey occasionally locally orangey brown highly weathered to weathered mudstone, with the SPT and DP results indicating engineering bedrock to be at depths ranging between 5.45 and 16.45m begl.

The encountered ground conditions are outlined in Section 4.0 and the exploratory hole logs are provided in Appendix B.

5.3 Site Preparation

Based on observations of the excavated materials, heavy plant and / or hydraulic breaking equipment is likely to be required to penetrate the bituminous surfaced carpark and the concrete slab below (see exploratory logs).

Excavations where access is required should be supported in accordance with CIRIA RR97 (Ref. J).

Excavations should be regularly inspected by a competent person to ensure continued safety. Further advice on the safety of excavations is given in *Health and Safety in Construction* (Ref. K).

Perched groundwater has been recorded during the monitoring programme across the investigation area at depths of between 4.80m and 9.01m begl. Whilst it is therefore unlikely that dewatering of excavations will be required, it should be noted that groundwater levels can vary on a seasonal basis and therefore may be higher during winter months or following periods of prolonged rainfall.

5.4 Geotechnical Laboratory Results

Plasticity

Twenty samples of the natural cohesive soil were taken from depths ranging between 0.76m and 16.00m begl and subjected to testing for atterberg limits and moisture content. The testing results are provided in Appendix D and show that the cohesive soils below the investigation area were reported as clays of intermediate to high plasticity.

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The plasticity indices have been used to calculate modified plasticity indices which equate to a worse case low to medium volume change potential.

The plasticity characteristics of clays are typically considered in relation to any vegetation or trees that may exist in close proximity to the finished foundation design. Consideration of features such as tree roots and appropriate design depths are addressed in Chapter 4.2 of the NHBC standards 2020 (Ref. L). These results should be compared to the guidance by an appropriately qualified design engineer.

Protection of Buried Concrete

The Design Sulphate Class for the use of concrete in structures has been derived in accordance with BRE Special Digest 1 (Ref. M) as DS-3 and the Aggressive Chemical Environment for Concrete (ACEC) class is AC-2s. This is based on the following:

- The characteristic value for sulphate in soil (2:1 leachate equivalent) being 700mg/l and for sulphate in groundwater being 2100mg/l;
- The characteristic value for soil pH is pH6.9 and groundwater pH5.6;
- The characteristic value for total potential sulphate is 1.09%. This takes into account the potential presence of pyrite within the soils, although the number of samples in which the amount of oxidisable sulphides is more than 0.3% is not significant ;
- Anticipated static groundwater (predominantly cohesive soils); and
- Having no need to take into account magnesium concentrations because sulphate concentrations in soil are less than 3000mg/l.

Particle Size Distribution

Nine samples were recovered from depths of between 0.15-14.00m begl across the site and tested for particle size distribution (sieve and sedimentation). The results are included in Appendix D.

5.5 Foundations

The investigation has found that the Made Ground extends to variable depths ranging between 4.50 and 16.00m begl and this is of variable strength. The N values from the SPTs show the variability of the Made Ground which results in the material being unsuitable as a founding stratum.

On this basis it is considered that the use of traditional foundations is not possible and an alternative foundation solution would be to use a reinforced strip footing / ring beam or concrete pads supported by piles driven through the fill into competent bedrock at depths ranging between 5.45 and 16.45m begl. This should also alleviate any excessive differential settlement to which the proposed manufacturing warehouse would otherwise be particularly susceptible.

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5.6 Floor Slab

When reviewing options for floor slab design, the designer should take into consideration the options for providing the necessary ground gas protection to the buildings (see Section 7.0). Options may include a reinforced concrete ground slab or suspended beam and block floor with underfloor void.

If a reinforced ground floor slab is proposed it will be important to ensure that each floor slab construction is located on similar founding material. Excavations should be inspected and any soft spots removed and replaced with a suitable grade of engineered fill to help alleviate the potential for differential settlement.

5.7 Pavement Construction

Due to the presence of Made Ground of a more variable nature within the top 1.00m, with the exception of the area of the existing bitumen surfaced car park / yard, the material would be unsuitable as a sub base for the construction of a pavement to withstand heavy traffic loads where the material may be susceptible to excessive differential settlement.

Prior to construction, proof-rolling and removal of weaker soils and replacement with a suitable grade of engineered fill should take place. Subject to the proposed finished ground levels, an increased capping layer thickness and geotextile layer may be required. A minimum of 450mm non-frost susceptible material is advised for the construction thickness.

It will be important to ensure that the pavement construction is located on similar founding material across the site. Excavations should be inspected and any soft spots removed and replaced with a suitable grade of engineered fill to help alleviate differential settlement.

5.8 Material Reuse

Based on a review of the chemical laboratory test results for the Made Ground, with the exception of the surface deposits of reddish brown sand (see Section 6.0), it is considered that the material is chemically suitable for reuse on site as a general fill. However, depending on the proposed use for the material, segregation of the granular from the cohesive materials may be required and some of it may need to be recycled using suitable crushing and screening plant to make it physically suitable for use as an engineered fill. The material may also need to undergo geotechnical laboratory testing to confirm suitability.

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6.0 CONTAMINATION ASSESSMENT

6.1 Visual and Olfactory Evidence for Contamination

During the investigation slight creosote odours were noted originating from the soils from CP04 at a depth of 0.00-4.00m begl and from a piece of timber at a depth of 0.47-0.76m begl in TP01.

During the monitoring program a slight sulphurous odour was noted from CP04 on the third visit. The depth to water was 5.48m and the depth to the base of the monitoring well was 10.05m begl.

Apart from the above, no other obvious visual and/or olfactory signs of potential contamination (such as hydrocarbon sheen and odours) were noted from the soils or waters during the investigation and subsequent monitoring program.

6.2 Assessment Criteria for Soils

A generic quantitative risk assessment (GQRA) for human health has been undertaken in which the chemical testing results for soils have been assessed against generic assessment criteria (GAC) (also known as Soil Screening Values), with reference values obtained from the following:

1. Suitable 4 Use Levels (S4ULs) for human health risk assessment (Ref. N). This specifies S4ULs for a range of common contaminants above which the concentrations could pose an unacceptable risk to the health of site users which may warrant further investigation or remediation. S4ULs are specified for 6 categories of land use (residential with and without homegrown produce, allotments, commercial, public open space near residential housing and public parks).
2. Category 4 Screening Levels (C4SLs) (Refs. O & P). These were issued for a small number of substances to determine if a site is suitable for a proposed use and if such a site may be deemed to be contaminated in accordance with Part 2A of the Environmental Protection Act 1990. The C4SLs are specified for the same 6 categories of land use listed under 1 (above).
3. Soil Generic Assessment Criteria (GAC) for Human Health Risk Assessment (Ref. Q). GACs are specified for 4 categories of land use (residential with and without homegrown produce, allotments and commercial).

For the purposes of this assessment the analytical results on the soil samples have been compared against the values for commercial land use, reflecting the proposed continued use as a manufacturing warehouse for processing stainless steel and nickel alloy into manufactured products.

For the assessment of organic compounds (such as polyaromatic hydrocarbons (PAHs) and petroleum hydrocarbons (TPHs)), assessment values relevant to a soil organic matter (SOM) content of 2.5% have been used based on the average SOM value determined from across the area of the investigation of 2.3%.

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A conceptual (source-pathway-receptor) model is required for the site in order to establish a risk. In this instance, the model would simply consist of any contamination (the 'source') in the ground passing via a 'pathway' (direct contact, or by plant uptake from a derivative soil) to reach a 'receptor' (human (construction worker, resident / visitor), controlled waters, ecological or property).

This risk assessment considers the 'source' term initially. Where the source term is not considered to present a significant risk following the GQRA, then no further modelling is required.

6.3 Assessment of Results

The chemical laboratory results are provided in Appendix E and the soil contamination screening assessment for human health is provided in Appendix F with any exceedances above the soil screening values (SSVs) highlighted. This has identified the following:

- Asbestos fibres in three of the eighteen samples from the Made Ground tested for asbestos detailed as follows:
  - Chrysotile (white) asbestos fibres at CP01 beneath existing car park at a depth of 0.13-0.38m begl.
  - Amosite (brown) asbestos fibres at CP01 at a depth of 0.70-0.75m begl.
  - Amosite asbestos fibres beneath at WS01 beneath the existing car park at a depth of 0.18-0.48m begl.

  Subsequent testing for quantification (%) of asbestos within each of the samples determined values of between 0.001 and 0.002% respectively. These are considered low level quantifications and are well below the 0.1% threshold at which the soil would be classified as hazardous for waste disposal purposes.

  Whilst two samples were identified to contain asbestos fibres at CP01, a deeper sample from 0.93-1.28m begl at the same location did not detect any asbestos. No asbestos was detected in the sample tested from CP02 (also within the existing car park). The occurrence of asbestos fibres within the car park is therefore considered to be isolated to sporadic and at low level.

- A single isolated elevated concentration above the SSV in nickel from the surface deposit of sand (Made Ground) at a depth of 0.00-0.10m begl at CP03 (centre of investigation area). The concentration determined was 1400mg/kg compared to the SSV of 980mg/kg. Subsequent testing for nickel in a deeper sample of the Made Ground at 1.50m begl at the same location determined a concentration of 21mg/kg which is well below the relevant SSV.

  It is understood that the sand in which the elevated nickel concentration was determined, is used in the cutting of the metals (including nickel alloys) within the factory. The sand was also tested for oils which determined a concentration below the detection limit (<10mg/kg).

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Whilst two samples of the opencast backfill (0.50-0.55m at DP01 and 3.00-3.50m begl at CP07) were found to be in the potentially combustible range for calorific value, the values determined (4.1 and 3.0MJ/kg) were at the lower end of the potentially combustible range of 2-10MJ/kg and therefore not considered significant.

Eleven soil samples were analysed for petroleum hydrocarbons (TPHs) and benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tert-butyl ether (MTBE) and the concentrations determined were all below the relevant SSVs, with the vast majority being below the limits of detection. The samples tested included soils in which the slight creosote odours had been noted in CP04 and TP01 (see section 6.1).

Twenty-one soil samples were analysed for polyaromatic hydrocarbons (PAHs) and the concentrations determined were all below relevant SSVs, with many also being below detection limits. The samples tested included soils in which the slight creosote odours had been noted (see section 6.1).

Soil pH ranged from pH6.3 (slightly acidic) to pH11.3 (very strongly alkaline) with an average of pH8.0 across the investigation area as a whole, indicative of moderately alkaline soil conditions.

6.4 Controlled Waters

The screening assessment for controlled waters (surface and groundwater) has been completed following the sampling and chemical analysis of three samples of perched groundwater from WS03, CP04 and CP06). The samples were analysed for the suite of determinands listed in Table 3.

The sampling of groundwater at CP04 and CP06 followed the purging of 30 litres of water from the well immediately prior to sampling. This procedure was unable to be followed at WS03 where the head of water was only 1.10m and the recharge rate was low. Apart from a slight sulphurous odour from CP04, there were no visual or olfactory indicators of potential contamination noted in the water at the time of sampling.

As part of the assessment of controlled waters, the sample of surface sand in which the elevated concentration of nickel was determined above the SSV for nickel at CP03 was also subjected to soil leachate testing[7] to determine the propensity for nickel within the sand to leach into groundwater.

Assessment Criteria for Controlled Waters

A GQRA has been undertaken in which the chemical laboratory results from the groundwater and soil leachate testing have been assessed against health or environmental 'screening' criteria, termed Generic Assessment Criteria (GAC) selected from the following published guidance:

[7] Soil leachate testing conducted in accordance with BS EN 12457-2 (10:1).

- Water Supply (Water Quality) Regulations 2018 (UK drinking water standards);
- Surface Waters (Abstraction for Drinking Water) (Classification) Regs 1996;
- Maximum Allowable Concentrations (MAC) under the Environmental Quality Standards (EQS) for inland surface waters;
- Annual Average (AA) concentrations under the EQS for inland surface waters;
- WHO Guidelines, 2008 & 2017;
- Surface Water Directive;
- WRc plc, R&D Technical Report p45, 2002;
- Drinking Water Inspectorate, London, 2006.

Assessment of Results for Controlled Waters

The chemical laboratory results on the water and soil leachate testing are included in Appendix E and the screening assessment is provided in Appendix G, with any exceedances highlighted. This has identified the following:

- Elevated concentrations in excess of the GAC for Nickel in the groundwater samples from WS03 at 4.80-5.90m and CP04 5.48-10.05m begl. The concentrations determined were 72ug/l and 58ug/l respectively compared to the GAC of 20ug/l. Whilst the margin of exceedance is up to more than three times the GAC, the GAC is a drinking water standard and therefore highly conservative for the hydrogeological setting. The leachate testing has also shown that the elevated nickel in the surface sand from CP03 is not potentially leachable at concentrations above its GAC.

- Elevated concentrations in excess of the GAC for ammoniacal nitrogen in all three groundwater samples (WS03, CP04, CP06) where the respective concentrations determined were 7.4, 3.9 and 0.68mg/l compared to the GAC of 0.5mg/l. Again, the GAC for ammoniacal nitrogen is a drinking water standard and therefore highly conservative for the hydrogeological setting.

  Ammoniacal nitrogen is a landfill marker and is considered likely to be associated with the opencast backfill extending across the site and beyond the site to the north and south (no historic or current or recent licensed landfills have been recorded with 250m of the site in the Phase 1 report).

- Slightly elevated concentrations in biochemical oxygen demand (BOD) from WS03 and CP04 where the concentrations determined were 5.6 and 7.1mg/l respectively compared to the GAC of 5mg/l.

  An elevated value for electrical conductivity in groundwater from CP04 where the value determined was 4300uS/cm compared to the GAC of 2500uS/cm. It should be noted that the GAC for conductivity is a drinking water standard and is therefore highly conservative for the hydrogeological setting

  Both BOD and conductivity are landfill leachate indicators and are considered likely to be associated with the opencast backfill extending across the site and beyond the site to the north and south.

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- Elevated concentrations above relevant GACs in 8 no. PAH compounds in groundwater from CP04. The concentrations determined were 34ug/l for naphthalene compared to the GAC of 2.4ug/l, 13ug/l for anthracene compared to the GAC of 0.4ug/l, 31ug/l for fluoranthene compared to the GAC of 1ug/l, 12ug/l for benzo(a)pyrene compared to the GAC of 0.01ug/l and 36.3ug/l for a combination of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i) perylene and indeno(1,2,3-c,d)pyrene compared to the GAC of 0.1ug/l.

  The elevated PAHs may be associated with the slight creosote odour noted within the soils in the top 4.00m at CP04 in which slightly elevated concentrations in PAHs were determined albeit below the soil GACs.

  The possibility of similar concentrations in PAHs in groundwater from the other two locations (WS03 and CP06) also cannot be discounted because the detection limits were not low enough to determine the presence of any such elevations. This has been queried with the chemical laboratory and it is understood that the detection limits had to be raised because of the quantity of sediment.

  It is recommended that groundwater is resampled from these locations using a different method of sampling which prevents sediment present within the boreholes being incorporated into the sample (the sediment may be the source of the elevated PAHs).

The pH of the groundwater from WS03 was found to be moderately acidic with a pH of pH5.6 and the pH from CP04 was found to be slightly acidic with a pH of pH6.2. Whilst this is outside the desired range of pH6.5-10, this is a drinking water standard and therefore not a strict requirement at this location.

6.5 Waste Acceptance Criteria

For the purposes of surplus soil materials requiring excavation from the area of the proposed development for offsite disposal, testing for Waste Acceptance Criteria (WAC) was conducted on three samples from the Made Ground from across the investigation area at WS03, CP01 and CP04. It should be noted that the WAC test determines the appropriate category of landfill site for the material (inert, stable non-reactive hazardous waste or hazardous waste landfill) or whether pre-treatment is required. It is not a test for the waste classification of the soil.

The WAC testing results are included in Appendix E and show that the Made Ground from CP01 at a depth of 0.13-0.38m begl, falls into the category of acceptance for disposal as stable non-reactive hazardous waste in a non-hazardous landfill. This is due to the threshold value for acceptance at an inert landfill having been exceeded for TPHs and total organic carbon.

The testing has also shown that the Made Ground from WS03 at a depth of 1.00-6.00m and CP04 at a depth of 0.02-3.40m begl is not suitable for disposal to landfill and requires some pre-treatment (such as biological, thermal, or other method) prior to landfill acceptance. This is due to the threshold values for acceptance at a hazardous waste landfill having been exceeded for loss on ignition.

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7.0 INTERIM GROUND GAS RISK ASSESSMENT

7.1 Gas Monitoring Programme

A programme of gas monitoring involving visits approximately every two weeks over a three month period (equating to six visits in total) is presently underway from standpipe installations established at six borehole locations (WS02 & WS03, CP01 and CP04-06). At the time of completing this interim report, two monitoring visits remained to be completed.

7.2 Gas Monitoring Results

The results of the gas monitoring are provided in Appendix H and reveal high carbon dioxide concentrations ranging from 3.5 to 42.2% by volume in air (v/v). All monitoring points have exceeded 5% v/v carbon dioxide at least once during the four visits. The highest recorded carbon dioxide concentration has been recorded in CP01 which also has the highest average carbon dioxide concentration of 24.3% v/v.

Very low concentrations in methane have been detected ranging from below the limit of detection (<0.1% v/v) to 0.2% v/v.

A detectable concentration in carbon monoxide was also recorded from two locations (CP01, CP06), but only on one occasion at each position at the start of the monitoring programme and each at a very low concentration of 1 part per million (ppm) which is below the HSE eight hour time weighted exposure limit of 30ppm[8]. No detectable concentrations of hydrogen sulphide gas have been recorded.

Depleted levels of oxygen have been recorded at all six monitoring well locations, with depleted concentrations reaching a minimum of 18.5% v/v at WS02, 16.5% v/v at WS03, 0.8% v/v at CP01, 7.9% v/v at CP04, 15.3% v/v at CP05 and 3.5% v/v at CP06.

Borehole flow rates ranged from below the limit of detection (<0.1 l/hr) to 0.6 l/hr. A negative flow rate was also recorded at WS03 on one occasion of -0.2, indicative of a slight suction.

Atmospheric pressure during the monitoring visits ranged between 986 and 999 millibars (mb), with optimal monitoring conditions (low and falling atmospheric pressure to cover a 'worst case' scenario) being prevalent on the following occasions[9]:

- Visit 4 – Low atmospheric pressure of 998-999mb with falling pressure trend.

7.3 Assessment of Results

The gas monitoring results have been assessed in accordance with CIRIA Report C665 (Ref. E) by determining the Gas Screening Values (GSVs). These are calculated by multiplying the maximum gas concentrations with maximum recorded gas flow. On this basis the GSV for methane has been calculated to be (0.2/100 x 0.6) 0.0012 l/hr and the GSV for carbon dioxide has been calculated to be (42.2/100 x 0.6) 0.2532 l/hr.

[8] CIRIA C758D *Abandoned mine workings manual*, CIRIA, 2019.
[9] A minimum of two monitoring visits are usually required to be conducted under optimal conditions.

The proposed development falls into Situation A[10] under CIRIA C665 and therefore the GSVs can be assessed against the Modified Wilson and Card Classification which is reproduced as Table 5.

Table 5: Modified Wilson and Card Classification (from Table 8.5 of CIRIA C665)

Characteristic Situation (CIRIA Report 149)	Risk Classification	GSV (CH_4 or CO_2) (l/hr)[1]	Additional Factors	Typical Source of Generation
1	Very low risk	<0.07	Typically methane ≤1%v/v and /or carbon dioxide ≤5%v/v. Otherwise consider increase to Situation 2.	Natural soils with low organic content. "Typical" Made Ground
2	Low risk	<0.7	Borehole flow rate not to exceed 70 l/hr. Otherwise consider Situation 3.	Natural soil, high peat/organic content. "Typical" Made Ground
3	Moderate risk	<3.5		Old landfill, inert waste, mineworking flooded
4	Moderate to high risk	<15	Quantitative risk assessment required to evaluate scope of protective measures.	Mineworking susceptible to flooding, completed landfill (WMP 26B criteria)
5	High Risk	<70		Mineworking unflooded, inactive with shallow workings near surface
6	Very high risk	>70		Recent landfill site

Notes:

1. Gas screening value: litres of gas/hour is calculated by multiplying the gas concentration (%) by the measured borehole flow rate (l/hr);
2. Site characterization should be based on gas monitoring of concentrations and borehole flow rates for the minimum periods as defined within CIRIA Report 659;
3. Source of gas and generation potential/performance must be identified;
4. Soil gas investigation to be in accordance with guidance contained within CIRIA Report 659;
5. If there is no detectable flow, use the limit of detection of the instrument;
6. The boundaries between the Partners in Technology classifications do not fit exactly with the boundaries for the above classification.

This shows that the calculated GSVs and typical maximum gas concentrations for methane fall into Characteristic Situation (CS) 1 (Very low risk), but the calculated GSVs and typical maximum gas concentrations for carbon dioxide equate to Characteristic Situation 1 (Low risk). This means that precautionary measures are required to prevent gas ingress and Table 8.6 in CIRIA C665 (see extract on next page) provides the typical scope for such measures in new buildings (see right column).

[10]CIRIA C665 specifies two categories of development with separate classifications for assessing gas risk; these being Situation A (for types of development other than that falling within the definition of situation B, such as factories, shops, commercial uses, warehouses, schools, cinemas, sports centres, stadiums, high rise housing, housing with basements etc) and situation B applicable to low rise housing with a ventilated underfloor void of a minimum 150mm.

This report should be supplied to the appointed designer who will need to formulate an appropriate design specification for the gas protection measures with reference to BS 8485:2015+A1:2019[11] and other guidance, as appropriate. The design will need to be incorporated into a Remediation Strategy Report (with any other proposed remedial measures) for submission to and for approval by the local Authority.

Typical scope of gas protective measures

Characteristic situation	Residential building (not those which belong to Situation B)[1]		Office/commercial/industrial development	
(From Table 8.5)	Number of levels of protection	Typical scope of protective measures	Number of levels of protection	Typical scope of protective measures
1	None	No special precautions	None	No special precautions
2	2	a. Reinforced concrete cast *in situ* floor slab (suspended, non-suspended or raft) with at least 1200 g DPM[2] and underfloor venting. b. Beam and block or pre-cast concrete and 2000 g DPM/ reinforced gas membrane and underfloor venting. All joints and penetrations sealed.	1 to 2	a) Reinforced concrete cast *in situ* floor slab (suspended, non-suspended or raft) with at least 1200 g DPM[2]. b) Beam and block or pre cast concrete slab and minimum 2000 g DPM/reinforced gas membrane. c) Possibly underfloor venting or pressurisation in combination with a) and b) depending on use. All joints and penetrations sealed.

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[11]BS 8485:2015+A1:2019 *Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings*.

8.0 REFINED CONCEPTUAL SITE MODEL & GEO-ENVIRONMENTAL RISK ASSESSMENT

8.1 Refined Conceptual Site Model

The initial Conceptual Site Model (CSM) provided in the August 2023 Phase 1 report prepared by Inspire Design & Development Ltd has been revised following completion of the Phase 2 investigation and is presented below.

Table 6: Refined Conceptual Site Model

Potential Pollutant (Source)	Potential Linkage (Pathway)	Receptor
***On Site*:** Opencast mining (infilled ground). Existing metal manufacture / fabricators. Air shaft (N corner of site [not within development area]) Radon gas. **Contaminants in soil:** - Elevated nickel of low leaching potential in surface deposits of sand. - Isolated to sporadic asbestos fibres at low quantification in shallow Made Ground beneath car park. **Contaminants in Groundwater:** - Elevated nickel. - Elevated PAHs. - Elevated conductivity, BOD & ammoniacal nitrogen (associated with opencast backfill). ***Off Site*:** COMAH (adj. NW, record relating to Mercedes Benz (uk) Ltd). Unspecified workings (22m N). Tanks (53-56m NW, 105m NW, 122-157m NW, 160-191m NW, 196m NW & 240m SW). Made Ground (56m N). Colliery (57m NW, 72m N, 97m N, 113m N,). Unspecified commercial (62m NW, 68m NW & 77m NW). Electrical substation (77m NW, 99m SW & 195m S). Metal manufacturers, fabricators (78m NW). Shafts (79m S & 228m N). Fire station (99m W). Farm (100m S). Railway land (from 101m NW) Gasometers (118m NW). Disused tip (124m N). Ponds (131m N, 139-143m W & 148m N). Refuse heap (132m N). Pumping shaft (228m N). Ironstone pits (232m SE). Radon gas.	Emission, migration, and inhalation of gases / vapours. Inhalation of soil, water, or dust. Dermal contact with / ingestion of contaminated soil, water, dust. Migration / leaching, runoff and percolation through soils and rock joints. Volatisation of contaminants to indoor or outdoor air. Service pipes. Physical disturbance. Ground instability / differential settlement.	Construction workers. Site end users (staff & visitors). Neighbouring occupants (industrial & pedestrian public). Groundwater in Secondary A Aquifer (high groundwater vulnerability), poor GW quality regionally, no licensed GW abstractions in 1km. Surface waters (ephemeral drain crossing site, Birdwell Dike 690m N, no licensed GW abstractions within 2km). Ecological features (Potter Holes LNR adj NE, Priority Habitat deciduous woodland adj. NE & SE). Property (existing site buildings, proposed development, neighbouring industrial properties, two Grade II listed buildings 162m S & 209m SE and local road infrastructure and utilities).

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8.2 Updated Geo-Environmental Risk Assessment

This section aims to expand the CSM to reassess the level of risk for each potential pollutant linkage following completion of the investigation and the updated assessment is provided in Table 7.

Table 7: Revised Geo-Environmental Risk Assessment

Receptor	Potential Pollutant Linkage	Estimated Degree of Risk to Receptor
Construction Workers	Migration and inhalation of ground gas (methane & carbon dioxide) – Working in confined space / excavation risk.	Moderate (TBC)
	Migration and inhalation of radon gas.	Very Low
	Physical disturbance (of buried WWII UXO).	Low
	Inhalation of soil, water, or dust.	Low*
	Dermal contact with/ ingestion of contaminated soil / water / dust.	Low*
	Volatilisation of contaminants to indoor or outdoor air.	Low
Site End Users (Commercial Occupants & their Visitors)	Migration and inhalation of ground gas (methane & carbon dioxide).	Moderate / High (TBC)
	Migration and inhalation of radon gas.	Low
	Inhalation of soil/water or dust.	Low
	Dermal contact with/ingestion of contaminated soil/water/dust.	Low
	Volatilisation of contaminants to indoor or outdoor air.	Very Low
Neighbouring Occupants	Migration and inhalation of ground gas (methane & carbon dioxide).	Low (TBC)
	Migration / leaching / runoff.	Low**
	Inhalation of soil, water, or dust.	Low**
	Dermal contact with/ingestion of contaminated soil / water / dust.	Low**
Surface Water	Physical disturbance, migration / leaching / runoff.	Low / Moderate**
Groundwater	Migration / leaching / runoff.	Low**
Ecological Systems	Habitat disturbance (physical, noise, dust), migration / leaching / runoff. It is understood that ecologists have been appointed for the project).	Low**
Property (Land & Buildings)	Migration, accumulation, and ignition of methane.	Very Low (TBC)
	Migration / leaching / runoff.	Low**
	Ground instability / differential settlement	Moderate
	Slope instability.	Low

TBC To Be Confirmed (one monitoring visit remaining)
* Assumes basic PPE is used (including gloves and long-sleeved overalls).
** Assumes good site construction practice, including, relevant reports, control of runoff / spillages and dust control.

In this risk assessment, an overall **Very Low to High** risk is applicable following completion of the intrusive site investigation.

APPENDIX A

Figures

Figure 1: Site Location

Figure 2: Exploration Hole Locations

Drawings

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Project No: 23236
Client: Jarvale Construction Ltd
Project: Jacquet UK Ltd, Wentworth Park Industrial Estate, Tankersley, Barnsley, S75 3DH
Date: July 2024

Title:

Site Location

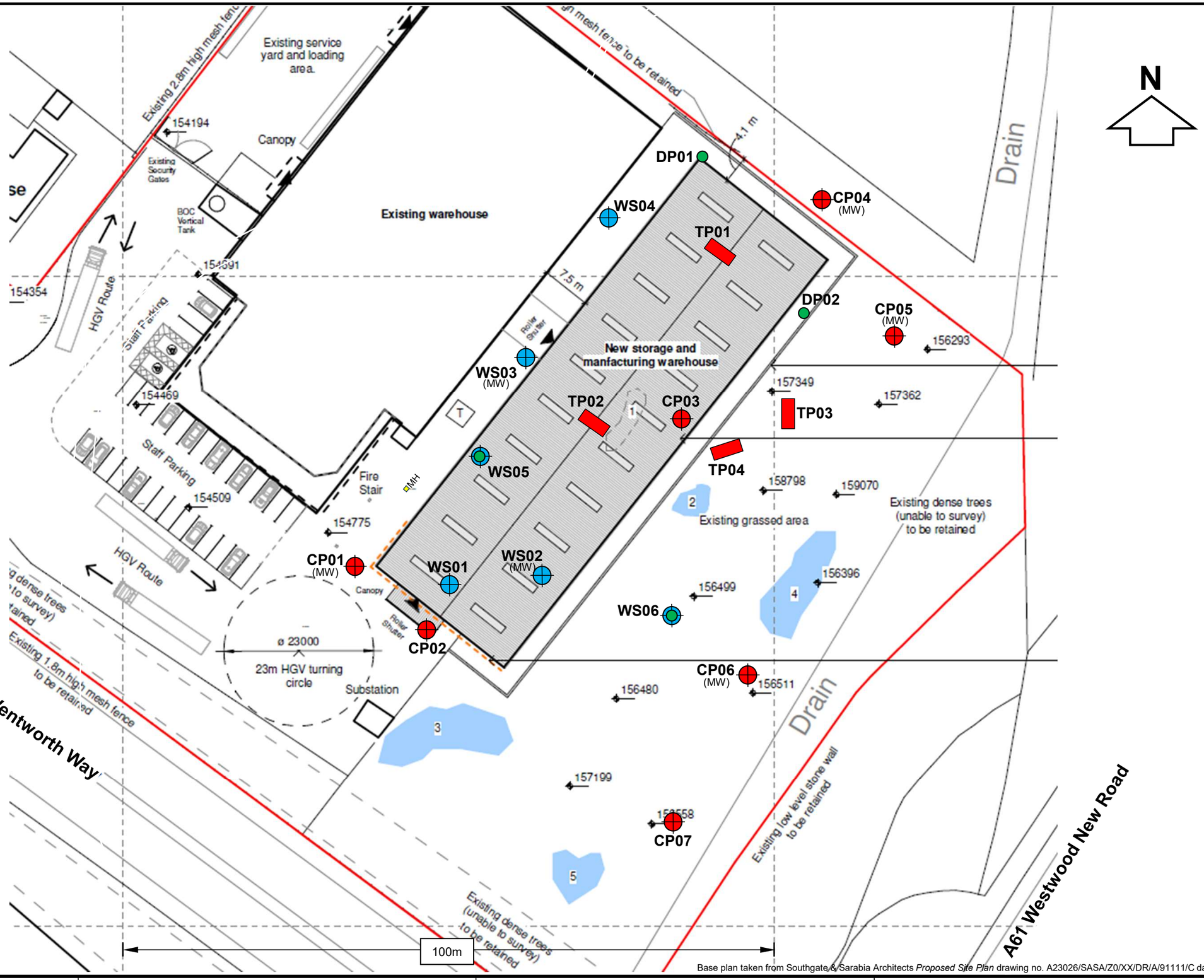
Key:

Site Location

Scale: Grid squares are 1km

SILKSTONE ENVIRONMENTAL
GEOTECHNICAL, PLANNING & SURVEYING CONSULTANTS
A PHENNA GROUP COMPANY

Fig: 1



Base plan taken from Southgate & Sarabia Architects *Proposed Site Plan* drawing no. A23026/SASA/Z0/XX/DR/A/91111/C dated 16/06/2023

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A PHENNA GROUP COMPANY

Key:

- Site Boundary
- **CP01** (MW) — Cable percussive borehole location (with monitoring well installation)
- **WS02** (MW) — Windowless sampling location (with monitoring well installation)
- **DP01** — Dynamic probe location
- **TP02** — Machine excavated trial pit

Project No: 23236
Client: Jarvale Construction Ltd
Project: Jacquet UK Ltd, Wentworth Park Industrial Estate, Tankersley, Barnsley, S75 3DH
Date: September 2024

Title:

Exploration Hole Locations

Fig: 2

APPENDIX B

Exploration Hole Logs

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Silkstone
Environmental Ltd
www.silkstoneenvironmental.co.uk

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Chapeltown, S35 2PH
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BOREHOLE LOG

Project				BOREHOLE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**CP01**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	16-07-24	154.89	E 434,036.2 N 399,555.1	
Contractor				Sheet
DMW Drilling Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION			
				154.80		0.09	MADE GROUND: Dark grey asphalt.			
0.13-0.38	ES1			154.76		0.13	MADE GROUND: Light whitish grey sandy GRAVEL of limestone (type 1 / sub base).			
				154.51		0.38				
				154.35		0.54	MADE GROUND: Dark grey sandy angular fine to coarse GRAVEL of sandstone, brick, coal and occasional slag.			
0.70-0.75	ES2			153.96		0.93				
0.93-1.28	ES3						MADE GROUND: Light grey concrete.			
0.93-1.28	D4						MADE GROUND: Grey slightly sandy gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone, brick, slag and concrete with isolated fragment of metal wire.			
1.50		N5					MADE GROUND: Orange mottled light whitish grey slightly gravelly CLAY with occasional dark greyish black pockets. Gravel is angular to rounded fine to medium of sandstone, weathered coal and occasional fine brick (OPENCAST BACKFILL).			
						(2.67)				
			1				At 1.95m pocket of coal.			
3.00		N41								
				151.29		3.60				
3.60	ES5						MADE GROUND: Light grey gravelly CLAY. Gravel is angular coarse of laminated mudstone and occasional brick (OPENCAST BACKFILL).			
						(0.90)				
				150.39		4.50				
4.50	D6						MADE GROUND: Orangey brown and orangey grey gravelly CLAY with medium cobble content of angular mudstone. Gravel is angular fine to coarse of mudstone and sandstone (OPENCAST BACKFILL).			
4.50		N14								
						(2.50)				
6.00-6.45	B7									
6.00		N12								
			1							
				147.89		7.00				
						(0.50)	Dark grey highly weathered MUDSTONE incorporating occasional coal and carbonaceous mudstone.			
				147.39		7.50				
7.50-7.95	D8						Terminated on SPT refusal in dark grey MUDSTONE at 7.95m begl.			
7.50		N50/ 80 mm								

Boring Progress and Water Observations						Chiselling			Water Added	
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To

GENERAL REMARKS

1. Hand dug inspection pit followed by CP drilling.
2. Water strike at 7.00m begl.
3. No visual or olfactory evidence of potential contamination.
4. Monitoring well to 7.50m begl.

All dimensions in metres Scale 1:62.5	Client Jarvale Construction Ltd	Method/ Plant Used Dando 2000	Logged By NP & AH

BH LOG 10M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 3/9/24

Silkstone
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BOREHOLE LOG

Project				BOREHOLE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**CP02**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	16-07-24 17-07-24	155.55	E 434,047.5 N 399,545.6	
Contractor				Sheet
DMW Drilling Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.16-0.33 0.16-0.78	ES1 ES2			155.43 155.39 155.22 155.19 155.06 154.77		0.12 0.16 0.33 0.36 0.49 0.78 (0.72)	MADE GROUND: Dark grey asphalt. MADE GROUND: Light whitish grey sandy GRAVEL of limestone (type 1 / sub base) above several small tree roots. MADE GROUND: Dark greyish black sandy subangular fine to coarse GRAVEL of sandstone, mudstone and occasional brick, concrete, clinker and slag.		
1.50 1.50 1.50	ES3 D4	N11		154.05		1.50 (1.90)	MADE GROUND: Grey subrounded medium GRAVEL of sandstone. MADE GROUND: Light grey concrete. MADE GROUND: Grey slightly clayey sandy subangular fine to coarse GRAVEL of sandstone, mudstone, brick, clinker and slag (OPENCAST BACKFILL). MADE GROUND: Grey sandy gravelly CLAY with medium cobble content of laminated mudstone. Gravel is subangular fine to coarse of sandstone, mudstone and brick (OPENCAST BACKFILL).		
3.00		N31		152.15		3.40	MADE GROUND: Light grey mottled yellowish brown, locally red slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse of mudstone, sandstone and coal (OPENCAST BACKFILL).		
				151.05		(1.10) 4.50	MADE GROUND: Dark grey angular fine to coarse GRAVEL of mudstone (OPENCAST BACKFILL).		
4.50 4.50 4.50	ES5 B6	N21		149.55		(1.50) 6.00	MADE GROUND: Grey gravelly CLAY with low to medium cobble content of angular mudstone. Gravel is angular fine to coarse of same lithology (OPENCAST BACKFILL).		
6.00-6.50 6.00	D7	N20	1	148.05		(1.50) 7.50	MADE GROUND: Grey gravelly CLAY. Gravel is angular to subangular fine to coarse of mudstone and sandstone (OPENCAST BACKFILL).		
7.50 7.50	D8	N22	1	147.05		(1.00) 8.50	MADE GROUND: Orangey brown gravelly CLAY. Gravel is angular fine to coarse of mudstone, sandstone and isolated fine brick or brick shale (OPENCAST BACKFILL).		
8.50	B9			146.55		(0.50) 9.00	MADE GROUND: Grey gravelly CLAY. Gravel is angular fine to coarse of mudstone (OPENCAST BACKFILL).		
9.00		N50/ 95 mm					Terminated on SPT refusal on light grey weathered MUDSTONE at 9.45m begl.		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

GENERAL REMARKS

1. Hand dug inspection pit followed by CP drilling.
2. Water strike at 8.50m begl.
3. Cased to 9.00m begl.
4. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:62.5	Client Jarvale Construction Ltd	Method/ Plant Used Dando 2000	Logged By NP & AH

BH LOG 10M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 24/9/24

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BOREHOLE LOG

Project				BOREHOLE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**CP03**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	17-07-24 18-07-24	156.29	E 434,086.1 N 399,578.7	
Contractor				Sheet
DMW Drilling Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.00-0.10	ES1			156.19		0.10	MADE GROUND: Reddish brown locally orange SAND with occasional gravel to cobble sized machined metal offcuts.		
						(1.40)	MADE GROUND: Light brownish grey locally yellowish grey gravelly CLAY with rootlets. Gravel is angular fine to coarse of mudstone and sandstone. Mudstone is often thickly laminated and carbonaceous (OPENCAST BACKFILL).		
				154.79		1.50			
1.50 1.50 1.50	ES2 D3	N9				(1.50)	MADE GROUND: Light yellowish grey locally black slightly gravelly CLAY. Gravel is angular fine to coarse of mudstone, sandstone and occasional coal (OPENCAST BACKFILL).		
				153.29		3.00			
3.00		N9				(1.50)	MADE GROUND: Grey locally orange and black slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of mudstone, sandstone and occasional coal (OPENCAST BACKFILL).		
				151.79		4.50			
4.50 4.50 4.50	ES4 D5	N11	1			(1.50)	MADE GROUND: Grey locally orange and black slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of mudstone, coal and isolated slag and fine brick (OPENCAST BACKFILL).		
				150.29		6.00			
6.00-6.45 6.00-6.45 6.00-10.45 6.00	ES6 D7 D8	N11				(1.50)	MADE GROUND: Light greenish grey gravelly CLAY. Gravel is angular to rounded fine to coarse of mudstone, coal and isolated slag and fine brick (OPENCAST BACKFILL).		
				148.79		7.50			
7.50-10.45 7.50	B9	N15	1			(2.50)	MADE GROUND: Dark grey very clayey GRAVEL. Gravel is angular to subangular fine to medium of mudstone, sandstone and coal (OPENCAST BACKFILL).		
9.00-10.45 9.00	ES10	N30							
				146.29		10.00			
10.00		N50					Terminated on SPT refusal on dark grey locally orangey brown weathered MUDSTONE at 10.45m begl.		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

GENERAL REMARKS

1. Hand dug inspection pit followed by CP drilling.
2. Water strike at 8.00m begl.
3. Cased to 10.00m begl.
4. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:65.625	Client Jarvale Construction Ltd	Method/ Plant Used Dando 2000	Logged By NP & PS

BH LOG 10M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 3/9/24

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BOREHOLE LOG

Project				BOREHOLE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**CP04**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	18-07-24 19-07-24	155.70	E 434,107.1 N 399,612.5	
Contractor				Sheet
DMW Drilling Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.02-3.40 0.02-3.40	ES1 D2						MADE GROUND: Dark grey very clayey angular to subrounded fine to coarse GRAVEL of sandstone, mudstone, coal, brick and clinker with rootlets and low cobble content of brick (OPENCAST BACKFILL). Slight creosote odour.		
1.50		N19				(4.00)			
3.00		N11		151.70		4.00			
4.50-4.95 4.50-7.95 4.50-10.95 4.50	ES3 D4 B5	N10		149.70		(2.00) 6.00	MADE GROUND: Greenish grey locally orange gravelly CLAY. Gravel is angular to rounded fine to coarse of mudstone, sandstone, coal and occasional brick and stone pebbles (OPENCAST BACKFILL).		
6.00-10.95 6.00	ES6	N15		148.20		(1.50) 7.50	MADE GROUND: Greenish grey locally orange gravelly CLAY. Gravel is angular to rounded fine to coarse of mudstone, sandstone, coal and brick (OPENCAST BACKFILL).		
7.50		N13					MADE GROUND: Greenish grey locally orange gravelly CLAY. Gravel is angular to rounded fine to coarse of mudstone, sandstone and coal (OPENCAST BACKFILL).		
9.00-12.45 9.00-12.45 9.00	D7 B8	N19							
10.50		N25				(7.00)			
12.00-14.00 12.00-15.00 12.00	B9 ES10	N19							
13.50-16.00 13.50	D11	N17		141.20		14.50			
15.00		N34		139.70		(1.50) 16.00	MADE GROUND: Greyish orange gravelly sandy CLAY. Gravel is angular to rounded fine to coarse of mudstone, sandstone and occasional brick (OPENCAST BACKFILL).		
16.00		N50/ 105 mm					Terminated on SPT refusal in grey weathered MUDSTONE at 16.45m begl.		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

GENERAL REMARKS

1. Hand dug inspection pit followed by CP drilling.
2. No groundwater encountered.
3. Slight creosote odour in top 3.45m.
4. Monitoring well to 10.00m begl.

All dimensions in metres Scale 1:106.25	Client Jarvale Construction Ltd	Method/ Plant Used Dando 2000	Logged By P Stewart

BH LOG 10M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 3/9/24

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BOREHOLE LOG

Project				BOREHOLE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**CP05**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	31-07-24	156.71	E 434,118.4 N 399,591.8	
Contractor				Sheet 1 of 1
DMW Drilling Ltd				

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.50-1.00	ES1					(1.50)	MADE GROUND: Grey locally orangey brown gravelly CLAY with low cobble content of brick. Gravel is angular fine to coarse of mudstone and occasional brick and coal (OPENCAST BACKFILL).		
				155.21		1.50			
1.50-2.00 1.50	D2	N8				(1.50)	MADE GROUND: Grey locally light brown slightly gravelly CLAY with low cobble content of brick. Gravel is angular fine to coarse of mudstone and isolated brick (OPENCAST BACKFILL).		
				153.71		3.00			
3.00-3.50 3.00-3.50 3.00	ES3 D4	N9				(1.50)	MADE GROUND: Brownish grey locally yellowish brown slightly gravelly CLAY. Gravel is angular fine to coarse of laminated mudstone (OPENCAST BACKFILL).		
				152.21		4.50			
4.50		N42				(0.45)	Dark greyish black highly weathered carbonaceous MUDSTONE with thin orangey brown stained band.		
				151.76		4.95			
5.00		N50/ 155 mm		151.71		5.00	Brown and light grey highly weathered MUDSTONE. Terminated on SPT refusal in grey weathered MUDSTONE at 5.54m begl.		

Boring Progress and Water Observations						Chiselling			Water Added	
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To

GENERAL REMARKS

1. Hand dug inspection pit followed by CP drilling.
2. No groundwater encountered.
3. No visual or olfactory evidence of potential contamination.
4. Monitoring well to 5.00m begl.

All dimensions in metres Scale 1:34.375	Client Jarvale Construction Ltd	Method/ Plant Used Dando 150	Logged By N Pickard

BH LOG 10M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 3/9/24

Silkstone
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BOREHOLE LOG

Project				BOREHOLE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**CP06**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	31-07-24 01-08-24	156.65	E 434,096.8 N 399,539.5	
Contractor				Sheet
DMW Drilling Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
				156.55		0.10	MADE GROUND: Brownish white slightly sandy angular fine to coarse GRAVEL of limestone (type 1 / sub base).		
0.50-1.00	ES1					(1.40)	MADE GROUND: Light brownish grey slightly gravelly CLAY with rootlets and small pockets of humic material. Gravel is angular fine to coarse of mudstone and iron stained siltstone (OPENCAST BACKFILL).		
				155.15		1.50			
1.50		N8				(1.50)	MADE GROUND: Greyish brown gravelly CLAY. Gravel is angular fine to coarse of mudstone and occasional coal (OPENCAST BACKFILL).		
				153.65		3.00			
3.00-3.50	ES2		1				MADE GROUND: Grey locally yellowish brown gravelly CLAY. Gravel is angular fine to coarse of mudstone and occasional coal (OPENCAST BACKFILL).		
3.00		N7							
4.50-5.00	D3		1			(3.00)			
4.50		N9							
				150.65		6.00			
6.00-6.50	D4						MADE GROUND: Grey locally orangey brown gravelly CLAY with low cobble content of angular mudstone. Gravel is angular fine to coarse of mudstone and occasional coal (OPENCAST BACKFILL).		
6.00		N11				(1.50)			
				149.15		7.50			
7.50		N16				(1.50)	MADE GROUND: Grey and orangey brown locally light grey gravelly CLAY. Gravel is angular fine to coarse of mudstone and occasional coal (OPENCAST BACKFILL).		
				147.65		9.00			
9.00-9.50	D5						MADE GROUND: Orange mottled light grey slightly gravelly CLAY. Gravel is angular fine to coarse of mudstone, coal and ironstone concretion (OPENCAST BACKFILL).		
9.00		N15				(1.50)			
				146.15		10.50			
10.50		N21				(1.50)	MADE GROUND: Grey locally yellowish brown and orange gravelly CLAY. Gravel is angular fine to coarse of mudstone and ironstone (OPENCAST BACKFILL).		
				144.65		12.00			
12.00-12.50	D6						MADE GROUND: Greyish orange slightly gravelly CLAY. Gravel is angular fine to coarse of mudstone (OPENCAST BACKFILL).		
12.00		N15				(1.00)			
				143.65		13.00			
				143.15		13.50	Grey highly weathered MUDSTONE.		
13.50		N50/ 135 mm					Terminated on SPT refusal in light grey weathered MUDSTONE at 13.95m begl.		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

GENERAL REMARKS

1. Hand dug inspection pit followed by CP drilling.
2. Water strike at 4.50m begl.
3. No visual or olfactory evidence of potential contamination.
4. Monitoring well to 13.25m begl.

All dimensions in metres Scale 1:93.75	Client Jarvale Construction Ltd	Method/ Plant Used Dando 150	Logged By N Pickard

BH LOG 10M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 3/9/24

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BOREHOLE LOG

Project				BOREHOLE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**CP07**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	01-08-24 02-08-24	156.51	E 434,085.2 N 399,515.9	
Contractor				Sheet
DMW Drilling Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.02-1.00	ES1			156.11		0.40	MADE GROUND: Grey slightly gravelly silty CLAY with roots and rootlets (TOPSOIL) and low cobble content of angular sandstone. Gravel is angular fine to coarse of sandstone, mudstone and limestone.		
0.50-5.00	D2			155.51		(0.60) 1.00	MADE GROUND: Brownish grey locally brownish orange slightly gravelly CLAY. Gravel is angular fine to coarse of mudstone and coal (OPENCAST BACKFILL).		
1.50-2.00 1.50-5.00 1.50	ES3 D4	N4				(2.00)	MADE GROUND: Dark grey locally orangey brown slightly gravelly CLAY. Gravel is angular fine to coarse of mudstone and ironstone (OPENCAST BACKFILL).		
3.00-5.00 3.00	ES5	N14		153.51		3.00	MADE GROUND: Dark grey locally light brown gravelly CLAY. Gravel is angular fine to coarse of mudstone and coal (OPENCAST BACKFILL).		
4.50		N8		152.01		(1.50) 4.50	MADE GROUND: Dark grey locally light brown gravelly CLAY with low cobble content of angular concrete. Gravel is angular fine to coarse of mudstone and coal (OPENCAST BACKFILL).		
6.00		N50/ 80 mm		150.61 150.51		(1.40) 5.90 6.00	Grey weathered MUDSTONE Terminated on SPT refusal in light grey locally brown coarse grained sandy SILTSTONE at 6.45m begl.		

Boring Progress and Water Observations						Chiselling			Water Added	
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To

GENERAL REMARKS

1. Hand dug inspection pit followed by CP drilling.
2. No groundwater encountered.
3. Cased to 4.50m begl.
4. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:62.5	Client Jarvale Construction Ltd	Method/ Plant Used Dando 150	Logged By NP & PS

BH LOG 10M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 3/9/24

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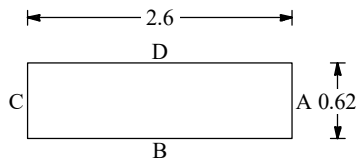
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TRIAL PIT LOG

Project				TRIAL PIT No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**TP01**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	15-07-24	155.60	E 434,091.8 N 399,604.4	
Contractor				Sheet 1 of 1
Hather Plant Hire				

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.02-2.00 0.02-0.76	ES1 ES2			155.40		(0.20) 0.20	MADE GROUND: Dark brown slightly gravelly clayey SILT. Gravel is angular to subangular fine to coarse of brick, sandstone and coal. Isolated piece of timber.		
				155.13		(0.27) 0.47	MADE GROUND: Grey silty angular to rounded fine GRAVEL of mudstone with a high cobble content of same lithology (OPENCAST BACKFILL).		
				154.84		(0.29) 0.76	MADE GROUND: Grey clayey angular to subangular fine GRAVEL of mudstone and coal with a high cobble content of mudstone. Isolated piece of timber with a slight creosote odour (OPENCAST BACKFILL).		
0.76-1.60	D3			154.00		(0.84) 1.60	MADE GROUND: Orangey grey gravelly CLAY. Gravel is angular to subangular fine of coal and siltstone (OPENCAST BACKFILL).		
				153.30		(0.70) 2.30	MADE GROUND: Light grey clayey angular to subangular fine GRAVEL of coal and siltstone with low cobble content of same lithology (OPENCAST BACKFILL).		
							Pit terminated at 2.30m begl.		

Shoring/Support:
Stability: Good



GENERAL REMARKS

1. Machine excavated trial pit.
2. No groundwater.
3. Slight creosote odour on a piece of timber between 0.47-0.76m begl.

All dimensions in metres Scale 1:16.25	Client Jarvale Construction Ltd	Method/ Plant Used JCB 3CX	Logged By P Stewart

TP LOG 2.0M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 6/9/24

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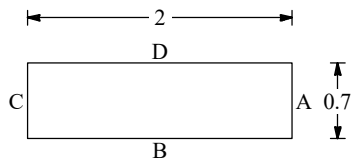
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TRIAL PIT LOG

Project				TRIAL PIT No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**TP02**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	15-07-24	155.91	E 434,072.6 N 399,577.8	
Contractor				Sheet 1 of 1
Hather Plant Hire				

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.20-0.70	ES1					(0.70)	MADE GROUND: Brown silty angular to rounded fine to coarse GRAVEL of brick, concrete, sandstone and clinker with a high cobble content of brick, masonry stone, slag, coal, concrete and sandstone.		
				155.21		0.70			
0.70-2.50	D2					(1.30)	MADE GROUND: Grey silty clayey subangular to rounded fine GRAVEL of siltstone with a low cobble content of same lithology (OPENCAST BACKFILL).		
				153.91		2.00			
2.00-2.50	D3					(0.50)	MADE GROUND: Grey gravelly CLAY. Gravel is angular to subangular fine of siltstone and coal with a medium cobble content of siltstone (OPENCAST BACKFILL).		
				153.41		2.50			
							Pit terminated at 2.50m begl.		

Shoring/Support:
Stability: Poor



GENERAL REMARKS

1. Machine excavated trial pit.
2. No groundwater.
3. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:16.25	Client Jarvale Construction Ltd	Method/ Plant Used JCB 3CX	Logged By P Stewart

TP LOG 2.0M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 6/9/24

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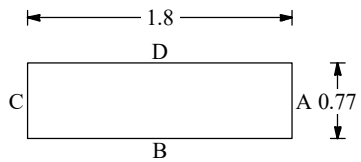
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TRIAL PIT LOG

Project				TRIAL PIT No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**TP03**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	31-07-24	158.85	E 434,102.4 N 399,579.6	
Contractor				Sheet 1 of 1
Hather Plant Hire				

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.10-0.40	ES1						MADE GROUND: Dark grey slightly sandy gravelly CLAY with high cobble content of sandstone, mudstone, brick and concrete. Gravel is subangular to rounded of same lithology.		
							0.40 Becoming clayey.		
							0.50 Two large pieces of metal encountered.		
						(2.90)			
2.60-2.90	ES2								
				155.95		2.90			

Shoring/Support:
Stability: Good



GENERAL REMARKS

1. Machine excavated trial pit.
2. No groundwater encountered.
3. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:25	Client Jarvale Construction Ltd	Method/ Plant Used CAT 432E	Logged By A Hives

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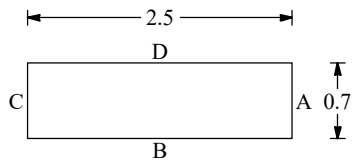
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TRIAL PIT LOG

Project				TRIAL PIT No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**TP04**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	31-07-24	157.41	E 434,092.9 N 399,574.0	
Contractor				Sheet 1 of 1
Hather Plant Hire				

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.10-0.40	ES1					(1.70)	MADE GROUND: Dark grey slightly sandy gravelly CLAY with high cobble content of sandstone, mudstone, brick and concrete with occasional metal and wood. Gravel is subangular to rounded of sandstone, mudstone, brick and concrete. 0.85 Rubber hose encountered.		
1.30-1.50	ES2			155.71		1.70			

Shoring/Support:
Stability: Good



GENERAL REMARKS

1. Machine excavated trial pit.
2. No groundwater encountered.
3. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:25	Client Jarvale Construction Ltd	Method/ Plant Used CAT 432E	Logged By A Hives

TP LOG 2.0M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 4/9/24

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WINDOW SAMPLE LOG

Project				Window Sample No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**WS01**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	16-07-24	155.53	E 434,050.8 N 399,552.6	
Contractor				Sheet
Geospek Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
				155.43		(0.10) 0.10	MADE GROUND: Tarmac.		
				155.35		(0.08) 0.18	MADE GROUND: Orange brown coarse SAND (Bedding Sand).		
0.18-0.48	ES1		1	155.05		(0.30) 0.48	MADE GROUND: Brownish black sandy silty subangular to rounded fine to coarse GRAVEL of brick, limestone, mudstone, clinker, slag, sandstone with a medium cobble content of limestone and sandstone.		
							Hand dug pit terminated due to concrete at 0.48m begl.		

Hole Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Window Sample Recovery			
From	To	Dia (m)	Rec (%)

GENERAL REMARKS

1. Slow ingress of water at 0.35m.
2. No visual or olfactory evidence of potential contamination.
3. Inspection pit terminated due concrete encountered at 0.48m begl.

All dimensions in metres Scale 1:3.75	Client Jarvale Construction Ltd	Method/ Plant Used Hand Tools	Logged By P Stewart

WINDOW SAMPLE LOG 3M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 6/9/24

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WINDOW SAMPLE LOG

Project				Window Sample No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**WS02**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	16-07-24	156.28	E 434,065.2 N 399,554.2	
Contractor				Sheet
Geospek Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
				156.08		(0.20) 0.20	MADE GROUND: Brown slightly gravelly SILT. Gravel is angular to subrounded fine to coarse of sandstone, mudstone, limestone and brick.		
0.20-3.50	ES1					(0.70)	MADE GROUND: Brownish grey sandy silty angular to subrounded fine to medium GRAVEL of sandstone, siltstone, limestone and coal with a low cobble content of masonry stone blocks.		
				155.38		0.90			
1.20		N12				(0.60)	MADE GROUND: Grey silty angular to subrounded fine GRAVEL of siltstone (OPENCAST BACKFILL).		
				154.78		1.50			
1.50-1.80	D2					(0.30)	MADE GROUND: Orange slightly gravelly CLAY. Gravel is angular to subrounded fine siltstone (OPENCAST BACKFILL).		
				154.48		1.80			
1.80-3.50	B3						MADE GROUND: Greenish grey very gravelly slightly clayey SILT. Gravel is angular to subangular fine of coal and siltstone with isolated fragments of brick (OPENCAST BACKFILL).		
2.00		N17							
						(1.70)			
3.00		N28							
				152.78		3.50			
3.50		N50/ 235 mm					Sampler refusal at 3.50m begl on micaceous mudstone cobble.		

Hole Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Window Sample Recovery			
From	To	Dia (m)	Rec (%)

GENERAL REMARKS

1. No groundwater encountered.
2. No visual or olfactory evidence of potential contamination.
3. Sampler refusal at 3.50m begl on mudstone cobble.
4. Monitoring well installed to 3.50m.

All dimensions in metres Scale 1:23.125	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By P Stewart

WINDOW SAMPLE LOG 3M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 24/9/24

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WINDOW SAMPLE LOG

Project				Window Sample No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**WS03**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	16-07-24	155.10	E 434,062.1 N 399,587.7	
Contractor				Sheet 1 of 1
Geospek Ltd				

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
				154.95		0.15	MADE GROUND: Greyish brown gravelly SILT. Gravel is angular to rounded fine to coarse of brick, indescript pebbles and mudstone with an isolated plastic wrapper (TOPSOIL).		
0.15-1.00	ES1								
0.15-6.00	D2								
0.15-1.70	B3						MADE GROUND: Grey silty slightly clayey angular to subrounded fine GRAVEL of siltstone and coal (OPENCAST BACKFILL).		
						(1.55)			
1.00-6.00	ES4								
1.20		N12							
				153.40		1.70			
				153.34		1.76	MADE GROUND: Black angular fine GRAVEL of coal (OPENCAST BACKFILL).		
2.00		N11					MADE GROUND: Grey silty very clayey angular to subrounded fine GRAVEL of siltstone and coal (OPENCAST BACKFILL).		
						(1.04)			
				152.30		2.80			
			1	152.15		2.95	MADE GROUND: Black angular fine GRAVEL of coal (OPENCAST BACKFILL).		
				152.00		3.10			
3.00		N17					MADE GROUND: Grey silty very clayey angular to subrounded fine GRAVEL of siltstone and coal (OPENCAST BACKFILL).		
3.10-3.40	D5			151.70		3.40			
							MADE GROUND: Orange slightly gravelly CLAY. Gravel is angular to subangular fine to medium of coal, mudstone and sandstone (OPENCAST BACKFILL).		
			2				MADE GROUND: Grey silty very clayey angular to subrounded fine to medium GRAVEL of mudstone, sandstone and coal (OPENCAST BACKFILL).		
4.00		N19							
						(2.10)			
5.00		N27							
				149.60		5.50			
5.50-6.00	D6						MADE GROUND: Greyish orange CLAY (OPENCAST BACKFILL).		
						(0.50)			
				149.10		6.00			
6.00		N15					Dyanmic probing was not conducted at this location.		

Hole Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Window Sample Recovery			
From	To	Dia (m)	Rec (%)

GENERAL REMARKS

1. Hand dug inspection pit before window sampling.
2. Strata wet at 3.00-3.35 and 4.00-4.60m.
3. No visual or olfactory evidence of potential contamination.
4. Monitoring well installed to 4.95m.

All dimensions in metres Scale 1:40.625	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By P Stewart

WINDOW SAMPLE LOG 3M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 6/9/24

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WINDOW SAMPLE LOG

Project				Window Sample No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**WS04**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	16-07-24	154.54	E 434,074.1 N 399,609.4	
Contractor				Sheet 1 of 1
Geospek Ltd				

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.02-0.20	ES1					(0.20)	MADE GROUND: Greyish brown gravelly SILT. Gravel is angular to rounded fine to coarse of brick, indescript pebbles and mudstone with an isolated piece of building insulation (TOPSOIL).		
				154.34		0.20			
						(0.57)	MADE GROUND: Grey silty slightly clayey angular to subrounded fine GRAVEL of siltstone and coal (OPENCAST BACKFILL).		
				153.77		0.77			
							Inspection pit terminated on a boulder at 0.77m.		

Hole Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Window Sample Recovery			
From	To	Dia (m)	Rec (%)

GENERAL REMARKS

1. Hand dug inspection pit terminated on a boulder at 0.77m begl.
2. Groundwater encountered at 0.77m, heavy rain caused the pit to fill with water.
3. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:6.875	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By P Stewart

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WINDOW SAMPLE LOG

Project				Window Sample No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**WS05**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	23-07-24	155.15	E 434,055.2 N 399,572.3	
Contractor				Sheet 1 of 1
Geospek Ltd				

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.05-0.30	ES1			155.10		0.05	MADE GROUND: Dark greyish brown slightly gravelly silty CLAY with rootlets and humic matter (TOPSOIL).		
0.05-3.90	ES2						MADE GROUND: Light grey clayey angular fine to coarse GRAVEL of mudstone, occasional ironstone and coal and small pockets of orange and grey clay. Low cobble content of angular mudstone and sandstone (OPENCAST BACKFILL).		
0.80-1.00	ES3					(1.61)			
1.00		N15					At 1.53m thin coal horizon.		
				153.49		1.66			
1.78-1.83	D4						MADE GROUND: Orange and grey locally pink slightly gravelly CLAY. Gravel is angular fine to coarse of mudstone and ironstone (OPENCAST BACKFILL).		
1.95-2.00	D5					(0.54)			
2.00		N14							
				152.95		2.20			
				152.85		2.30	MADE GROUND: Light grey angular fine to coarse GRAVEL of mudstone (OPENCAST BACKFILL).		
							MADE GROUND: Orange and grey CLAY with occasional thin lenses of weathered mudstone and occasional small pockets of weathered coal (OPENCAST BACKFILL).		
						(0.70)			
				152.15		3.00			
3.00		N33					MADE GROUND: Grey and orange slightly gravelly CLAY. Gravel is angular fine to coarse of mudstone and occasional ironstone and coal (OPENCAST BACKFILL).		
						(0.60)			
3.45-3.55	D6			151.55		3.60			
						(0.30)	MADE GROUND: Grey locally yellowish brown clayey angular fine to coarse GRAVEL of mudstone (OPENCAST BACKFILL).		
				151.25		3.90			
3.90		N54					Sampler relused on obstruction (probable boulder) at 3.90m begl and hole continued by dynamic probing to refusal at 9.80m begl.		

Hole Progress and Water Observations

Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Window Sample Recovery

From	To	Dia (m)	Rec (%)

GENERAL REMARKS

1. Hand dug inspection pit followed by window sampling & dynamic probing.
2. No groundwater encountered.
3. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:28.125	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By N Pickard

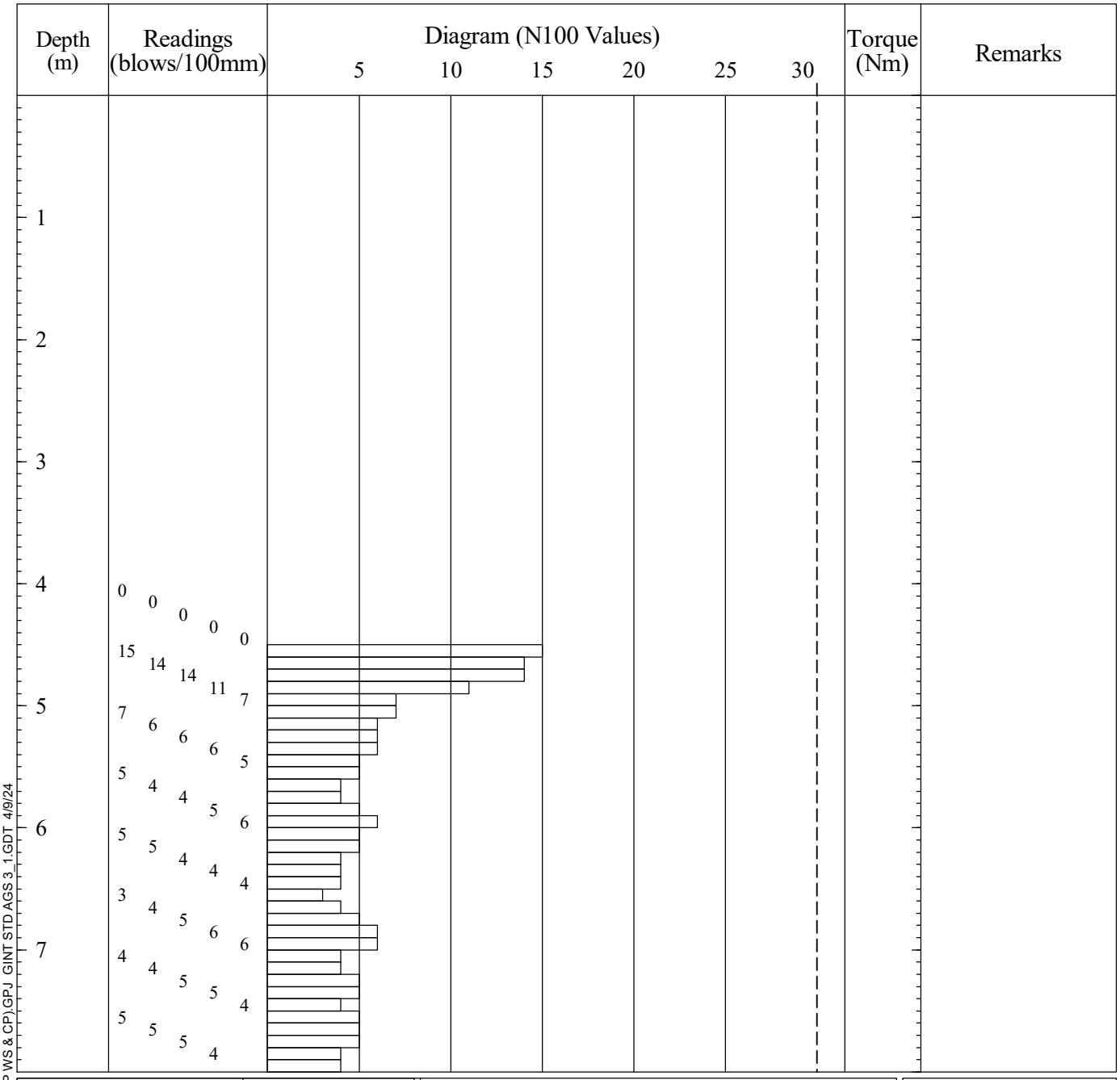
WINDOW SAMPLE LOG 3M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 4/9/24

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DYNAMIC PROBE LOG

Project				PROBE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**WS05**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	23-07-24	155.15	E 434,055.2 N 399,572.3	
Contractor				Sheet
Geospek Ltd				1 of 2



Hammer Wt (kg)	63.5
Hammer Drop (mm)	750
Cone Dia (mm)	50.5
Cone Type	DPSH
Damper	

GENERAL REMARKS

1. Hand dug inspection pit followed by window sampling & dynamic probing.
2. No groundwater encountered.
3. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:50	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By N Pickard

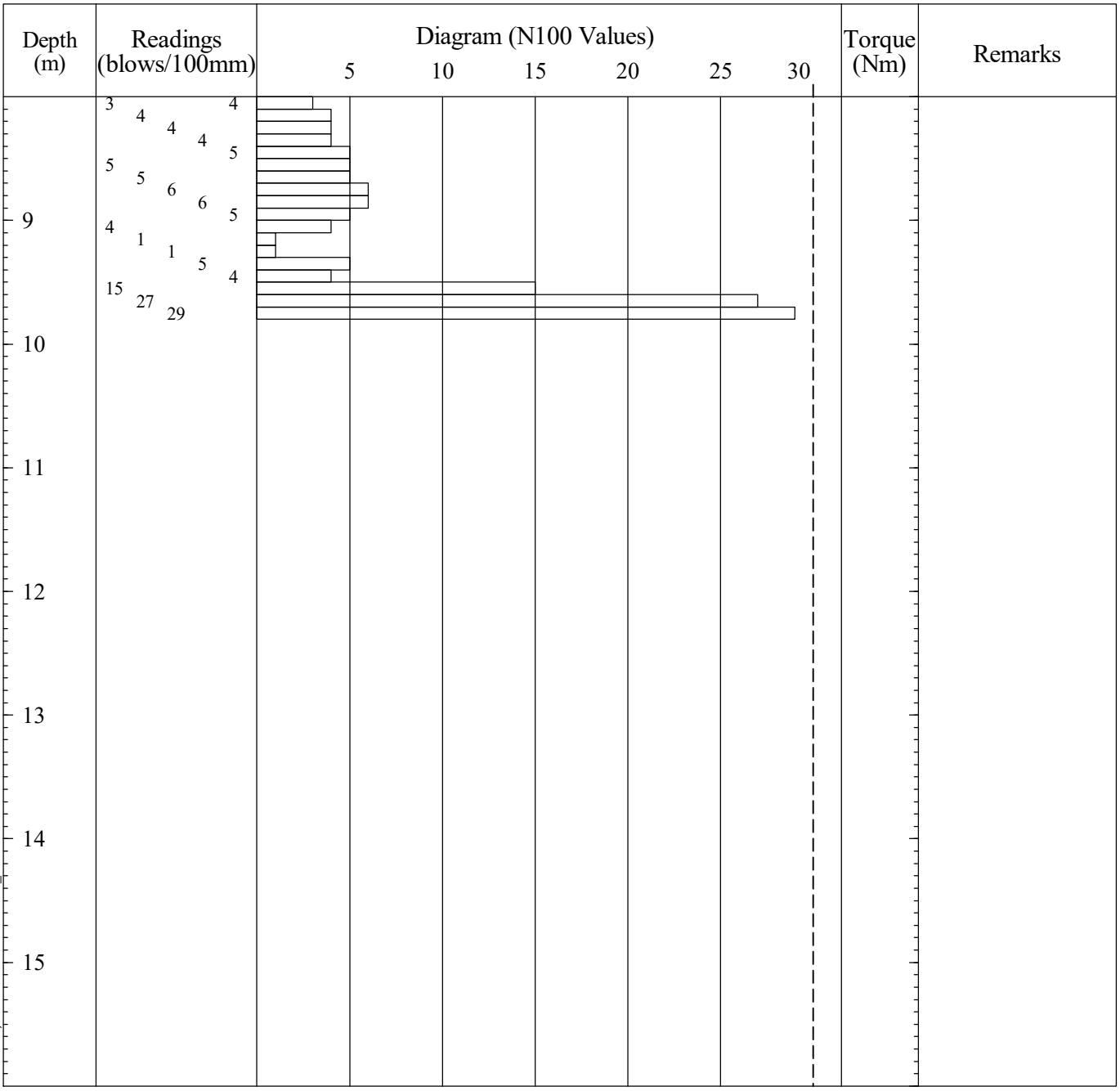
AGS3 DYNAMIC PROBE 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 4/9/24

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DYNAMIC PROBE LOG

Project				PROBE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**WS05**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	23-07-24	155.15	E 434,055.2 N 399,572.3	
Contractor				Sheet
Geospek Ltd				2 of 2



Hammer Wt (kg)	63.5
Hammer Drop (mm)	750
Cone Dia (mm)	50.5
Cone Type	DPSH
Damper	

GENERAL REMARKS

1. Hand dug inspection pit followed by window sampling & dynamic probing.
2. No groundwater encountered.
3. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:50	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By N Pickard

AGS3 DYNAMIC PROBE 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 4/9/24

Silkstone
Environmental Ltd
www.silkstoneenvironmental.co.uk

Silkstone Environmental Ltd
7 Hall Annex, Thorncliffe Park
Chapeltown, S35 2PH
Telephone: 0114 2573487

WINDOW SAMPLE LOG

Project				Window Sample No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**WS06**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	02-08-24	156.38	E 434,085.1 N 399,548.4	
Contractor				Sheet
Geospek Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.05-1.00 0.05-6.00	ES1 D2			156.08		(0.30) 0.30	MADE GROUND: Grey very gravelly CLAY. Gravel is angular to subangular fine to medium of mudstone and sandstone with a medium cobble content of mudstone.		
				155.38		(0.70) 1.00	MADE GROUND: Grey clayey angular to subangular fine to medium GRAVEL of mudstone, coal and sandstone with a medium cobble content of mudstone (OPENCAST BACKFILL).		
1.00		N9					MADE GROUND: Orangey grey very gravelly CLAY. Gravel is angular to subangular fine to medium of coal, mudstone and sandstone with a low cobble content of same lithology (OPENCAST BACKFILL).		
2.00		N11							
3.00		N11				(4.00)			
4.00		N10							
				151.38		5.00			
5.00-5.60 5.00	ES3	N11				(0.60)	MADE GROUND: Orangey grey very gravelly CLAY. Gravel is angular to subangular fine to medium of coal, mudstone, limestone cement and sandstone with a low cobble content of mudstone, coal and sandstone (OPENCAST BACKFILL).		
				150.78		5.60			
							Follow on dynamic probing after 5.60m to 13.0m.		

Hole Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Window Sample Recovery			
From	To	Dia (m)	Rec (%)

GENERAL REMARKS

1. Window sampling with follow on dynamic probing.
2. Dynamic probing to 12.60m begl.
3. No visual or olfactory evidence of potential contamination.
4. No groundwater encountered.

All dimensions in metres Scale 1:37.5	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By P Stewart

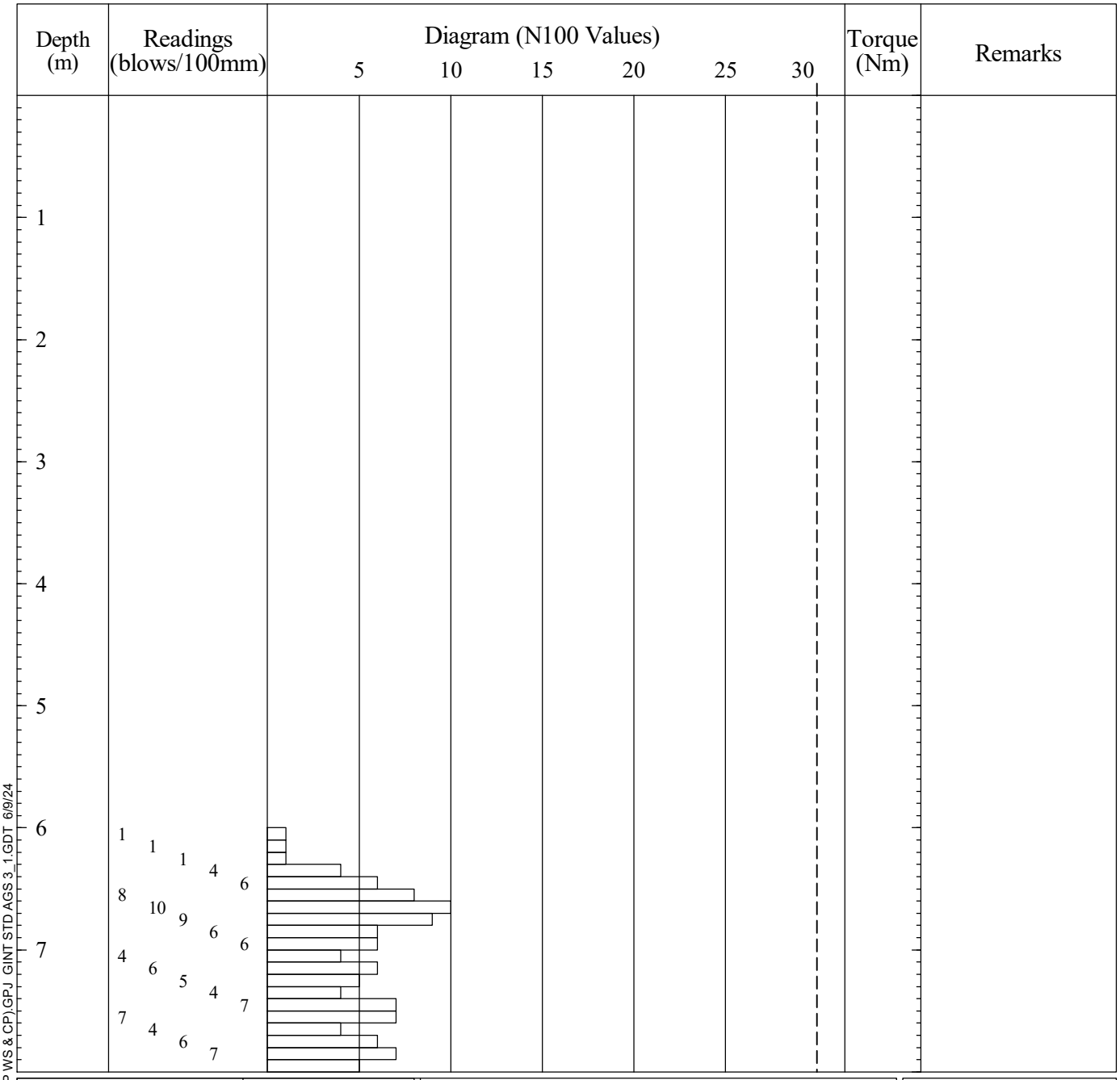
WINDOW SAMPLE LOG 3M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 6/9/24

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Chapeltown, S35 2PH
Telephone: 0114 2573487

DYNAMIC PROBE LOG

Project				PROBE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**WS06**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	02-08-24	156.38	E 434,085.1 N 399,548.4	
Contractor				Sheet
Geospek Ltd				1 of 2



Hammer Wt (kg)	63.5
Hammer Drop (mm)	750
Cone Dia (mm)	50.5
Cone Type	DPSH
Damper	

GENERAL REMARKS

1. Window sampling with follow on dynamic probing.
2. Dynamic probing to 12.60m begl.
3. No visual or olfactory evidence of potential contamination.
4. No groundwater encountered.

All dimensions in metres Scale 1:50	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By P Stewart

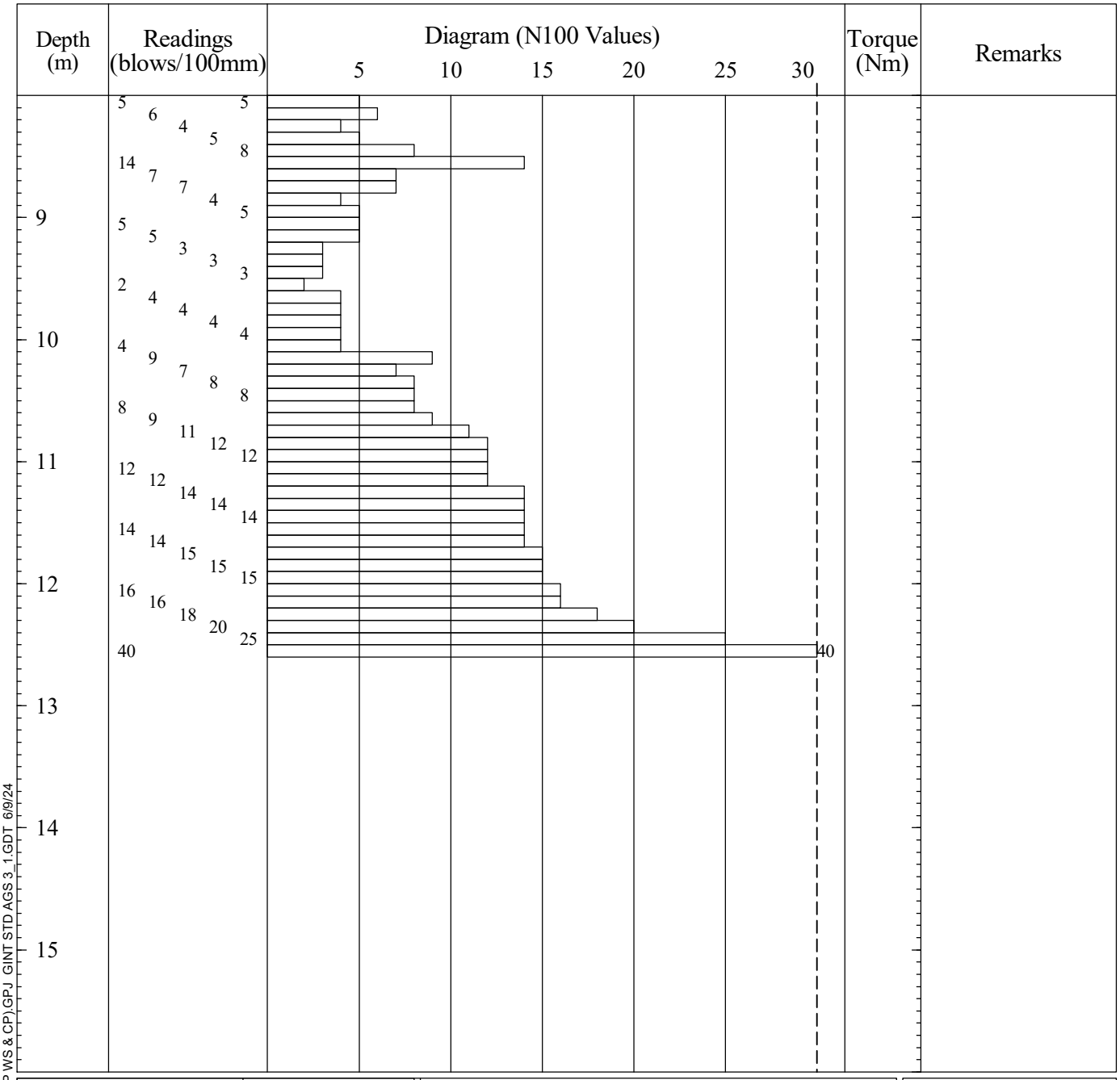
AGS3 DYNAMIC PROBE 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 6/9/24

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DYNAMIC PROBE LOG

Project				PROBE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**WS06**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	02-08-24	156.38	E 434,085.1 N 399,548.4	
Contractor				Sheet
Geospek Ltd				2 of 2



Hammer Wt (kg)	63.5
Hammer Drop (mm)	750
Cone Dia (mm)	50.5
Cone Type	DPSH
Damper	

GENERAL REMARKS

1. Window sampling with follow on dynamic probing.
2. Dynamic probing to 12.60m begl.
3. No visual or olfactory evidence of potential contamination.
4. No groundwater encountered.

All dimensions in metres Scale 1:50	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By P Stewart

AGS3 DYNAMIC PROBE 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 6/9/24

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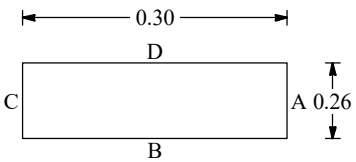
Silkstone Environmental Ltd
7 Hall Annex, Thorncliffe Park
Chapeltown, S35 2PH
Telephone: 0114 2573487

TRIAL PIT LOG

Project				TRIAL PIT No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**DP01**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	23-07-24	155.26	E 434,088.6 N 399,619.0	
Contractor				Sheet
Geospek Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.02-0.10	ES1			155.08		(0.18) 0.18	MADE GROUND: Brownish grey slightly gravelly CLAY with rootlets (TOPSOIL). Gravel is angular to subangular fine to coarse of mudstone and occasional quartzite.		
0.50-0.55	ES2			154.46		(0.62) 0.80	MADE GROUND: Grey clayey angular to subrounded fine to coarse GRAVEL of mudstone, ironstone, occasional brick and coal and isolated small piece of metal wire. Low cobble content of angular brick and mudstone (OPENCAST BACKFILL).		
							Inspection pit terminated at 0.80m begl followed by probing with metal bar to 1.07m begl followed by dynamic probing to refusal at 12.20m begl.		

Shoring/Support:
Stability:



GENERAL REMARKS

1. Hand dug inspection pit followed by dynamic probing.
2. Groundwater seepage approx. 4.00m begl.
3. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:12.5	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By N Pickard

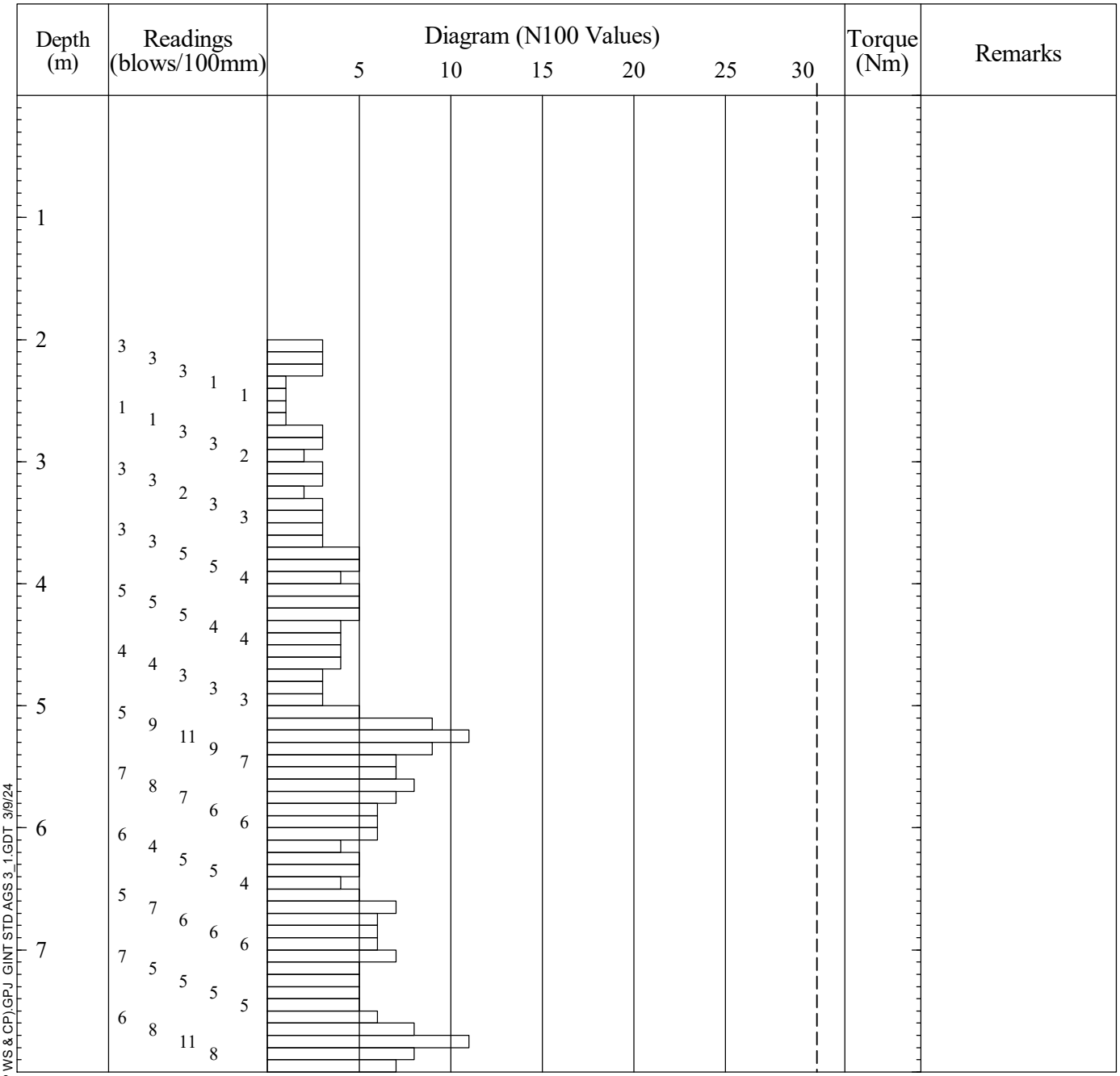
TP LOG 2.0M 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 3/9/24

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DYNAMIC PROBE LOG

Project				PROBE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**DP01**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	23-07-24	155.26	E 434,088.6 N 399,619.0	
Contractor				Sheet
Geospek Ltd				1 of 2



Hammer Wt (kg)	63.5
Hammer Drop (mm)	750
Cone Dia (mm)	50.5
Cone Type	DPSH
Damper	

GENERAL REMARKS

1. Hand dug inspection pit followed by dynamic probing.
2. Groundwater seepage approx. 4.00m begl.
3. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:50	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By N Pickard

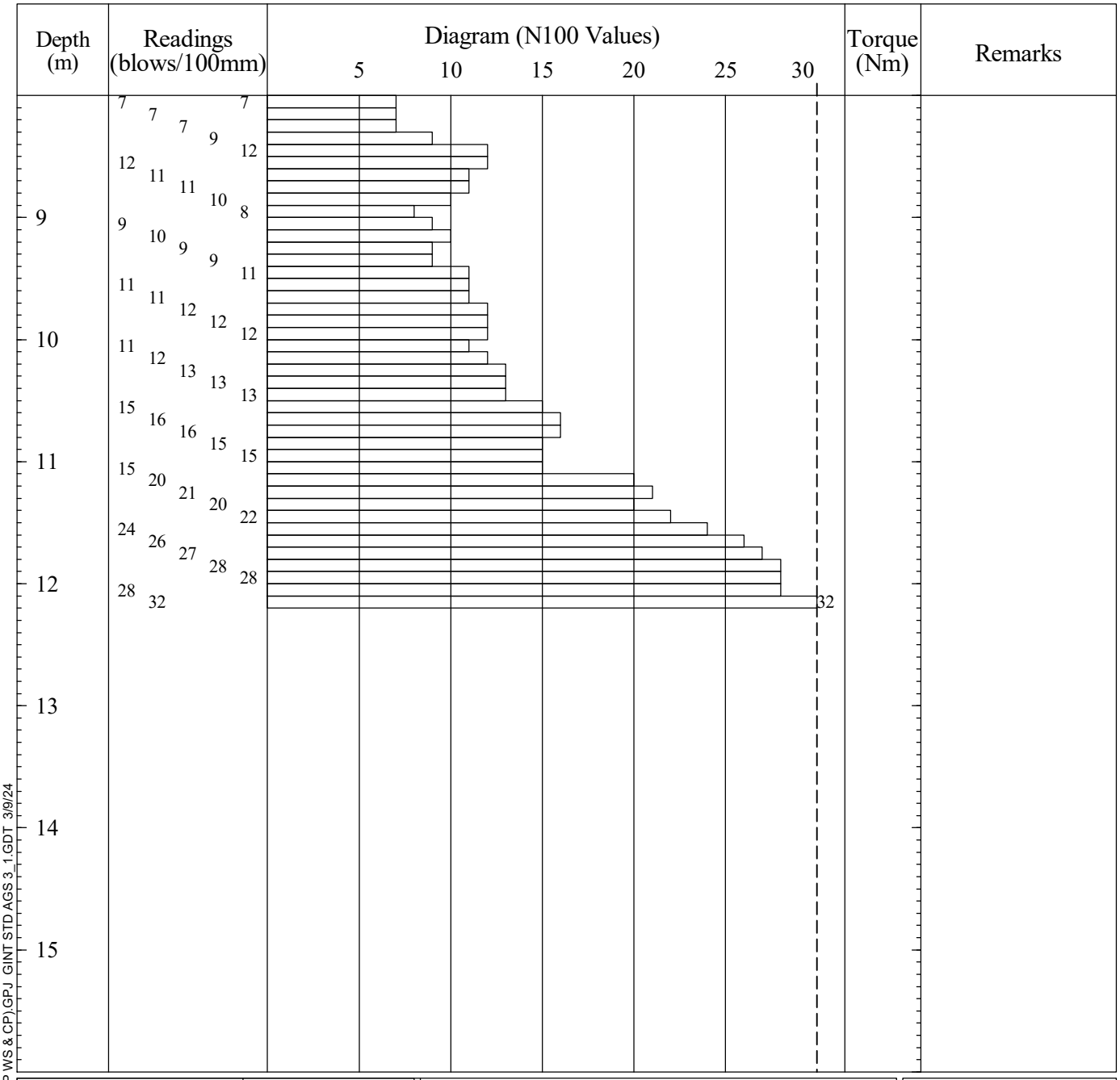
AGS3 DYNAMIC PROBE 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 3/9/24

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DYNAMIC PROBE LOG

Project				PROBE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**DP01**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	23-07-24	155.26	E 434,088.6 N 399,619.0	
Contractor				Sheet
Geospek Ltd				2 of 2



Hammer Wt (kg)	63.5
Hammer Drop (mm)	750
Cone Dia (mm)	50.5
Cone Type	DPSH
Damper	

GENERAL REMARKS

1. Hand dug inspection pit followed by dynamic probing.
2. Groundwater seepage approx. 4.00m begl.
3. No visual or olfactory evidence of potential contamination.

All dimensions in metres Scale 1:50	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By N Pickard

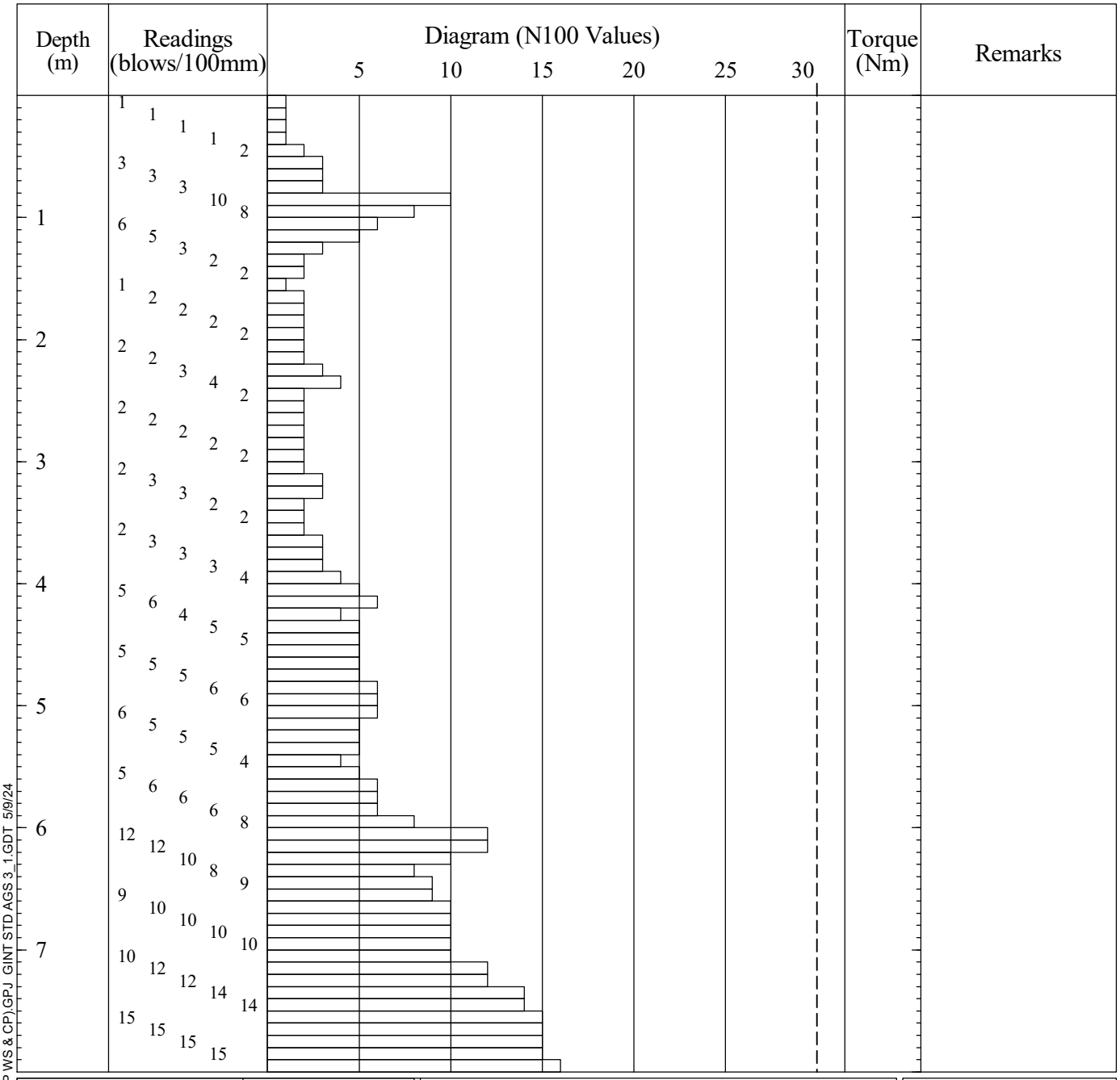
AGS3 DYNAMIC PROBE 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 3/9/24

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DYNAMIC PROBE LOG

Project				PROBE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**DP02**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	02-08-24	156.16	E 434,104.6 N 399,595.2	
Contractor				Sheet
Geospek Ltd				1 of 2



Hammer Wt (kg)	63.5
Hammer Drop (mm)	750
Cone Dia (mm)	50.5
Cone Type	DPSH
Damper	

GENERAL REMARKS

1. Slow ingress of water at 0.35m.
2. No visual or olfactory evidence of potential contamination.
3. Inspection pit terminated due concrete encountered at 0.48m begl.

All dimensions in metres Scale 1:50	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By P Stewart

AGS3 DYNAMIC PROBE 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 5/9/24

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DYNAMIC PROBE LOG

Project				PROBE No
Jacquet UK Ltd, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH				**DP02**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
23236	02-08-24	156.16	E 434,104.6 N 399,595.2	
Contractor				Sheet
Geospek Ltd				2 of 2

Depth (m)	Readings (blows/100mm)	Diagram (N100 Values)	Torque (Nm)	Remarks
9	15 16 18 19 19 19 19 20 20 22	5 10 15 20 25 30		
10				
11				
12				
13				
14				
15				

Hammer Wt (kg)	63.5
Hammer Drop (mm)	750
Cone Dia (mm)	50.5
Cone Type	DPSH
Damper	

GENERAL REMARKS

1. Slow ingress of water at 0.35m.
2. No visual or olfactory evidence of potential contamination.
3. Inspection pit terminated due concrete encountered at 0.48m begl.

All dimensions in metres Scale 1:50	Client Jarvale Construction Ltd	Method/ Plant Used Archway Competitor	Logged By P Stewart

AGS3 DYNAMIC PROBE 23236 JACQUET UK (TP WS & CP).GPJ GINT STD AGS 3_1.GDT 5/9/24

APPENDIX C

Photographic Record

DRAFT



16/07/2024 CP01 – Inspection pit excavated prior to drilling commencing.



16/07/2024 CP01 – Borehole location.



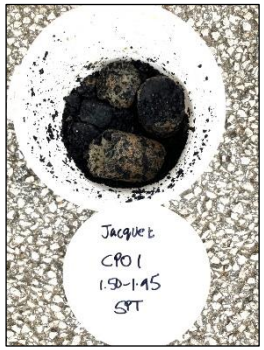
17/07/2024 CP01 – Soil recovered from 0.00-0.13m begl.



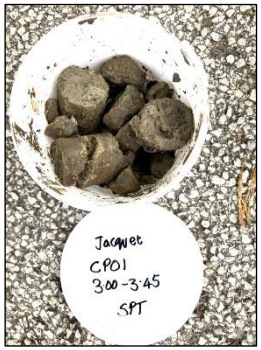
17/07/2024 CP01 – Soil recovered from 0.54-0.93m begl.



17/07/2024 CP01 – Soil recovered from 0.93-1.28m begl.



17/07/2024 CP01 – SPT split spoon sample from 1.50-1.95m begl.



17/07/2024 CP01 – SPT split spoon sample from 3.00-3.45m begl.



17/07/2024 CP01 – Soil recovered from 3.60m begl.



17/07/2024 CP01 – Soil recovered from 4.50m begl.



17/07/2024 CP01 – SPT split spoon sample from 4.50-4.95m begl.



17/07/2024 CP01 – SPT split spoon sample from 6.00-6.45m begl.



17/07/2024 CP01 – Soil recovered from 7.50-7.95m begl[1].



17/07/2024 CP01 – SPT split spoon sample from 7.50-7.95m begl.

Notes:
1. The appearance of the recovered bulk sample labelled 7.50-7.95m differs from the SPT split spoon sample from the same depth. The bulk sample is therefore probably from 7.00-7.50m.

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH	**CP01**



16/07/2024 CP02 – Inspection pit excavated prior to drilling commencing.



16/07/2024 CP02 – Borehole location.



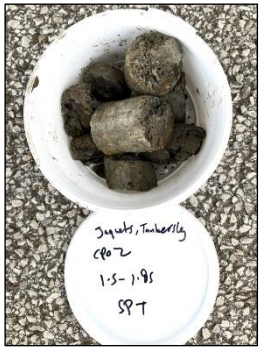
17/07/2024 CP02 – Soil recovered from 0.00-0.16m begl.



17/07/2024 CP02 – Soil recovered from 0.78-1.00m begl.



17/07/2024 CP02 – Soil recovered from 1.50m begl.



17/07/2024 CP02 – SPT split spoon sample from 1.50-1.95m begl.



17/07/2024 CP02 – SPT split spoon sample from 3.00-3.45m begl.



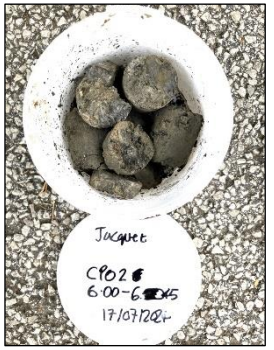
17/07/2024 CP02 – Soil recovered from 3.00-3.45m begl.



17/07/2024 CP02 – Soil recovered from 4.50m begl.



17/07/2024 CP2 – SPT split spoon sample from 4.50-4.95m begl.



17/07/2024 CP02 – SPT split spoon sample from 6.00-6.45m begl.



17/07/2024 CP02 – Soil recovered from 6.00-6.50m begl.



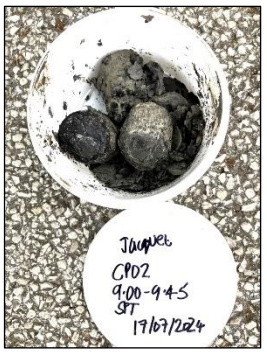
17/07/2024 CP02 – Soil recovered from 7.50m begl.



17/07/2024 CP02 – SPT split spoon sample from 7.50-7.95m begl.



17/07/2024 CP02 – Soil recovered from 8.50m begl.



17/07/2024 CP02 – SPT split spoon sample from 9.00-9.45m begl.

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH	**CP02**



17/07/2024 CP03 – Borehole location.



18/07/2024 CP03 – Soil recovered from 0.50m begl.



17/07/2024 CP03 – SPT split spoon sample from 1.50-1.95m begl.



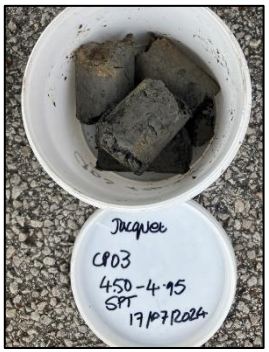
18/07/2024 CP03 – Soil recovered from 1.50m begl.



17/07/2024 CP03 – SPT split spoon sample from 3.00-3.45m begl.



18/07/2024 CP03 – Soil recovered from 3.00m begl.



17/07/2024 CP3 – SPT split spoon sample from 4.50-4.95m begl.



18/07/2024 CP03 – Soil recovered from 4.50m begl.



18/07/2024 CP03 – SPT split spoon sample from 6.00-6.45m begl.



18/07/2024 CP03 – Soil recovered from 6.00-6.45m begl.



18/07/2024 CP03 – SPT split spoon sample from 7.50-7.95m begl.



18/07/2024 CP03 – Soil recovered from 7.50-7.95m begl.



18/07/2024 CP03 – SPT split spoon sample from 9.00-9.45m begl.



18/07/2024 CP03 – Soil recovered from 9.00-9.45m begl.



18/07/2024 CP03 – SPT split spoon sample from 10.00-10.45m begl.



18/07/2024 CP03 – Soil recovered from 10.00-10.45m begl.



18/07/2024 CP03 – Washed gravel constituents from 10.00-10.45m begl.

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH	**CP03**



18/07/2024 CP04 – Moving rig from CP03 to CP04 over difficult ground conditions.



18/07/2024 CP04 – Borehole location.



18/07/2024 CP04 – Soil recovered from 0.00-1.20m begl.



18/07/2024 CP04 – SPT split spoon sample from 1.50-1.95m begl.



18/07/2024 CP04 – SPT split spoon sample from 3.00-3.45m begl.



18/07/2024 CP04 – Soil recovered from 3.00-3.45m begl.



18/07/2024 CP4 – SPT split spoon sample from 4.50-4.95m begl.



18/07/2024 CP04 – Soil recovered from 4.50-4.95m begl.



18/07/2024 CP04 – SPT split spoon sample from 6.00-6.45m begl.



18/07/2024 CP04 – Soil recovered from 6.00-6.45m begl.



19/07/2024 CP04 – SPT split spoon sample from 7.50-7.95m begl.



19/07/2024 CP04 – Soil recovered from 7.50-7.95m begl.



19/07/2024 CP04 – SPT split spoon sample from 9.00-9.45m begl.



19/07/2024 CP04 – Soil recovered from 9.00-9.45m begl.



19/07/2024 CP04 – SPT split spoon sample from 10.50-10.95m begl.



19/07/2024 CP04 – Soil recovered from 10.50-10.95m begl.



19/07/2024 CP04 – SPT split spoon sample from 12.00-12.45m begl.



19/07/2024 CP04 – Soil recovered from 12.00-12.45m begl.

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH	**CP04**



19/07/2024 CP4 – SPT split spoon sample from 13.50-13.95m begl.


19/07/2024 CP04 – Soil recovered from 13.5-13.95m begl.



19/07/2024 CP04 – Soil recovered from 14.00-15.00m begl.



19/07/2024 CP04 – SPT split spoon sample from 15.00-15.45m begl.



19/07/2024 CP04 – SPT split spoon sample from 16.00-16.45m begl.


19/07/2024 CP04 – Soil recovered from 16.00m begl.


31/07/2024 CP04 – Upon completion, showing lockable cover to monitoring.



31/07/2024 CP05 – Borehole location near northeastern corner of site.



31/07/2024 CP05 – Soil recovered from 0.50-1.00m begl.



31/07/2024 CP05 – SPT split spoon sample from 1.50-1.95m begl.



31/07/2024 CP05 – Soil recovered from 1.50-2.00m begl.



31/07/2024 CP05 – SPT split spoon sample from 3.00-3.45m begl.



31/07/2024 CP05 – Soil recovered from 3.00-3.50m begl.



31/07/2024 CP05 – SPT split spoon sample from 4.50-4.95m begl.



31/07/2024 CP05 – Soil recovered from 4.50-5.00m begl.



31/07/2024 CP05 – SPT split spoon sample from 5.00-5.45m begl.



31/07/2024 CP05 – Borehole location (centre) upon completion.



31/07/2024 CP05 – Protective cover to monitoring well installastion.

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH	**CP05**



31/07/2024 CP06 – Borehole location



31/07/2024 CP06 – Soil recovered from 0.50-1.00m begl.



31/07/2024 CP06 – SPT split spoon sample from 1.50-1.95m begl.



01/08/2024 CP06 – Soil recovered from 1.50-2.00m begl.



01/08/2024 CP06 – SPT split spoon sample from 3.00-3.45m begl.



01/08/2024 CP06 – Soil recovered from 3.00-3.50m begl.



01/08/2024 CP06 – SPT split spoon sample from 4.50-4.95m begl.



01/08/2024 CP06 – Soil recovered from 4.50-5.00m begl.



01/08/2024 CP06 – SPT split spoon sample from 6.00-6.45m begl.



01/08/2024 CP06 – Soil recovered from 6.00-6.50m begl.



01/08/2024 CP06 – SPT split spoon sample from 7.50-7.95m begl.



01/08/2024 CP06 – Soil recovered from 7.50-8.00m begl.



01/08/2024 CP06 – SPT split spoon sample from 9.00-9.45m begl.



01/08/2024 CP06 – Soil recovered from 9.00-9.50m begl.



01/08/2024 CP06 – SPT split spoon sample from 10.5-10.95m begl.



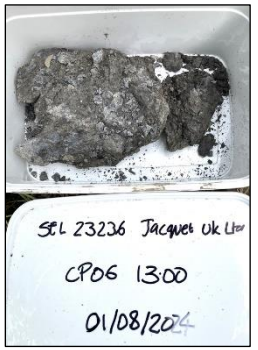
01/08/2024 CP06 – Soil recovered from 10.50-11.00m begl.



01/08/2024 CP06 – SPT split spoon sample from 12.00-12.45m begl.



01/08/2024 CP06 – Soil recovered from 12.00-12.50m begl.



01/08/2024 CP06 – Sample of weathered mudstone bedrock recovered from 13.00m begl.



01/08/2024 CP06 – SPT split spoon sample from 13.50-13.95m begl.

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH	**CP06**



01/08/2024 CP07 – Borehole location near the southeastern corner of the site.



01/08/2024 CP07 – Soil recovered from 0.50-1.00m begl.



01/08/2024 CP07 – SPT split spoon sample from 1.50-1.95m begl.



01/08/2024 CP07– Soil recovered from 1.50-2.00m begl.



01/08/2024 CP07 – SPT split spoon sample from 3.00-3.45m begl.



01/08/2024 CP07– Soil recovered from 3.00-3.50m begl.



02/08/2024 CP07 – SPT split spoon sample from 4.50-4.95m begl.



02/08/2024 CP07 – Soil recovered from 4.50-5.00m begl.



02/08/2024 CP07 – SPT split spoon sample from 6.00-6.45m begl.

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH	**CP07**



16/07/2024 WS01 – Hole location in NE corner of car park.



16/07/2024 WS01 – Inspection pit terminated on concrete at 0.48m begl.



16/07/2024 WS01 – Close up of pit showing water seepage at 0.35m begl.



16/07/2024 WS01 – Soil arisings from hand dug inspection pit (depth progressing left to right). Tape is extended to 1.00m.



16/07/2024 WS02 – Hole location.



16/07/2024 WS02 – Soil arisings from inspection pit (depth progressing bottom left to right). Tape is extended to 1.00m.



16/07/2024 WS02 – Recovered soil cores following penetration to sampler refusal at 3.50m begl (depth progressing left to right and top (1.00-2.00m) to bottom (3.00-3.50m)). Tape is extended to 1.00m.

WS01

WS02

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH



16/07/2024 WS03 – Hole location.



16/07/2024 WS03 – Soil arisings from hand dug inspection pit (depth progressing left to right). Tape is extended to 1.00m.



16/07/2024 WS03 – Recovered soil cores following penetration to 6.00m begl (depth progressing left to right and from top (1.00-2.00m) to bottom (5.00-6.00m)). Tape is extended to 1.00m.

WS03



16/07/2024 WS04 – Hand dug inspection pit excavated to obstruction (boulder) at 0.77m begl, where groundwater was also encountered.



16/07/2024 WS04 – Soil arisings from inspection pit (depth progressing left to right). Tape is extended to 1.00m.

WS04

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH



23/07/2024 WS05 – Hand dug inspection pit to 0.80m begl.



23/07/2024 WS05 – Windowless sampling in progress.



23/07/2024 WS05 – Soil arisngs from hand dug pit (right) and soil core (left) to 1.00m begl (depth progressing right to left). Tape is extended to 1.00m.



23/07/2024 WS05 – Recovered soil cores from below 1.00m following penetration to sampler refusal at 3.90m begl (depth progressing left to right and top to bottom). Tape is extended to 1.00m.



23/07/2024 WS05 – Thin horizon of coal encountered at 1.53m begl.



23/07/2024 WS05 – Pocket of coal in clay at 3.00m begl.

WS05



02/08/2024 WS06 – Hole location.



02/08/2024 WS06 – Recovered soil cores following penetration to 5.60m begl (depth progressing left to right and from top (0.00-2.00m) to bottom (5.00-5.60m)). Tape is extended to 1.00m.

WS06

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH



23/07/2024 DP01 – Hand dug inspection pit to 0.8m begl.



23/07/2024 DP01 – Soil arisings from inspection pit (depth progressing bottom right to top left).
Tape is extended to 1.00m.



23/07/2024 DP01 – Hole location (infront of clip board) prior to commencement of dynamic probing.

DP01



02/08/2024 DP02 – Hole location.

DP02

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH



15/07/2024 TP01 – Partially excavated pit exposing opencast backfill at shallow depth.



15/07/2024 TP01 – Pit upon completion to 2.30m begl.



15/07/2024 TP01 – Northeastern face of pit.



15/07/2024 TP01 – Soil arisings from pit.



15/07/2024 TP02 – Soil arisings from pit excavated to 2.50m begl, showing high cobble content.



15/07/2024 TP02 – Large piece of coal recovered from pit.



31/07/2024 TP03 – Pit upon completion to 2.90m begl, looking south.



31/07/2024 TP03 – Pit upon completion looking north.



31/07/2024 TP03 – Soil arisings from excavation.



31/07/2024 TP03 – Upon completion of backfilling (location identified by wooden peg).



31/07/2024 TP04 – Pit upon completion to 1.70m begl, exposing rubber hose at 0.85m. The pit was excavated into the southwestern toe of the mound.



31/07/2024 TP04 – Soil arisings from pit showing part of a large piece of old timber (centre left) and part of a section of structural steel (centre right).



31/07/2024 TP01 – Upon completion of backfilling

Project No: 23236	**Client:** Jarvale Construction Ltd	**Project:** Jacquet UK Ltd, Wentworth Way Industrial Estate, Tankersley, Barnsley, S75 3DH	**TP01-4**

APPENDIX D

Geotechnical Laboratory Testing Results

DRAFT

LABORATORY REPORT

Contract Number: PSL24/5356

Report Date: 19 August 2024

Client's Reference: 23236

Client Name: Silkstone Environmental Ltd
7 Hall Annex
Thorncliffe Park
Chapeltown
Sheffield
S35 2PH

For the attention of: Paul Stewart

Contract Title: JACQUET UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Date Received: 25/7/2024
Date Commenced: 25/7/2024
Date Completed: 19/8/2024

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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awatkins@prosoils.co.uk

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP01		D	0.76	1.60	Brown mottled grey slightly gravelly sandy CLAY.
TP02		D	0.20	2.50	Brown mottled grey gravelly sandy CLAY.
WS02		D	1.50	1.80	Brown mottled grey slightly sandy CLAY.
WS02		D	1.80	3.50	Brown mottled grey gravelly sandy CLAY.
WS03		B	0.15	1.70	Grey very gravelly slightly sandy CLAY.
WS03		D	3.10	3.40	Brown mottled grey slightly sandy CLAY.
WS03		D	5.50	6.00	Brown mottled grey slightly gravelly slightly sandy CLAY.
CP01		D	0.93	1.28	Brown mottled grey slightly gravelly slightly sandy CLAY.
CP01		D	4.50	-	Brown mottled grey slightly gravelly sandy CLAY.
CP01		B/D	6.00	6.45	Grey very gravelly slightly sandy CLAY.
CP02		D	1.50	-	Brown mottled grey slightly gravelly slightly sandy CLAY.
CP02		B/D	4.50	-	Brown very gravelly slightly sandy CLAY.
CP02		D	7.50	-	Brown mottled grey sandy CLAY.
CP02		B	8.50	-	Grey very gravelly sandy CLAY.
CP03		D	1.50	-	Brown mottled grey slightly gravelly slightly sandy CLAY.
CP03		D	4.50	-	Brown mottled grey slightly gravelly slightly sandy CLAY.
CP03		D	6.00	6.45	Brown mottled grey slightly gravelly sandy CLAY.
CP03		B	7.50	10.45	Grey very gravelly very sandy CLAY.
CP04		D	4.50	7.95	Brown slightly gravelly sandy CLAY.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP04		B	4.50	10.95	Brown very gravelly sandy CLAY.
CP04		D	9.00	12.45	Brown mottled grey slightly gravelly sandy CLAY.
CP04		D	13.50	16.00	Brown mottled grey slightly gravelly sandy CLAY.
CP04		B	12.00	14.00	Brown very gravelly sandy CLAY.
WS05		D	1.78	1.83	Brown mottled grey slightly gravelly sandy CLAY.
WS05		D	3.45	3.55	Brown mottled grey sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP01		D	0.76	1.60	14			40	20	20	93	Intermediate Plasticity CI
WS02		D	1.50	1.80	35			67	28	39	100	High Plasticity CH
WS03		D	3.10	3.40	21			63	27	36	100	High Plasticity CH
WS03		D	5.50	6.00	20			60	26	34	96	High Plasticity CH
CP01		D	0.93	1.28	22			55	25	30	95	High Plasticity CH
CP01		D	4.50	-	16			48	22	26	94	Intermediate Plasticity CI
CP01		B/D	6.00	6.45	16							
CP02		D	1.50	-	21			51	24	27	98	High Plasticity CH
CP02		B/D	4.50	-	13							
CP02		D	7.50	-	21			41	20	21	100	Intermediate Plasticity CI
CP03		D	1.50	-	22			60	26	34	95	High Plasticity CH
CP03		D	4.50	-	21			50	24	26	93	High Plasticity CH
CP03		D	6.00	6.45	29			38	19	19	95	Intermediate Plasticity CI
CP04		D	4.50	7.95	20			40	20	20	97	Intermediate Plasticity CI
CP04		D	9.00	12.45	20			49	23	26	92	Intermediate Plasticity CI
CP04		D	13.50	16.00	19			45	22	23	93	Intermediate Plasticity CI
WS05		D	1.78	1.83	31			52	25	27	93	High Plasticity CH
WS05		D	3.45	3.55	29			47	23	24	100	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

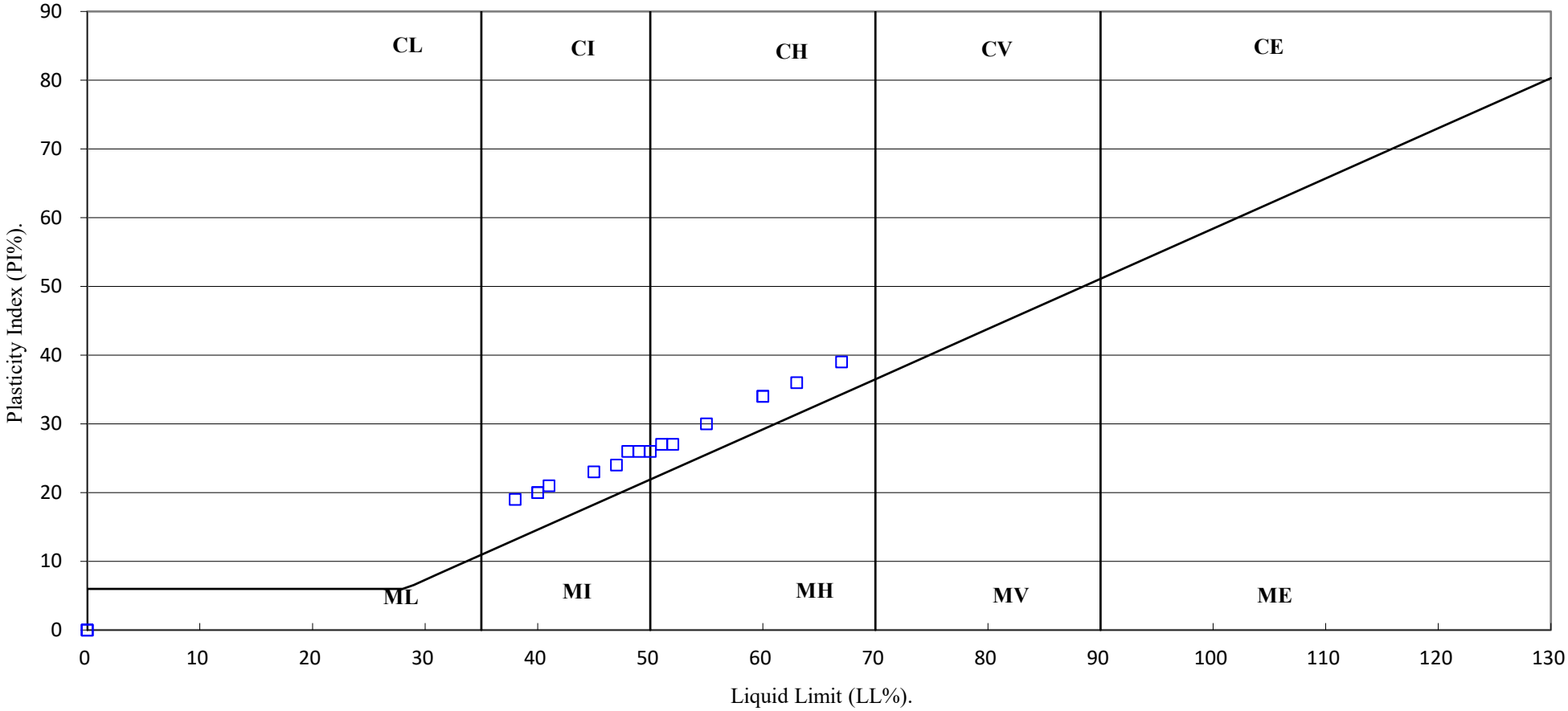
Contract No:

PSL24/5356

Client Ref:

23236

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043 / PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH	Contract No: PSL24/5356 Client Ref: 23236

PARTICLE SIZE DISTRIBUTION TEST

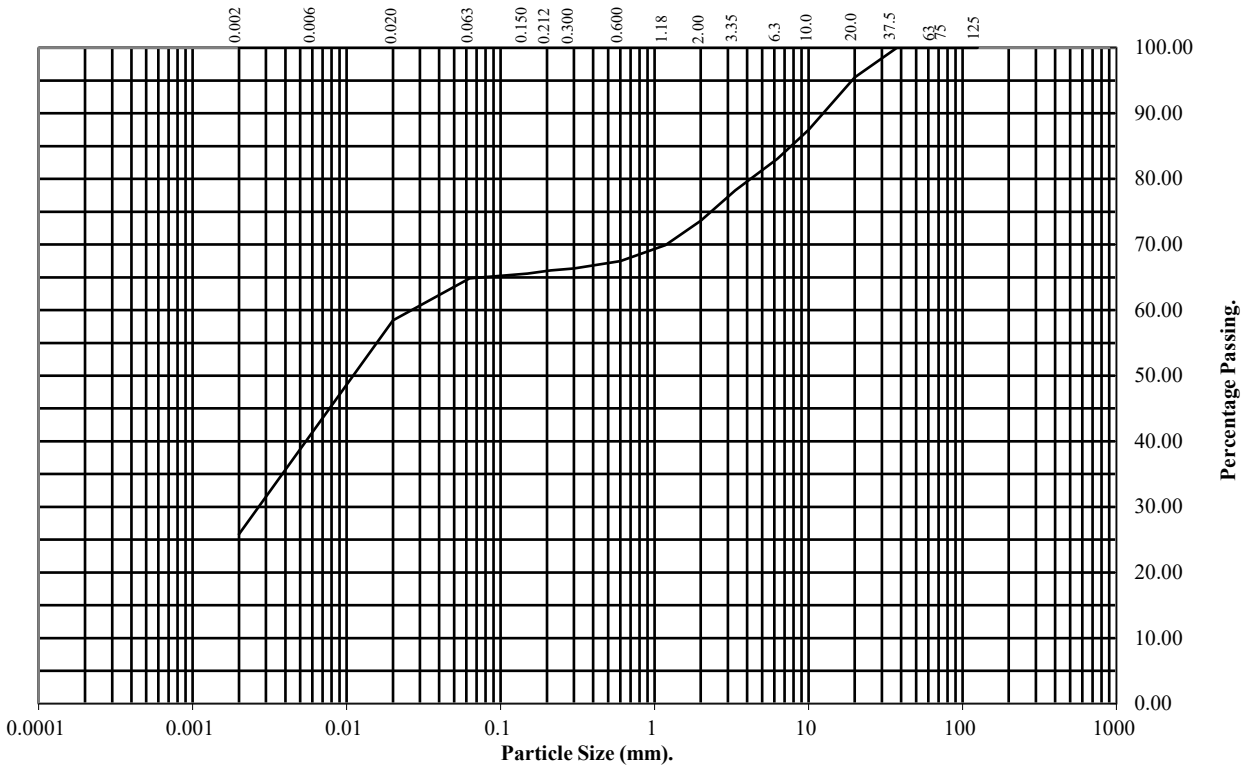
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP01 **Top Depth (m):** 6.00

Sample Number: **Base Depth(m):** 6.45

Sample Type: B/D



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	95
10	87
6.3	83
3.35	78
2	74
1.18	70
0.6	67
0.3	66
0.212	66
0.15	66
0.063	65

Particle Diameter	Percentage Passing
0.02	58
0.006	41
0.002	26

Soil Fraction	Total Percentage
Cobbles	0
Gravel	26
Sand	9
Silt	39
Clay	26

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Contract No: PSL24/5356

Client Ref: 23236

PARTICLE SIZE DISTRIBUTION TEST

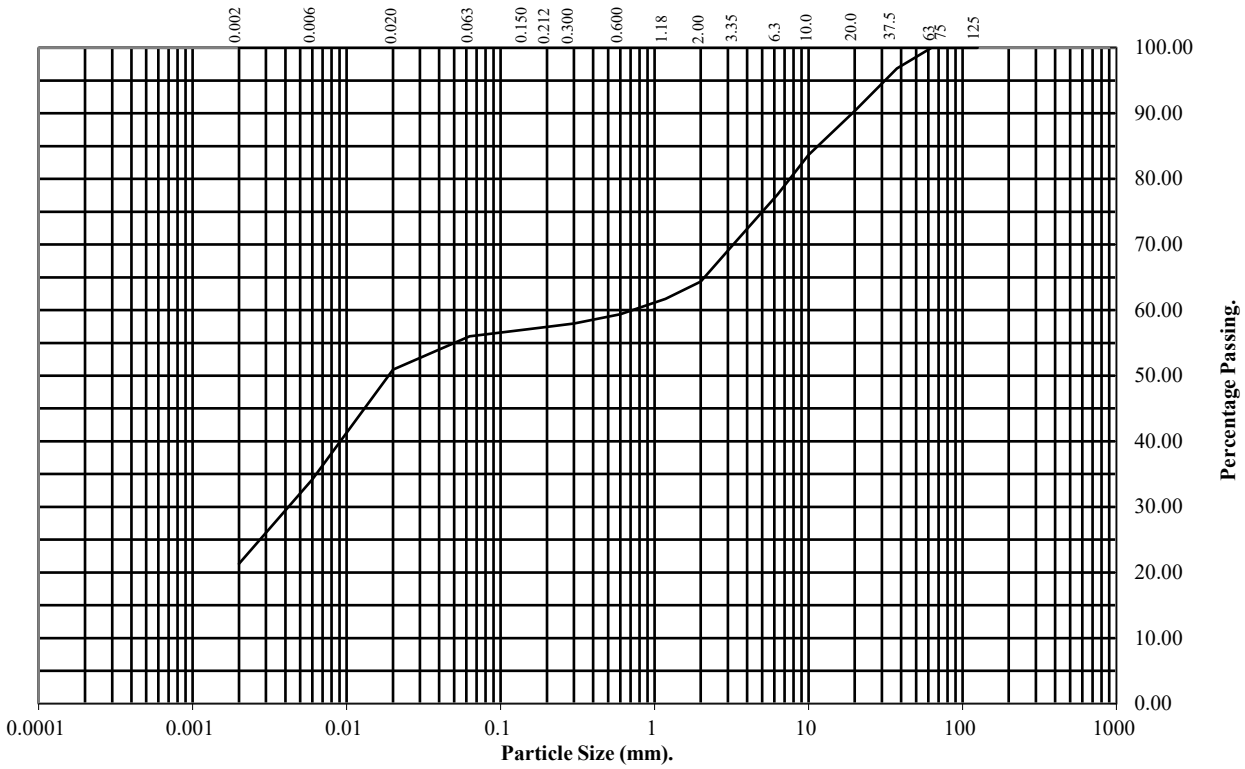
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP02 **Top Depth (m):** 4.50

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

Sample Type: B/D



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	97
20	90
10	84
6.3	78
3.35	70
2	64
1.18	62
0.6	59
0.3	58
0.212	58
0.15	57
0.063	56

Particle Diameter	Percentage Passing
0.02	51
0.006	34
0.002	21

Soil Fraction	Total Percentage
Cobbles	0
Gravel	36
Sand	8
Silt	35
Clay	21

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Contract No: PSL24/5356

Client Ref: 23236

PARTICLE SIZE DISTRIBUTION TEST

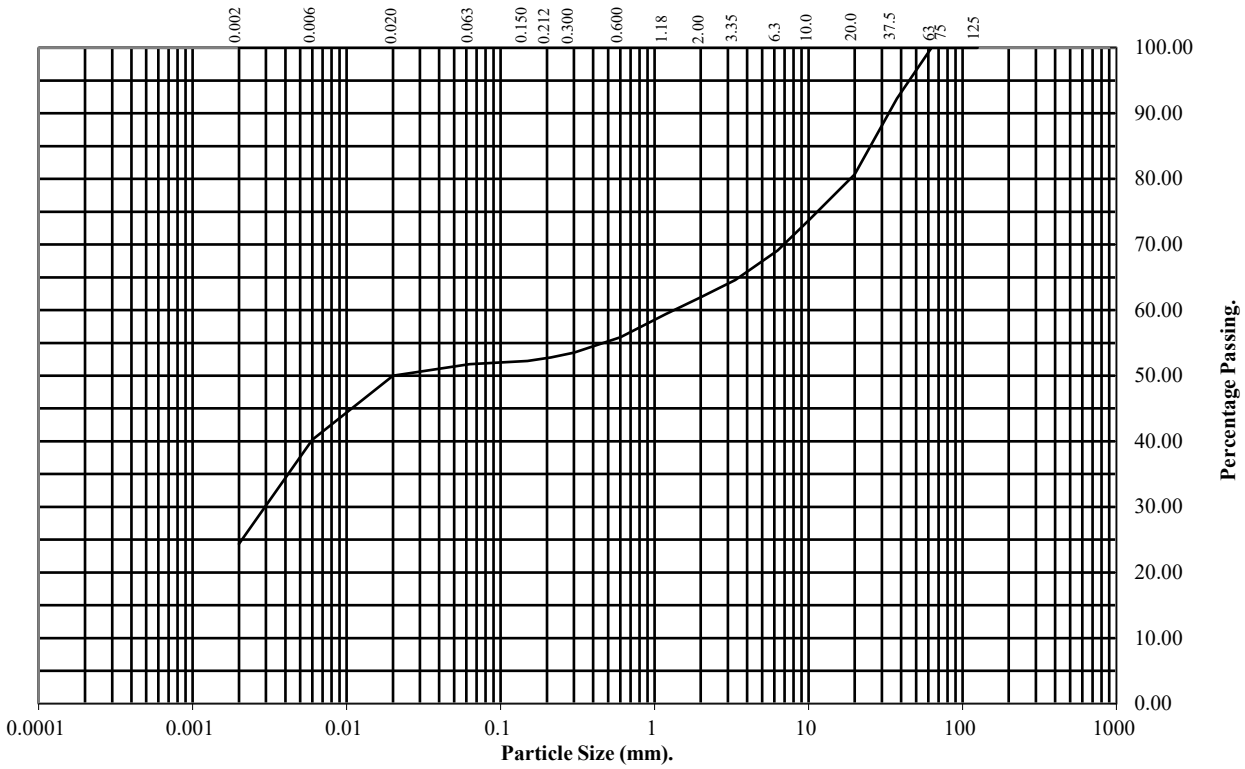
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP02 **Top Depth (m):** 8.50

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

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	92
20	81
10	74
6.3	69
3.35	65
2	62
1.18	59
0.6	56
0.3	54
0.212	53
0.15	52
0.063	52

Particle Diameter	Percentage Passing
0.02	50
0.006	40
0.002	24

Soil Fraction	Total Percentage
Cobbles	0
Gravel	38
Sand	10
Silt	28
Clay	24

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Contract No: PSL24/5356

Client Ref: 23236

PARTICLE SIZE DISTRIBUTION TEST

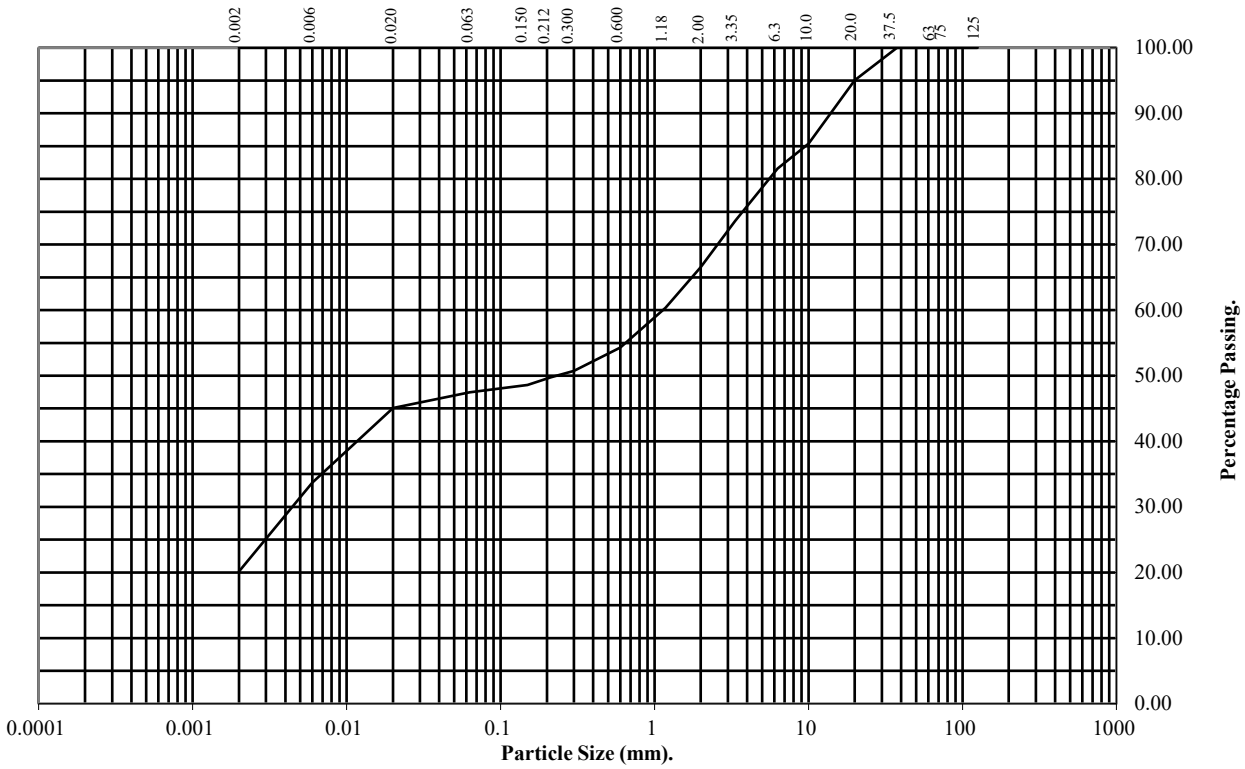
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP03 **Top Depth (m):** 7.50

Sample Number: **Base Depth(m):** 10.45

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	95
10	85
6.3	82
3.35	74
2	67
1.18	60
0.6	54
0.3	51
0.212	50
0.15	49
0.063	47

Particle Diameter	Percentage Passing
0.02	45
0.006	34
0.002	20

Soil Fraction	Total Percentage
Cobbles	0
Gravel	33
Sand	20
Silt	27
Clay	20

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Contract No: PSL24/5356

Client Ref: 23236

PARTICLE SIZE DISTRIBUTION TEST

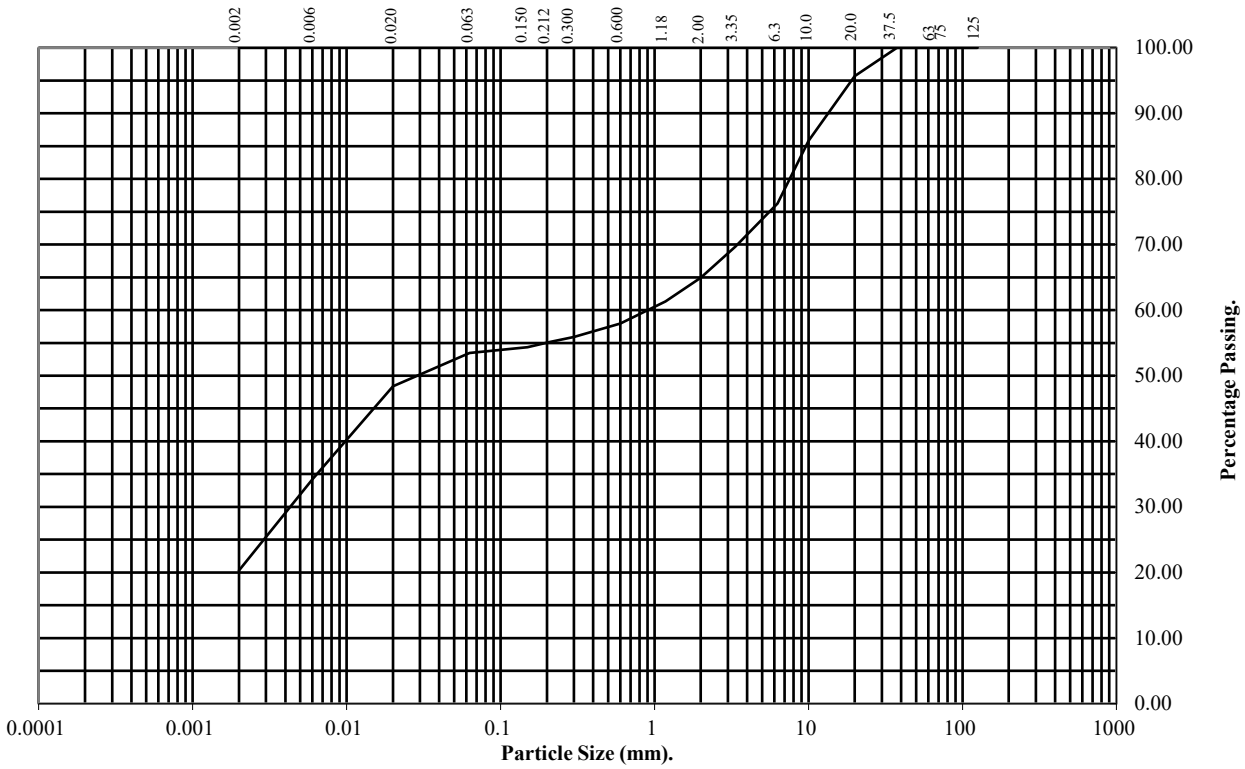
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP04 **Top Depth (m):** 4.50

Sample Number: **Base Depth(m):** 10.95

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	96
10	86
6.3	76
3.35	70
2	65
1.18	61
0.6	58
0.3	56
0.212	55
0.15	54
0.063	53

Particle Diameter	Percentage Passing
0.02	48
0.006	34
0.002	20

Soil Fraction	Total Percentage
Cobbles	0
Gravel	35
Sand	12
Silt	33
Clay	20

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Contract No: PSL24/5356

Client Ref: 23236

PARTICLE SIZE DISTRIBUTION TEST

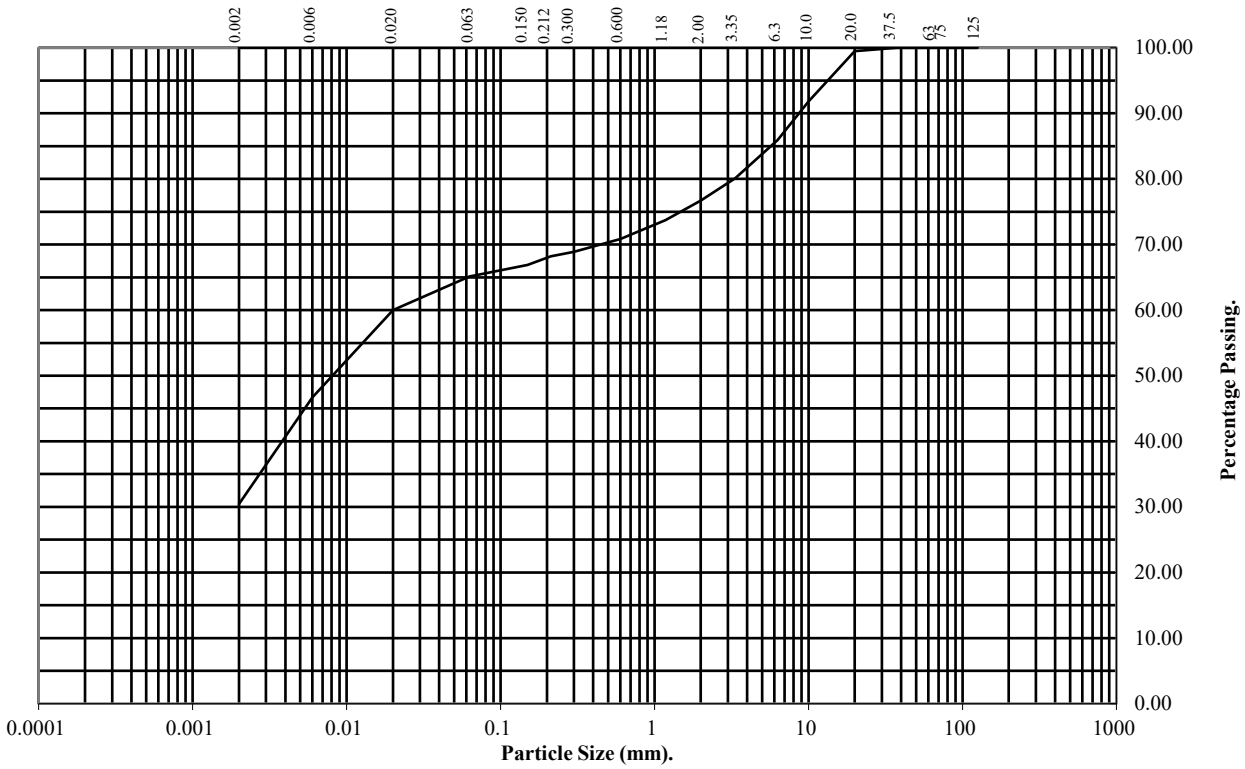
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP04 **Top Depth (m):** 12.00

Sample Number: **Base Depth(m):** 14.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	99
10	92
6.3	86
3.35	80
2	77
1.18	74
0.6	71
0.3	69
0.212	68
0.15	67
0.063	65

Particle Diameter	Percentage Passing
0.02	60
0.006	47
0.002	30

Soil Fraction	Total Percentage
Cobbles	0
Gravel	23
Sand	12
Silt	35
Clay	30

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Contract No:
PSL24/5356
Client Ref:
23236

PARTICLE SIZE DISTRIBUTION TEST

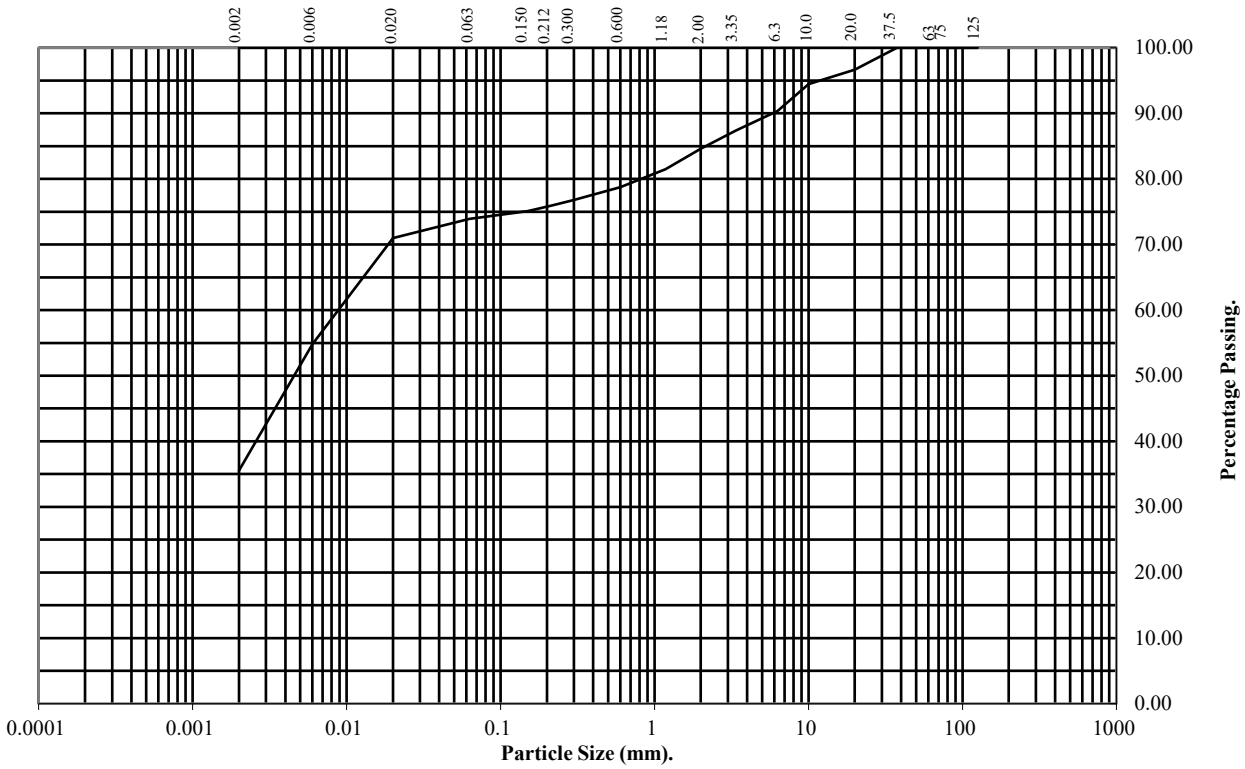
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP02 **Top Depth (m):** 0.20

Sample Number: **Base Depth(m):** 2.50

Sample Type: D



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	97
10	94
6.3	90
3.35	87
2	85
1.18	81
0.6	79
0.3	77
0.212	76
0.15	75
0.063	74

Particle Diameter	Percentage Passing
0.02	71
0.006	55
0.002	36

Soil Fraction	Total Percentage
Cobbles	0
Gravel	15
Sand	11
Silt	38
Clay	36

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Contract No:
PSL24/5356
Client Ref:
23236

PARTICLE SIZE DISTRIBUTION TEST

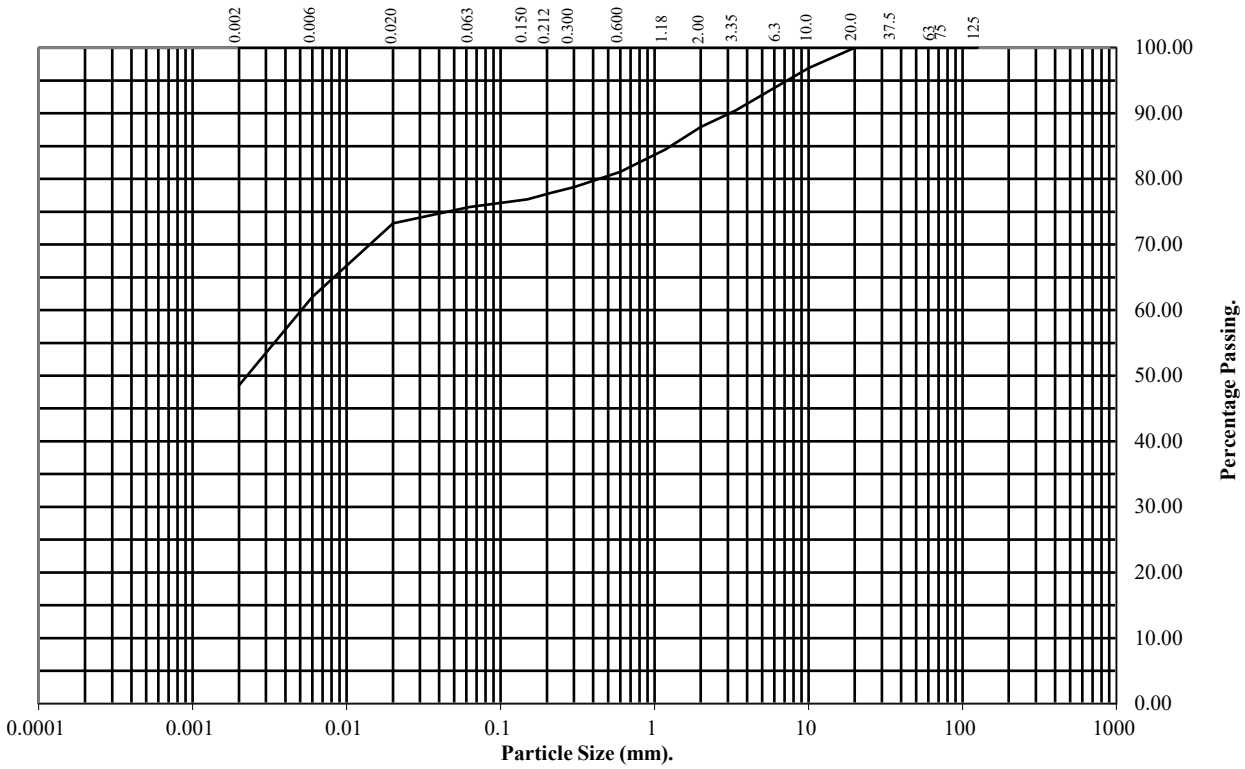
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: WS02 **Top Depth (m):** 1.80

Sample Number: **Base Depth(m):** 3.50

Sample Type: D



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	97
6.3	94
3.35	90
2	88
1.18	84
0.6	81
0.3	79
0.212	78
0.15	77
0.063	76

Particle Diameter	Percentage Passing
0.02	73
0.006	62
0.002	49

Soil Fraction	Total Percentage
Cobbles	0
Gravel	12
Sand	12
Silt	27
Clay	49

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Contract No: PSL24/5356

Client Ref: 23236

PARTICLE SIZE DISTRIBUTION TEST

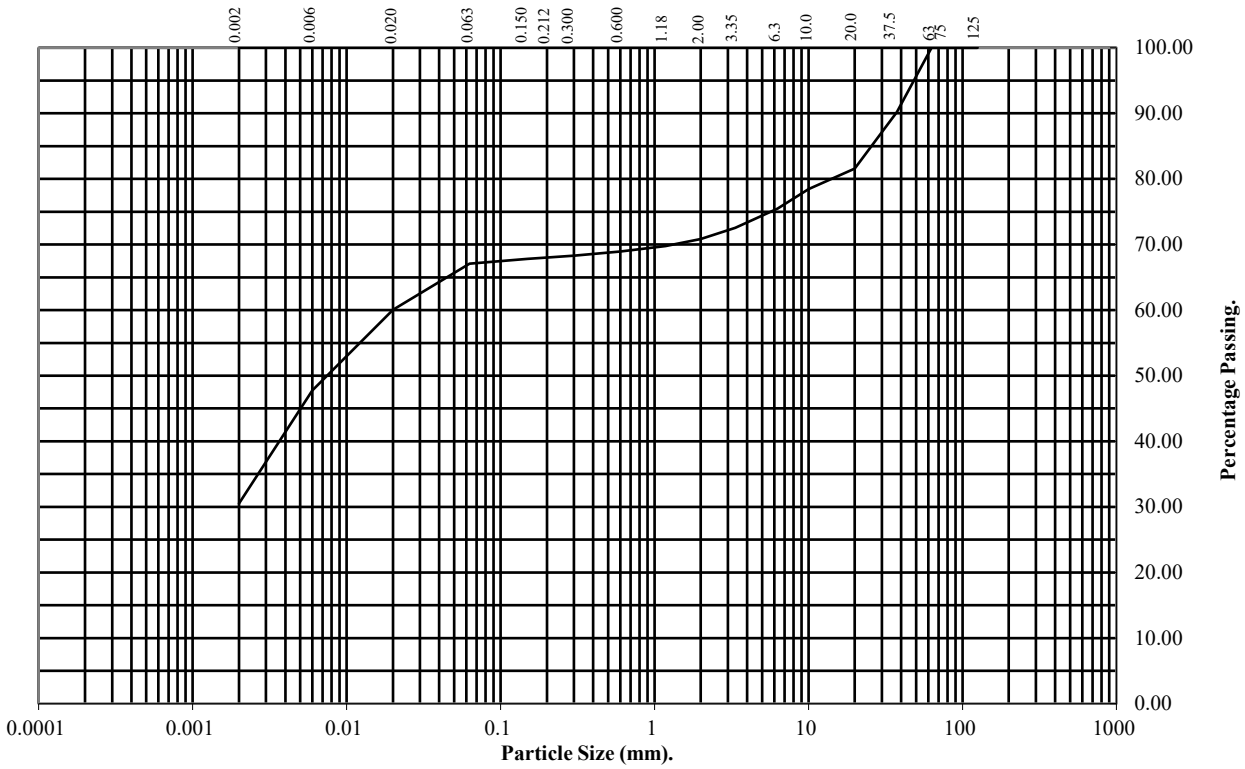
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: WS03 **Top Depth (m):** 0.15

Sample Number: **Base Depth(m):** 1.70

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	90
20	82
10	78
6.3	75
3.35	73
2	71
1.18	70
0.6	69
0.3	68
0.212	68
0.15	68
0.063	67

Particle Diameter	Percentage Passing
0.02	60
0.006	48
0.002	31

Soil Fraction	Total Percentage
Cobbles	0
Gravel	29
Sand	4
Silt	36
Clay	31

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Contract No: PSL24/5356

Client Ref: 23236

LABORATORY REPORT

Contract Number: PSL24/5809

Report Date: 29 August 2024

Client's Reference: 23236

Client Name: Silkstone Environmental Ltd
7 Hall Annex
Thorncliffe Park
Chapeltown
Sheffield
S35 2PH

For the attention of: Paul Stewart

Contract Title: JACQUET UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Date Received: 8/8/2024
Date Commenced: 8/8/2024
Date Completed: 29/8/2024

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)

5 – 7 Hexthorpe Road,
Hexthorpe,
Doncaster,
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
CP05		D	1.50	2.00	Brown mottled grey gravelly slightly sandy CLAY.
CP06		D	9.00	9.50	Brown mottled grey gravelly slightly sandy CLAY.
CP06		D	12.00	12.50	Brown mottled grey slightly gravelly slightly sandy CLAY.
CP07		D	1.50	5.00	Brown mottled grey gravelly slightly sandy CLAY.

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Contract No:
PSL24/5809
Client Ref:
23236

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP05		D	1.50	2.00	25			51	24	27	86	High Plasticity CH
CP06		D	9.00	9.50	22			50	24	26	88	High Plasticity CH
CP06		D	12.00	12.50	31			66	28	38	93	High Plasticity CH
CP07		D	1.50	5.00	25			54	25	29	81	High Plasticity CH

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

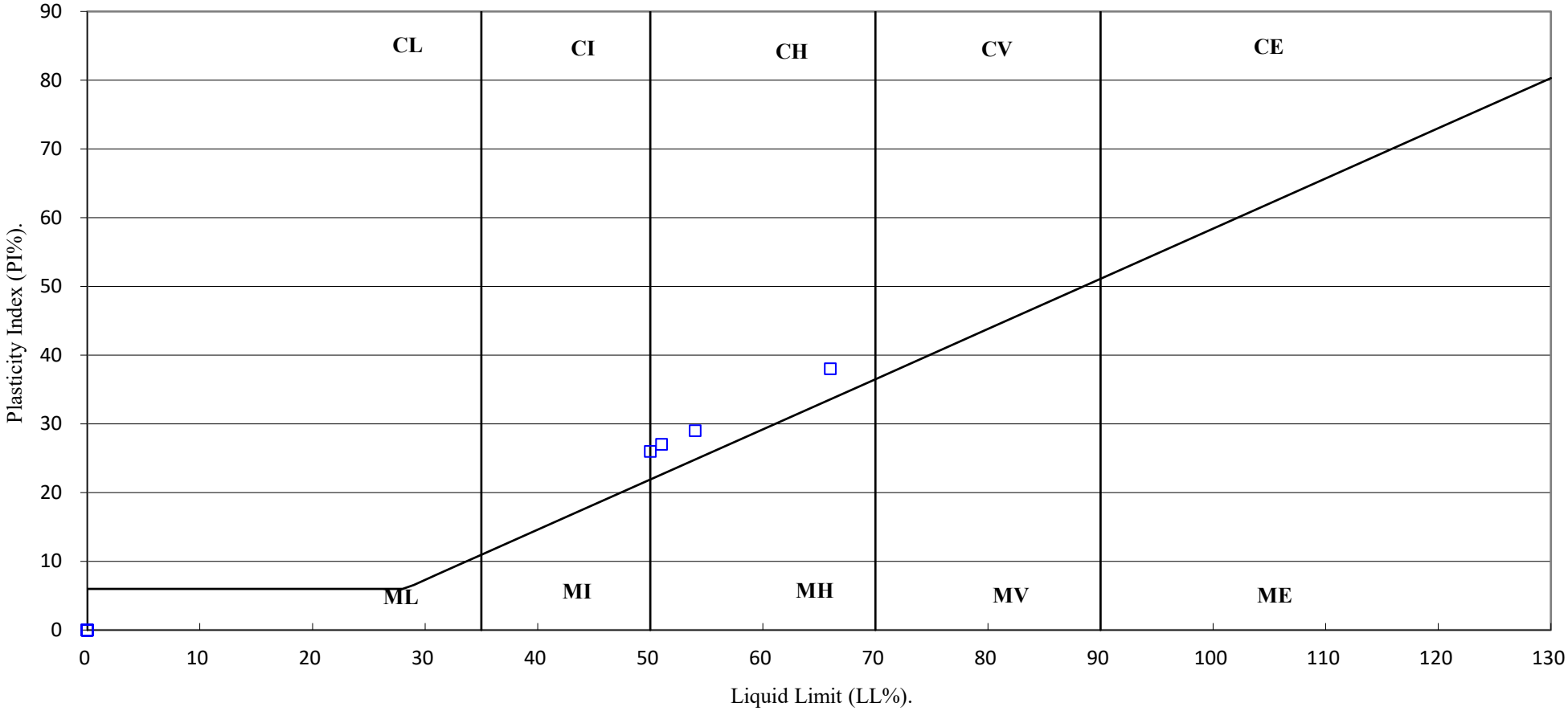
Contract No:

PSL24/5809

Client Ref:

23236

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	**Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH**

Contract No:
PSL24/5809
Client Ref:
23236

APPENDIX E

Chemical Laboratory Testing Results

DRAFT

Certificate of Analysis

Certificate Number	24-15368	*Issued:*	31-Jul-24

Client Silkstone Environmental Ltd.
7 Hall Annex
Thorncliffe Park
Chapeltown
Sheffield
S35 2PH

Our Reference	24-15368
Client Reference ~	23236
Order No ~	SEL 23236-01
Contract Title ~	Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH
Description	28 Soil samples, 3 Leachate prepared by DETS samples.
Date Received	25-Jul-24
Date Started	25-Jul-24
Date Completed	31-Jul-24
Test Procedures	Identified by prefix DETSn (details on request).

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

Approved By

Kirk Bridgewood
General Manager

ilac-MRA UKAS TESTING 2139

Summary of Chemical Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

			Lab No	2369042	2369043	2369044	2369046	2369047	2369049
			Sample ID ~	TP01	TP02	TP02	WS02	WS03	WS04
			Depth ~	0.20-0.76	0.02-0.70	0.70-2.50	0.20-3.50	0.15-1.00	0.02-0.20
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	15/07/2024	15/07/2024	15/07/2024	16/07/2024	16/07/2024	16/07/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	12	37		11	8.9	12
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.5		< 0.1	0.1	0.7
Chromium	DETSC 2301#	0.15	mg/kg	31	360		20	18	29
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	38	110		37	47	34
Lead	DETSC 2301#	0.3	mg/kg	59	160		21	18	57
Mercury	DETSC 2325#	0.05	mg/kg	0.05	< 0.05		< 0.05	< 0.05	0.06
Nickel	DETSC 2301#	1	mg/kg	31	300		29	32	37
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	1.6		< 0.5	0.6	0.7
Zinc	DETSC 2301#	1	mg/kg	170	150		72	79	160
Inorganics									
Loss on Ignition at 440oC	DETSC 2003#	0.01	%				7.9		
Conductivity	DETSC 2009	1	uS/cm				250		
pH	DETSC 2008#		pH	7.4	9.3	8.2	7.6	7.2	7.5
Calorific Value	DETSC 5008	1	MJ/kg				< 1.0		
Total Organic Carbon	DETSC 2084#	0.5	%				3.5		
Organic matter	DETSC 2002#	0.1	%	3.0	1.2		3.2	1.4	2.3
Redox Potential	DETSC 2016*	-500	mV				250		
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	60	83	96	110	480	26
Sulphur as S, Total	DETSC 2320	0.01	%			0.03			
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.02			
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	495	962		726	1160	478
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01		
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5			< 1.5		
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2			< 1.2		
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5			< 1.5		
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4			< 3.4		
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4			< 3.4		
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10			< 10		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01		
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9			< 0.9		
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5			< 0.5		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6			< 0.6		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4			< 1.4		
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4			< 1.4		
Aromatic C10-C44	DETSC 3072*	10	mg/kg	< 10			< 10		

Summary of Chemical Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

			Lab No	2369042	2369043	2369044	2369046	2369047	2369049
			Sample ID ~	TP01	TP02	TP02	WS02	WS03	WS04
			Depth ~	0.20-0.76	0.02-0.70	0.70-2.50	0.20-3.50	0.15-1.00	0.02-0.20
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	15/07/2024	15/07/2024	15/07/2024	16/07/2024	16/07/2024	16/07/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	< 10			< 10		
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01			< 0.01		
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01			< 0.01		
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01			< 0.01		
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01			< 0.01		
MTBE	DETSC 3321	0.01	mg/kg	< 0.01			< 0.01		
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	0.5	0.1		< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.4	0.1		< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	0.3	< 0.1		< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	0.1	< 0.1		< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.4	0.4		< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.2	< 0.1		< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.5	0.4		< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.6	0.5		< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.4	0.2		< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	0.3	0.1		< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.5	0.1		< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.4	< 0.1		< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.9	0.2		< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.4	< 0.1		< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.2	< 0.1		< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.5	< 0.1		< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	6.5	2.1		< 1.6	< 1.6	< 1.6

Summary of Chemical Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barns

				Lab No	2369050	2369051	2369052	2369053	2369054	2369055
				Sample ID ~	CP01	CP01	CP01	CP01	CP02	CP02
				Depth ~	0.13-0.38	0.70-0.75	3.60	7.50-7.95	0.16-0.33	1.50
				Other ID ~						
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	8.9	14			8.3	
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	3.6			0.7	
Chromium	DETSC 2301#	0.15	mg/kg	220	130			460	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0			< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	77	86			62	
Lead	DETSC 2301#	0.3	mg/kg	340	310			110	
Mercury	DETSC 2325#	0.05	mg/kg	0.06	0.12			0.62	
Nickel	DETSC 2301#	1	mg/kg	110	73			120	
Selenium	DETSC 2301#	0.5	mg/kg	0.8	0.7			4.2	
Zinc	DETSC 2301#	1	mg/kg	120	1300			540	
Inorganics										
Loss on Ignition at 440oC	DETSC 2003#	0.01	%			6.3			
Conductivity	DETSC 2009	1	uS/cm			330			
pH	DETSC 2008#		pH	10.8	10.3	7.7	7.1	11.3	7.8
Calorific Value	DETSC 5008	1	MJ/kg	< 1.0				< 1.0	
Total Organic Carbon	DETSC 2084#	0.5	%			1.3			
Organic matter	DETSC 2002#	0.1	%	2.8	2.0			2.4	
Redox Potential	DETSC 2016*	-500	mV			270			
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	120	150	99	310	110	250
Sulphur as S, Total	DETSC 2320	0.01	%			0.02	0.46		0.10
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.06	0.07		0.20
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	2180	1140			2160	
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01				
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01				
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01				
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		< 1.5				
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		< 1.2				
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		< 1.5				
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		< 3.4				
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg		< 3.4				
Aliphatic C10-C44	DETSC 3072*	10	mg/kg		< 10				
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01				
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01				
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01				
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		< 0.9				
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		0.8				
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		18				
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		100				
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg		21				
Aromatic C10-C44	DETSC 3072*	10	mg/kg		140				

Summary of Chemical Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barns

			Lab No	2369050	2369051	2369052	2369053	2369054	2369055
			Sample ID ~	CP01	CP01	CP01	CP01	CP02	CP02
			Depth ~	0.13-0.38	0.70-0.75	3.60	7.50-7.95	0.16-0.33	1.50
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg		140				
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01				
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01				
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01				
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01				
MTBE	DETSC 3321	0.01	mg/kg		< 0.01				
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	0.1	0.1			< 2.0	
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.2	0.6			< 2.0	
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1			< 2.0	
Fluorene	DETSC 3301	0.1	mg/kg	0.2	0.6			< 2.0	
Phenanthrene	DETSC 3301	0.1	mg/kg	0.6	6.4			< 2.0	
Anthracene	DETSC 3301	0.1	mg/kg	0.2	1.7			< 2.0	
Fluoranthene	DETSC 3301	0.1	mg/kg	1.1	7.9			< 2.0	
Pyrene	DETSC 3301	0.1	mg/kg	1.0	6.8			< 2.0	
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.6	3.0			< 2.0	
Chrysene	DETSC 3301	0.1	mg/kg	0.4	2.8			< 2.0	
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.3	1.5			< 2.0	
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.3	1.2			< 2.0	
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.6	2.6			< 2.0	
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	1.1			< 2.0	
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.2			< 2.0	
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	0.9			< 2.0	
PAH 16 Total	DETSC 3301	1.6	mg/kg	5.6	37			< 1.6	

Summary of Chemical Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barns

				Lab No	2369056	2369057	2369058	2369059	2369060	2369061
				Sample ID ~	CP02	CP02	CP03	CP03	CP03	CP04
				Depth ~	4.50	6.00-6.50	0.00-0.10	6.00-6.45	6.00-10.45	0.02-3.40
				Other ID ~						
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	17/07/2024	17/07/2024	17/07/2024	18/07/2024	18/07/2024	18/07/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	13		3.9	7.6		26
Cadmium	DETSC 2301#	0.1	mg/kg	0.1		< 0.1	< 0.1		0.3
Chromium	DETSC 2301#	0.15	mg/kg	35		2600	44		28
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg	33		380	37		50
Lead	DETSC 2301#	0.3	mg/kg	23		2.8	15		27
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		< 0.05	< 0.05		0.22
Nickel	DETSC 2301#	1	mg/kg	40		1400	45		31
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5		< 0.5	< 0.5		1.0
Zinc	DETSC 2301#	1	mg/kg	120		180	74		97
Inorganics										
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	4.8			5.2		
Conductivity	DETSC 2009	1	uS/cm	240			330		
pH	DETSC 2008#		pH	8.5	7.7	8.6	7.7	7.8	7.5
Calorific Value	DETSC 5008	1	MJ/kg				< 1.0		
Total Organic Carbon	DETSC 2084#	0.5	%	1.1			1.6		
Organic matter	DETSC 2002#	0.1	%	0.8		0.1	0.4		1.4
Redox Potential	DETSC 2016*	-500	mV	210			210		
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	56	82	12	140	290	1000
Sulphur as S, Total	DETSC 2320	0.01	%		0.03			0.06	
Sulphate as SO4, Total	DETSC 2321#	0.01	%		< 0.01			0.04	
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	< 100		199	551		2930
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5					< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2					< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5					< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4					< 3.4
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4					< 3.4
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10					< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01					< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9					< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5					< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6					< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4					< 1.4
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4					< 1.4
Aromatic C10-C44	DETSC 3072*	10	mg/kg	< 10					< 10

Summary of Chemical Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barns

			Lab No	2369056	2369057	2369058	2369059	2369060	2369061
			Sample ID ~	CP02	CP02	CP03	CP03	CP03	CP04
			Depth ~	4.50	6.00-6.50	0.00-0.10	6.00-6.45	6.00-10.45	0.02-3.40
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	17/07/2024	17/07/2024	17/07/2024	18/07/2024	18/07/2024	18/07/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	< 10					< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01					< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01					< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01					< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01					< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01					< 0.01
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		6.6
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.1		< 0.1	< 0.1		2.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		2.5
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		9.7
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		17
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		4.6
Pyrene	DETSC 3301	0.1	mg/kg	0.4		< 0.1	< 0.1		3.6
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		1.7
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		1.2
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		0.8
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		0.6
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		0.6
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1	< 0.1		0.8
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6		< 1.6	< 1.6		53

Summary of Chemical Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barns

			Lab No	2369062	2369063	2369064	2369065	2369066	2369067
			Sample ID ~	CP04	CP04	CP04	DP01	WS05	WS05
			Depth ~	4.50-7.95	13.50-16.00	12.00-15.00	0.50-0.55	0.05-0.30	0.80-1.00
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	18/07/2024	19/07/2024	19/07/2024	23/07/2024	23/07/2024	23/07/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg				35	5.4	
Cadmium	DETSC 2301#	0.1	mg/kg				0.2	0.1	
Chromium	DETSC 2301#	0.15	mg/kg				15	26	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg				< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg				41	32	
Lead	DETSC 2301#	0.3	mg/kg				21	23	
Mercury	DETSC 2325#	0.05	mg/kg				0.18	< 0.05	
Nickel	DETSC 2301#	1	mg/kg				35	43	
Selenium	DETSC 2301#	0.5	mg/kg				0.8	< 0.5	
Zinc	DETSC 2301#	1	mg/kg				87	150	
Inorganics									
Loss on Ignition at 440oC	DETSC 2003#	0.01	%			4.6	14		4.2
Conductivity	DETSC 2009	1	uS/cm			200	1700		460
pH	DETSC 2008#		pH	7.3	7.2		7.3	6.8	
Calorific Value	DETSC 5008	1	MJ/kg			< 1.0	4.1		< 1.0
Total Organic Carbon	DETSC 2084#	0.5	%			1.1	11		0.8
Organic matter	DETSC 2002#	0.1	%				3.9	3.8	
Redox Potential	DETSC 2016*	-500	mV			180	220		180
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	91	130		1800	46	
Sulphur as S, Total	DETSC 2320	0.01	%	0.03	0.05		0.53		
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.04	0.05		0.64		
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg				6360	139	
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg				< 0.01	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg				< 0.01	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg				< 0.01	< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg				< 1.5	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg				< 1.2	< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg				< 1.5	< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg				< 3.4	< 3.4	
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg				< 3.4	< 3.4	
Aliphatic C10-C44	DETSC 3072*	10	mg/kg				< 10	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg				< 0.01	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg				< 0.01	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg				< 0.01	< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg				< 0.9	< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg				< 0.5	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg				< 0.6	< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg				< 1.4	< 1.4	
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg				< 1.4	< 1.4	
Aromatic C10-C44	DETSC 3072*	10	mg/kg				< 10	< 10	

Summary of Chemical Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barns

			Lab No	2369062	2369063	2369064	2369065	2369066	2369067
			Sample ID ~	CP04	CP04	CP04	DP01	WS05	WS05
			Depth ~	4.50-7.95	13.50-16.00	12.00-15.00	0.50-0.55	0.05-0.30	0.80-1.00
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	18/07/2024	19/07/2024	19/07/2024	23/07/2024	23/07/2024	23/07/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg				< 10	< 10	
Benzene	DETSC 3321#	0.01	mg/kg				< 0.01	< 0.01	
Ethylbenzene	DETSC 3321#	0.01	mg/kg				< 0.01	< 0.01	
Toluene	DETSC 3321#	0.01	mg/kg				< 0.01	< 0.01	
Xylene	DETSC 3321#	0.01	mg/kg				< 0.01	< 0.01	
MTBE	DETSC 3321	0.01	mg/kg				< 0.01	< 0.01	
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg				0.9	0.1	
Acenaphthylene	DETSC 3301	0.1	mg/kg				0.6	0.6	
Acenaphthene	DETSC 3301	0.1	mg/kg				0.5	0.1	
Fluorene	DETSC 3301	0.1	mg/kg				0.2	0.4	
Phenanthrene	DETSC 3301	0.1	mg/kg				1.5	0.1	
Anthracene	DETSC 3301	0.1	mg/kg				1.5	0.2	
Fluoranthene	DETSC 3301	0.1	mg/kg				2.4	< 0.1	
Pyrene	DETSC 3301	0.1	mg/kg				2.3	< 0.1	
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg				1.4	0.4	
Chrysene	DETSC 3301	0.1	mg/kg				1.1	0.8	
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg				0.8	< 0.1	
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg				0.6	< 0.1	
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg				1.5	< 0.1	
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg				0.8	< 0.1	
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg				0.2	< 0.1	
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg				0.8	< 0.1	
PAH 16 Total	DETSC 3301	1.6	mg/kg				17	2.6	

Summary of Chemical Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barns

Lab No	2369068
Sample ID ~	WS05
Depth ~	1.95-2.00
Other ID ~	
Sample Type ~	SOIL
Sampling Date ~	23/07/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	
Cadmium	DETSC 2301#	0.1	mg/kg	
Chromium	DETSC 2301#	0.15	mg/kg	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	
Copper	DETSC 2301#	0.2	mg/kg	
Lead	DETSC 2301#	0.3	mg/kg	
Mercury	DETSC 2325#	0.05	mg/kg	
Nickel	DETSC 2301#	1	mg/kg	
Selenium	DETSC 2301#	0.5	mg/kg	
Zinc	DETSC 2301#	1	mg/kg	
Inorganics				
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	
Conductivity	DETSC 2009	1	uS/cm	
pH	DETSC 2008#		pH	6.3
Calorific Value	DETSC 5008	1	MJ/kg	
Total Organic Carbon	DETSC 2084#	0.5	%	
Organic matter	DETSC 2002#	0.1	%	
Redox Potential	DETSC 2016*	-500	mV	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	120
Sulphur as S, Total	DETSC 2320	0.01	%	0.03
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.06
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	
Aromatic C10-C44	DETSC 3072*	10	mg/kg	

Summary of Chemical Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barns

Lab No	2369068
Sample ID ~	WS05
Depth ~	1.95-2.00
Other ID ~	
Sample Type ~	SOIL
Sampling Date ~	23/07/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	
Benzene	DETSC 3321#	0.01	mg/kg	
Ethylbenzene	DETSC 3321#	0.01	mg/kg	
Toluene	DETSC 3321#	0.01	mg/kg	
Xylene	DETSC 3321#	0.01	mg/kg	
MTBE	DETSC 3321	0.01	mg/kg	
PAHs				
Naphthalene	DETSC 3301	0.1	mg/kg	
Acenaphthylene	DETSC 3301	0.1	mg/kg	
Acenaphthene	DETSC 3301	0.1	mg/kg	
Fluorene	DETSC 3301	0.1	mg/kg	
Phenanthrene	DETSC 3301	0.1	mg/kg	
Anthracene	DETSC 3301	0.1	mg/kg	
Fluoranthene	DETSC 3301	0.1	mg/kg	
Pyrene	DETSC 3301	0.1	mg/kg	
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	
Chrysene	DETSC 3301	0.1	mg/kg	
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	
PAH 16 Total	DETSC 3301	1.6	mg/kg	

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-15368
Client Ref 23236
Contract Title Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH *Sample Numbers* 2369048 2369069
Sample Id WS03 1.00-6.00 *Date Analysed* 31/07/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	6.4	3	5	6
DETSC 2003# Loss On Ignition	%	11.0	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# TPH (C10 - C40)	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	6.9	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.64	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	5.6	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.49	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	< 0.40	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.68	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.34	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	5.6	0.056	4	50	200
DETSC 2055 Chloride as Cl	1300	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	170	1.7	10	150	500
DETSC 2055 Sulphate as SO4	8000	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	45000	450	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	6.0
DETSC 2009 Conductivity uS/cm	64.9
* Temperature*	19.0

Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.096

Stage 1

Volume of Leachant L2*	0.948
Volume of Eluate VE1*	0.901

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-15368
Client Ref 23236
Contract Title Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH *Sample Numbers* 2369050 2369070
Sample Id CP01 0.13-0.38 *Date Analysed* 31/07/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	3.5	3	5	6
DETSC 2003# Loss On Ignition	%	4.2	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# TPH (C10 - C40)	mg/kg	570.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	5.6	100	n/a	n/a
DETSC 2008# pH	pH Units	10.8	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate) Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	3.2	0.032	0.5	2	25
DETSC 2306 Barium as Ba	17	0.17	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	4.5	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	2.3	0.023	2	50	100
DETSC 2306 Mercury as Hg	0.066	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	8.8	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.17	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.75	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.39	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	< 1.3	< 0.01	4	50	200
DETSC 2055 Chloride as Cl	2300	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	750	7.5	10	150	500
DETSC 2055 Sulphate as SO4	23000	230	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	90000	900	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	9.7
DETSC 2009 Conductivity uS/cm	129.0
* Temperature*	19.0

Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.098

Stage 1

Volume of Leachant L2*	0.965
Volume of Eluate VE1*	0.909

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-15368
Client Ref 23236
Contract Title Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH *Sample Numbers* 2369061 2369071
Sample Id CP04 0.02-3.40 *Date Analysed* 31/07/2024

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	15.0	3	5	6
DETSC 2003# Loss On Ignition	%	18.0	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# TPH (C10 - C40)	mg/kg	240.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	53.0	100	n/a	n/a
DETSC 2008# pH	pH Units	7.5	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate) Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.8	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	35	0.35	20	100	300
DETSC 2306 Cadmium as Cd	0.18	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	1.9	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	2.6	0.026	2	50	100
DETSC 2306 Mercury as Hg	0.033	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	6.5	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	2	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	1.6	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.55	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	2	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	13	0.13	4	50	200
DETSC 2055 Chloride as Cl	1000	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	480	4.8	10	150	500
DETSC 2055 Sulphate as SO4	220000	2200	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	360000	3600	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	8.0
DETSC 2009 Conductivity uS/cm	520.0
* Temperature*	19.0

Mass of Sample Kg*	0.110
Mass of dry Sample Kg*	0.095

Stage 1

Volume of Leachant L2*	0.938
Volume of Eluate VE1*	0.892

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-15368
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2369041	TP01 0.02-0.20	SOIL	NAD	none	Ben Rose
2369043	TP02 0.02-0.70	SOIL	NAD	none	Ben Rose
2369045	WS01 0.18-0.48	SOIL	Amosite	Amosite present as fibre bundles	Ben Rose
2369046	WS02 0.20-3.50	SOIL	NAD	none	Ben Rose
2369047	WS03 0.15-1.00	SOIL	NAD	none	Ben Rose
2369049	WS04 0.02-0.20	SOIL	NAD	none	Ben Rose
2369050	CP01 0.13-0.38	SOIL	Chrysotile	Chrysotile present as fibre bundles	Ben Rose
2369051	CP01 0.70-0.75	SOIL	Amosite	Amosite present as fibre bundles	Ben Rose
2369054	CP02 0.16-0.33	SOIL	NAD	none	Ben Rose
2369058	CP03 0.00-0.10	SOIL	NAD	none	Ben Rose
2369059	CP03 6.00-6.45	SOIL	NAD	none	Ben Rose
2369061	CP04 0.02-3.40	SOIL	NAD	none	Ben Rose
2369065	DP01 0.50-0.55	SOIL	NAD	none	Ben Rose
2369066	WS05 0.05-0.30	SOIL	NAD	none	Ben Rose

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

Information in Support of the Analytical Results

Our Ref 24-15368
Client Ref ~ 23236
Contract ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2369041	TP01 0.02-0.20 SOIL	15/07/24	GJ 250ml, GJ 60ml, PT 1L		
2369042	TP01 0.20-0.76 SOIL	15/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2369043	TP02 0.02-0.70 SOIL	15/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2369044	TP02 0.70-2.50 SOIL	15/07/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2369045	WS01 0.18-0.48 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L		
2369046	WS02 0.20-3.50 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L x2	pH + Conductivity (7 days)	
2369047	WS03 0.15-1.00 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2369048	WS03 1.00-6.00 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2369049	WS04 0.02-0.20 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2369050	CP01 0.13-0.38 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2369051	CP01 0.70-0.75 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2369052	CP01 3.60 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2369053	CP01 7.50-7.95 SOIL	16/07/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2369054	CP02 0.16-0.33 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2369055	CP02 1.50 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L x2	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2369056	CP02 4.50 SOIL	17/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2369057	CP02 6.00-6.50 SOIL	17/07/24	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2369058	CP03 0.00-0.10 SOIL	17/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2369059	CP03 6.00-6.45 SOIL	18/07/24	GJ 250ml, GJ 60ml, PT 1L		
2369060	CP03 6.00-10.45 SOIL	18/07/24	PT 1L		
2369061	CP04 0.02-3.40 SOIL	18/07/24	GJ 250ml x2, GJ 60ml x2, PT 1L x3		
2369062	CP04 4.50-7.95 SOIL	18/07/24	PT 1L		
2369063	CP04 13.50-16.00 SOIL	19/07/24	PT 1L		
2369064	CP04 12.00-15.00 SOIL	19/07/24	GJ 250ml, GJ 60ml, PT 1L		
2369065	DP01 0.50-0.55 SOIL	23/07/24	GJ 250ml, GJ 60ml, PT 1L		
2369066	WS05 0.05-0.30 SOIL	23/07/24	GJ 250ml, GJ 60ml, PT 1L		
2369067	WS05 0.80-1.00 SOIL	23/07/24	GJ 250ml, GJ 60ml, PT 1L		
2369068	WS05 1.95-2.00 SOIL	23/07/24	PT 1L		
2369069	WS03 1.00-6.00 LEACHATE	16/07/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2369070	CP01 0.13-0.38 LEACHATE	16/07/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2369071	CP04 0.02-3.40 LEACHATE	18/07/24	GJ 250ml x2, GJ 60ml x2, PT 1L x3	pH/Cond (1 days)	

Information in Support of the Analytical Results

Our Ref 24-15368
Client Ref ~ 23236
Contract ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

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

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

Disposal

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

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

Information in Support of the Analytical Results

Our Ref 24-15368
Client Ref ~ 23236
Contract ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-16590	*Issued:*	14-Aug-24

Client Silkstone Environmental Ltd.
7 Hall Annex
Thorncliffe Park
Chapeltown
Sheffield
S35 2PH

Our Reference	24-16590
Client Reference ~	23236
Order No ~	SEL23236-04
Contract Title ~	Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH
Description	9 Soil samples.
Date Received	08-Aug-24
Date Started	08-Aug-24
Date Completed	14-Aug-24
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-16590
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

			Lab No	2375432	2375433	2375434	2375435	2375436	2375437
			Sample ID ~	TP03	TP04	CP05	CP05	CP06	CP07
			Depth ~	2.60-2.90	0.10-0.40	0.50-1.00	3.00-3.50	3.00-3.50	0.02-0.10
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	31/07/2024	31/07/2024	31/07/2024	31/07/2024	01/08/2024	01/08/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	3.3	6.5	3.7		7.8	5.8
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	0.1		< 0.1	0.1
Chromium	DETSC 2301#	0.15	mg/kg	19	21	10		20	21
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	33	37	16		31	32
Lead	DETSC 2301#	0.3	mg/kg	19	22	16		20	17
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	37	39	21		34	36
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5		< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	93	97	65		98	100
Inorganics									
Loss on Ignition at 440oC	DETSC 2003#	0.01	%				5.1		
Conductivity	DETSC 2009	1	uS/cm				220		
pH	DETSC 2008#		pH	8.2	8.3	8.4	7.7	8.0	7.5
Calorific Value	DETSC 5008	1	MJ/kg				< 1.0		
Total Organic Carbon	DETSC 2084#	0.5	%				1.9		
Organic matter	DETSC 2002#	0.1	%	1.4	1.2	1.5		1.5	6.8
Redox Potential	DETSC 2016*	-500	mV				180		
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	110	19	130	84	140	320
Sulphur as S, Total	DETSC 2320	0.01	%				0.05		
Sulphate as SO4, Total	DETSC 2321#	0.01	%				0.04		
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	357	224	387		385	1000
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	0.09		0.10		0.10	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5		< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2		< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5		< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4		< 3.4	
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4		< 3.4		< 3.4	
Aliphatic C10-C44	DETSC 3072*	10	mg/kg	< 10		< 10		< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9		< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5		< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		< 0.6		< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4		< 1.4	
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4		< 1.4		< 1.4	
Aromatic C10-C44	DETSC 3072*	10	mg/kg	< 10		< 10		< 10	

Summary of Chemical Analysis
Soil Samples

Our Ref 24-16590
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

				Lab No	2375432	2375433	2375434	2375435	2375436	2375437
				Sample ID ~	TP03	TP04	CP05	CP05	CP06	CP07
				Depth ~	2.60-2.90	0.10-0.40	0.50-1.00	3.00-3.50	3.00-3.50	0.02-0.10
				Other ID ~						
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	31/07/2024	31/07/2024	31/07/2024	31/07/2024	01/08/2024	01/08/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg	< 10		< 10		< 10	
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
MTBE	DETSC 3321	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
PAHs										
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.1		< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.1		< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.1		< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6		< 1.6	< 1.6

Summary of Chemical Analysis
Soil Samples

Our Ref 24-16590
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley

			Lab No	2375438	2375439	2375440
			Sample ID ~	CP07	CP07	WS06
			Depth ~	3.00-5.00	0.50-5.00	5.00-5.60
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	02/08/2024	02/08/2024	02/08/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	7.5		5.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.1		< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	18		15
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg	31		37
Lead	DETSC 2301#	0.3	mg/kg	22		20
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		< 0.05
Nickel	DETSC 2301#	1	mg/kg	32		30
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5		< 0.5
Zinc	DETSC 2301#	1	mg/kg	88		83
Inorganics						
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	13		
Conductivity	DETSC 2009	1	uS/cm	400		
pH	DETSC 2008#		pH	7.1	7.6	8.1
Calorific Value	DETSC 5008	1	MJ/kg	3.0		
Total Organic Carbon	DETSC 2084#	0.5	%	8.6		
Organic matter	DETSC 2002#	0.1	%	6.0		1.1
Redox Potential	DETSC 2016*	-500	mV	180		
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	140	160	120
Sulphur as S, Total	DETSC 2320	0.01	%		0.10	
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.04	
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	380		318
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg			
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg			
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg			
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg			
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg			
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg			
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg			
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg			
Aliphatic C10-C44	DETSC 3072*	10	mg/kg			
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg			
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg			
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg			
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg			
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg			
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg			
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg			
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg			
Aromatic C10-C44	DETSC 3072*	10	mg/kg			

Summary of Chemical Analysis
Soil Samples

Our Ref 24-16590
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley

			Lab No	2375438	2375439	2375440
			Sample ID ~	CP07	CP07	WS06
			Depth ~	3.00-5.00	0.50-5.00	5.00-5.60
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	02/08/2024	02/08/2024	02/08/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg			
Benzene	DETSC 3321#	0.01	mg/kg			
Ethylbenzene	DETSC 3321#	0.01	mg/kg			
Toluene	DETSC 3321#	0.01	mg/kg			
Xylene	DETSC 3321#	0.01	mg/kg			
MTBE	DETSC 3321	0.01	mg/kg			
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6		< 1.6

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-16590
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2375432	TP03 2.60-2.90	SOIL	NAD	none	Vicky Convery
2375433	TP04 0.10-0.40	SOIL	NAD	none	Vicky Convery
2375434	CP05 0.50-1.00	SOIL	NAD	none	Vicky Convery
2375440	WS06 5.00-5.60	SOIL	NAD	none	Vicky Convery

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

Information in Support of the Analytical Results

Our Ref 24-16590
Client Ref ~ 23236
Contract ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2375432	TP03 2.60-2.90 SOIL	31/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2375433	TP04 0.10-0.40 SOIL	31/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2375434	CP05 0.50-1.00 SOIL	31/07/24	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2375435	CP05 3.00-3.50 SOIL	31/07/24	GJ 250ml, GJ 60ml, PT 1L x2	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2375436	CP06 3.00-3.50 SOIL	01/08/24	GJ 250ml, GJ 60ml, PT 1L		
2375437	CP07 0.02-0.10 SOIL	01/08/24	GJ 250ml, GJ 60ml, PT 1L		
2375438	CP07 3.00-5.00 SOIL	02/08/24	PT 1L		
2375439	CP07 0.50-5.00 SOIL	02/08/24	PT 1L		
2375440	WS06 5.00-5.60 SOIL	02/08/24	PT 1L		

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

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

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

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

Disposal

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

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

Key:

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

***** -not accredited.

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

$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-16801	*Issued:*	16-Aug-24

Client Silkstone Environmental Ltd.
7 Hall Annex
Thorncliffe Park
Chapeltown
Sheffield
S35 2PH

Our Reference	24-16801
Client Reference ~	23236
Order No ~	SEL 23236-01
Contract Title ~	Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH
Description	7 Soil samples.
Date Received	25-Jul-24
Date Started	12-Aug-24
Date Completed	16-Aug-24
Test Procedures	Identified by prefix DETSn (details on request).

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

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Soil Samples

Our Ref 24-16801
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

			Lab No	2376690	2376691	2376692	2376693	2376698
			Sample ID ~	WS01	CP01	CP01	CP03	CP03
			Depth ~	0.18-0.48	0.13-0.38	0.70-0.75	0.00-0.10	1.50
			Other ID ~					
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	16/07/2024	16/07/2024	16/07/2024	17/07/2024	17/07/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Asbestos Quantification	DETSC 1102	0.001	%	0.001	0.002	0.002		
Metals								
Nickel	DETSC 2301#	1	mg/kg					21
Petroleum Hydrocarbons								
EPH (C10-C40)	DETSC 3311#	10	mg/kg				< 10	

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-16801
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2376697	CP01 0.93-1.28	SOIL	NAD	none	Lee Kerridge

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

Summary of Asbestos Quantification Analysis
Soil Samples

Our Ref 24-16801
Client Ref ~ 23236
Contract Title ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Lab No		2376690	2376691	2376692
Sample ID ~		WS01	CP01	CP01
Depth ~		0.18-0.48	0.13-0.38	0.70-0.75
Other ID ~				
Sample Type ~				
Sampling Date ~		16/07/2024	16/07/2024	16/07/2024
Sampling Time ~				
Test	**Method**	**Units**				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %		**0.001**	**0.002**	**0.002**
Gravimetric Quantification (a)	DETSC 1102	Mass %		na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %		0.001	0.002	0.002
Quantification by PCOM (c)	DETSC 1102	Mass %		na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g		na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g		1091.73	877.60	1012.50
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %		0.001	na	na
% Chrysotile bundles in sample		Mass %		na	0.002	0.002
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %		na	na	na
% Chrysotile fibres in sample		Mass %		na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g		na	na	na
Chrysotile fibres		Fibres/g		na	na	na

* Denotes test or material description outside of UKAS accreditation.
% asbestos in Asbestos Containing Materials (ACMs) is determined by by reference to HSG 264.
Recommended sample size for quantification is approximately 1kg
# denotes deviating sample

Information in Support of the Analytical Results

Our Ref 24-16801
Client Ref ~ 23236
Contract ~ Jacquet UK Ltd, Wentworth Way, Tankersley, Barnsley, S75 3DH

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2376690	WS01 0.18-0.48 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L		
2376691	CP01 0.13-0.38 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L		
2376692	CP01 0.70-0.75 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L		
2376693	CP03 0.00-0.10 SOIL	17/07/24	GJ 250ml, GJ 60ml, PT 1L		
2376694	CP03 0.00-0.10 SOIL	17/07/24	GJ 250ml, GJ 60ml, PT 1L		
2376697	CP01 0.93-1.28 SOIL	16/07/24	GJ 250ml, GJ 60ml, PT 1L		
2376698	CP03 1.50 SOIL	17/07/24	GJ 250ml, GJ 60ml, PT 1L		

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

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Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
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The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

APPENDIX F

Soil Contamination Screening Assessment for Human Health

DRAFT

DETS Report Nos. 24-15368, 24-16590 & 24-16801-1
Client: Jarvale Construction Ltd
Client Project Name: Jacquet UK Ltd, Wentworth Way,Tankersley, Barnsley, S75 3DH
Client Project Ref: 23236

Soil Contamination Screening Assessment for Human Health

						AREA 1																											
					Lab No	2369041	2369042	2369043	2369044	2369045	2369046	2369047	2369049	2369050	2369051	2376697	2369052	2369053	2369054	2369055	2369056	2369057	2369058	2376698	2369059	2369060	2369061	2369062	2369063	2369064	2369065	2369066	2369067	2369068
					Sample ID ~	TP01	TP01	TP02	TP02	WS01	WS02	WS03	WS04	CP01	CP01	CP01	CP01	CP01	CP02	CP02	CP02	CP02	CP03	CP03	CP03	CP03	CP04	CP04	CP04	CP04	DP01	WS05	WS05	WS05
					Depth ~	0.02-'0.20	0.20-0.76	0.02-0.70	0.70-2.50	0.18-0.48	0.20-3.50	0.15-1.00	0.02-0.20	0.13-0.38	0.70-0.75	0.93-1.28	3.60	7.50-7.95	0.16-0.33	1.50	4.50	6.00-6.50	0.00-0.10	1.5	6.00-6.45	6.00-10.45	0.02-3.40	4.50-7.95	13.50-16.00	12.00-15.00	0.50-0.55	0.05-0.30	0.80-1.00	1.95-2.00
					Other ID ~																	Sand											
					Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Sampling Date ~	15/07/2024	15/07/2024	15/07/2024	15/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	16/07/2024	17/07/2024	17/07/2024	17/07/2024	17/07/2024	18/07/2024	18/07/2024	18/07/2024	18/07/2024	19/07/2024	19/07/2024	23/07/2024	23/07/2024	23/07/2024	23/07/2024
					Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**	**GAC (Commercial Land Use)**	**Source of GACs**																												
Metals																																	
Arsenic	DETSC 2301#	0.2	mg/kg	640	DEFRA C4SL 2014		12	37			11	8.9	12	8.9	14				8.3		13		3.9		7.6		26				35	5.4		
Cadmium	DETSC 2301#	0.1	mg/kg	410	DEFRA C4SL 2014		0.5	0.5			< 0.1	0.1	0.7	0.6	3.6				0.7		0.1		< 0.1		< 0.1		0.3				0.2	0.1		
Chromium	DETSC 2301#	0.15	mg/kg	8600	LQM/CIEH S4UL 2015		31	360			20	18	29	220	130				460		35		2600		44		28				15	26		
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	49	DEFRA C4SL 2014		< 1.0	< 1.0			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				< 1.0		< 1.0		< 1.0		< 1.0		< 1.0				< 1.0	< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	68,000	LQM/CIEH S4UL 2015		38	110			37	47	34	77	86				62		33		380		37		50				41	32		
Lead	DETSC 2301#	0.3	mg/kg	2300	DEFRA C4SL 2014		59	160			21	18	57	340	310				110		23		2.8		15		27				21	23		
Mercury	DETSC 2325#	0.05	mg/kg	1100	LQM/CIEH S4UL 2015		0.05	< 0.05			< 0.05	< 0.05	0.06	0.06	0.12				0.62		< 0.05		< 0.05		< 0.05		0.22				0.18	< 0.05		
Nickel	DETSC 2301#	1	mg/kg	980	LQM/CIEH S4UL 2015		31	300			29	32	37	110	73				120		40		1400	21	45		31				35	43		
Selenium	DETSC 2301#	0.5	mg/kg	12,000	LQM/CIEH S4UL 2015		< 0.5	1.6			< 0.5	0.6	0.7	0.8	0.7				4.2		< 0.5		< 0.5		< 0.5		1.0				0.8	< 0.5		
Zinc	DETSC 2301#	1	mg/kg	730,000	LQM/CIEH S4UL 2015		170	150			72	79	160	120	1300				540		120		180		74		97				87	150		
Asbestos																																	
Asbestos fibres in soil (Stage 1)				Presence	N/A	NAD		NAD		Amosite	NAD	NAD	NAD	Chrysotile	Amosite	NAD			NAD				NAD		NAD		NAD				NAD	NAD		
Comment										Amosite present as fibre bundles				Chrysotile present as fibre bundles	Amosite present as fibre bundles																		
Asbestos quantification (Stage 2)			%							0.001				0.002	0.002																		
Inorganics																																	
Loss on Ignition at 440oC	DETSC 2003#	0.01	%								7.9						6.3				4.8				5.2				4.6	14		4.2	
Conductivity	DETSC 2009	1	uS/cm								250						330				240				330				200	1700		460	
pH (6.3-11.3, average=255.8/32=pH8.0)	DETSC 2008#		pH				7.4	9.3	8.2		7.6	7.2	7.5	10.8	10.3		7.7	7.1	11.3	7.8	8.5	7.7	8.6		7.7	7.8	7.5	7.3	7.2		7.3	6.8		6.3
Calorific Value	DETSC 5008	1	MJ/kg	≥10 / 2-10 / <2[1]	ICRCL 61/84						< 1.0			< 1.0					< 1.0						< 1.0					< 1.0	4.1		< 1.0	
Total Organic Carbon	DETSC 2084#	0.5	%								3.5						1.3				1.1				1.6				1.1	11		0.8	
Organic matter (average=48.2/21=2.29)	DETSC 2002#	0.1	%				3.0	1.2			3.2	1.4	2.3	2.8	2.0				2.4		0.8		0.1		0.4		1.4				3.9	3.8		
Redox Potential	DETSC 2016*	-500	mV								250						270				210				210				180	220		180	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l				60	83	96		110	480	26	120	150		99	310	110	250	56	82	12		140	290	1000	91	130		1800	46		120
Sulphur as S, Total	DETSC 2320	0.01	%						0.03								0.02	0.46		0.10		0.03				0.06		0.03	0.05		0.53			0.03
Sulphate as SO4, Total	DETSC 2321#	0.01	%						0.02								0.06	0.07		0.20		< 0.01				0.04		0.04	0.05		0.64			0.06
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg				495	962			726	1160	478	2180	1140				2160		< 100		199		551		2930				6360	139		
Petroleum Hydrocarbons				2.5% SOM																													
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	5900	LQM/CIEH S4UL 2015		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	17,000	LQM/CIEH S4UL 2015		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	4800	LQM/CIEH S4UL 2015		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	23,000	LQM/CIEH S4UL 2015		< 1.5				< 1.5				< 1.5						< 1.5						< 1.5				< 1.5	< 1.5		
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	82,000	LQM/CIEH S4UL 2015		< 1.2				< 1.2				< 1.2						< 1.2						< 1.2				< 1.2	< 1.2		
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	1,700,000	LQM/CIEH S4UL 2015		< 1.5				< 1.5				< 1.5						< 1.5						< 1.5				< 1.5	< 1.5		
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	1,700,000	LQM/CIEH S4UL 2015		< 3.4				< 3.4				< 3.4						< 3.4						< 3.4				< 3.4	< 3.4		
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	1,700,000	LQM/CIEH S4UL 2015		< 3.4				< 3.4				< 3.4						< 3.4						< 3.4				< 3.4	< 3.4		
Aliphatic C10-C44	DETSC 3072*	10	mg/kg				< 10				< 10				< 10						< 10						< 10				< 10	< 10		
Aromatic C5-C7 (benzene)	DETSC 3321*	0.01	mg/kg	46,000	LQM/CIEH S4UL 2015		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
Aromatic C7-C8 (toluene)	DETSC 3321*	0.01	mg/kg	110,000	LQM/CIEH S4UL 2015		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	8100	LQM/CIEH S4UL 2015		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	28,000	LQM/CIEH S4UL 2015		< 0.9				< 0.9				< 0.9						< 0.9						< 0.9				< 0.9	< 0.9		
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	37,000	LQM/CIEH S4UL 2015		< 0.5				< 0.5				0.8						< 0.5						< 0.5				< 0.5	< 0.5		
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	28,000	LQM/CIEH S4UL 2015		< 0.6				< 0.6				18						< 0.6						< 0.6				< 0.6	< 0.6		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	28,000	LQM/CIEH S4UL 2015		< 1.4				< 1.4				100						< 1.4						< 1.4				< 1.4	< 1.4		
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	28,000	LQM/CIEH S4UL 2015		< 1.4				< 1.4				21						< 1.4						< 1.4				< 1.4	< 1.4		
Aromatic C10-C44	DETSC 3072*	10	mg/kg				< 10				< 10				140						< 10						< 10				< 10	< 10		
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg				< 10				< 10				140						< 10						< 10				< 10	< 10		
EPH (C10-C40)	DETSC 3311#	10	mg/kg																				<10											
Benzene	DETSC 3321#	0.01	mg/kg	98	DEFRA C4SL 2014		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
Ethylbenzene	DETSC 3321#	0.01	mg/kg	13,000	LQM/CIEH S4UL 2015		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
Toluene	DETSC 3321#	0.01	mg/kg	110,000	LQM/CIEH S4UL 2015		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
Xylene (o+m+p Xylene)	DETSC 3321#	0.01	mg/kg	43,000	LQM/CIEH S4UL 2015		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
MTBE	DETSC 3321	0.01	mg/kg	13,000	CL:AIRE GAC 2010		< 0.01				< 0.01				< 0.01						< 0.01						< 0.01				< 0.01	< 0.01		
PAHs				2.5% SOM																													
Naphthalene	DETSC 3301	0.1	mg/kg	460	LQM/CIEH S4UL 2015		0.5	0.1			< 0.1	< 0.1	< 0.1	0.1	0.1				< 2.0		< 0.1		< 0.1		< 0.1		6.6				0.9	0.1		
Acenaphthylene	DETSC 3301	0.1	mg/kg	97,000	LQM/CIEH S4UL 2015		0.4	0.1			< 0.1	< 0.1	< 0.1	0.2	0.6				< 2.0		0.1		< 0.1		< 0.1		2.1				0.6	0.6		
Acenaphthene	DETSC 3301	0.1	mg/kg	97,000	LQM/CIEH S4UL 2015		0.3	< 0.1			< 0.1	< 0.1	< 0.1	< 0.1	< 0.1				< 2.0		< 0.1		< 0.1		< 0.1		0.1				0.5	0.1		
Fluorene	DETSC 3301	0.1	mg/kg	68,000	LQM/CIEH S4UL 2015		0.1	< 0.1			< 0.1	< 0.1	< 0.1	0.2	0.6				< 2.0		< 0.1		< 0.1		< 0.1		2.5				0.2	0.4		
Phenanthrene	DETSC 3301	0.1	mg/kg	22,000	LQM/CIEH S4UL 2015		0.4	0.4			< 0.1	< 0.1	< 0.1	0.6	6.4				< 2.0		< 0.1		< 0.1		< 0.1		9.7				1.5	0.1		
Anthracene	DETSC 3301	0.1	mg/kg	540,000	LQM/CIEH S4UL 2015		0.2	< 0.1			< 0.1	< 0.1	< 0.1	0.2	1.7				< 2.0		< 0.1		< 0.1		< 0.1		17				1.5	0.2		
Fluoranthene	DETSC 3301	0.1	mg/kg	23,000	LQM/CIEH S4UL 2015		0.5	0.4			< 0.1	< 0.1	< 0.1	1.1	7.9				< 2.0		< 0.1		< 0.1		< 0.1		4.6				2.4	< 0.1		
Pyrene	DETSC 3301	0.1	mg/kg	54,000	LQM/CIEH S4UL 2015		0.6	0.5			< 0.1	< 0.1	< 0.1	1.0	6.8				< 2.0		0.4		< 0.1		< 0.1		3.6				2.3	< 0.1		
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	170	LQM/CIEH S4UL 2015		0.4	0.2			< 0.1	< 0.1	< 0.1	0.6	3.0				< 2.0		< 0.1		< 0.1		< 0.1		1.7				1.4	0.4		
Chrysene	DETSC 3301	0.1	mg/kg	350	LQM/CIEH S4UL 2015		0.3	0.1			< 0.1	< 0.1	< 0.1	0.4	2.8				< 2.0		< 0.1		< 0.1		< 0.1		1.2				1.1	0.8		
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	44	LQM/CIEH S4UL 2015		0.5	0.1			< 0.1	< 0.1	< 0.1	0.3	1.5				< 2.0		< 0.1		< 0.1		< 0.1		0.8				0.8	< 0.1		
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	1200	LQM/CIEH S4UL 2015		0.4	< 0.1			< 0.1	< 0.1	< 0.1	0.3	1.2				< 2.0		< 0.1		< 0.1		< 0.1		0.6				0.6	< 0.1		
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	77	DEFRA C4SL 2014		0.9	0.2			< 0.1	< 0.1	< 0.1	0.6	2.6				< 2.0		< 0.1		< 0.1		< 0.1		1.1				1.5	< 0.1		
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	510	LQM/CIEH S4UL 2015		0.4	< 0.1			< 0.1	< 0.1	< 0.1	< 0.1	1.1				< 2.0		< 0.1		< 0.1		< 0.1		0.6				0.8	< 0.1		
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	3.6	LQM/CIEH S4UL 2015		0.2	< 0.1			< 0.1	< 0.1	< 0.1	< 0.1	0.2				< 2.0		< 0.1		< 0.1		< 0.1		0.1				0.2	< 0.1		
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	4000	LQM/CIEH S4UL 2015		0.5	< 0.1			< 0.1	< 0.1	< 0.1	< 0.1	0.9				< 2.0		< 0.1		< 0.1		< 0.1		0.8				0.8	< 0.1		
PAH 16 Total	DETSC 3301	1.6	mg/kg				6.5	2.1			< 1.6	< 1.6	< 1.6	5.6	37				< 1.6		< 1.6		< 1.6		< 1.6		53				17	2.6		

1. For Calorific Value:
<2: Unlikely to burn
2-10: Potentially combustible
≥10: Almost certainly combustible

DETS Report Nos. 24-15368, 24-16590 & 24-16801-1
Client: Jarvale Construction Ltd
Client Project Name: Jacquet UK Ltd, Wentworth Way,Tankersley, Barnsley, S75 3DH
Client Project Ref: 23236

						AREA 2								
					Lab No	2375432	2375433	2375434	2375435	2375436	2375437	2375438	2375439	2375440
					Sample ID ~	TP03	TP04	CP05	CP05	CP06	CP07	CP07	CP07	WS06
					Depth ~	2.60-2.90	0.10-0.40	0.50-1.00	3.00-3.50	3.00-3.50	0.02-0.10	3.00-5.00	0.50-5.00	5.00-5.60
					Other ID ~									
					Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Sampling Date ~	31/07/2024	31/07/2024	31/07/2024	31/07/2024	01/08/2024	01/08/2024	02/08/2024	02/08/2024	02/08/2024
					Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**	**GAC (Commercial Land Use)**	**Source of GACs**									
Metals														
Arsenic	DETSC 2301#	0.2	mg/kg	640	DEFRA C4SL 2014	3.3	6.5	3.7		7.8	5.8	7.5		5.5
Cadmium	DETSC 2301#	0.1	mg/kg	410	DEFRA C4SL 2014	< 0.1	< 0.1	0.1		< 0.1	0.1	0.1		< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	8600	LQM/CIEH S4UL 2015	19	21	10		20	21	18		15
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	49	DEFRA C4SL 2014	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0	< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg	68,000	LQM/CIEH S4UL 2015	33	37	16		31	32	31		37
Lead	DETSC 2301#	0.3	mg/kg	2300	DEFRA C4SL 2014	19	22	16		20	17	22		20
Mercury	DETSC 2325#	0.05	mg/kg	1100	LQM/CIEH S4UL 2015	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05		< 0.05
Nickel	DETSC 2301#	1	mg/kg	980	LQM/CIEH S4UL 2015	37	39	21		34	36	32		30
Selenium	DETSC 2301#	0.5	mg/kg	12,000	LQM/CIEH S4UL 2015	< 0.5	< 0.5	< 0.5		< 0.5	< 0.5	< 0.5		< 0.5
Zinc	DETSC 2301#	1	mg/kg	730,000	LQM/CIEH S4UL 2015	93	97	65		98	100	88		83
Asbestos														
Asbestos fibres in soil (Stage 1)				Presence	N/A	NAD	NAD	NAD						NAD
Comment														
Asbestos quantification (Stage 2)			%											
Inorganics														
Loss on Ignition at 440oC	DETSC 2003#	0.01	%						5.1			13		
Conductivity	DETSC 2009	1	uS/cm						220			400		
pH (6.3-11.3, average=255.8/32=pH8.0)	DETSC 2008#		pH			8.2	8.3	8.4	7.7	8.0	7.5	7.1	7.6	8.1
Calorific Value	DETSC 5008	1	MJ/kg	≥10 / 2-10 / <2[1]	ICRCL 61/84				< 1.0			3.0		
Total Organic Carbon	DETSC 2084#	0.5	%						1.9			8.6		
Organic matter (average=48.2/21=2.29)	DETSC 2002#	0.1	%			1.4	1.2	1.5		1.5	6.8	6.0		1.1
Redox Potential	DETSC 2016*	-500	mV						180			180		
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l			110	19	130	84	140	320	140	160	120
Sulphur as S, Total	DETSC 2320	0.01	%						0.05				0.10	
Sulphate as SO4, Total	DETSC 2321#	0.01	%						0.04				0.04	
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg			357	224	387		385	1000	380		318
Petroleum Hydrocarbons				2.5% SOM										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	5900	LQM/CIEH S4UL 2015	0.09		0.10		0.10				
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	17,000	LQM/CIEH S4UL 2015	< 0.01		< 0.01		< 0.01				
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	4800	LQM/CIEH S4UL 2015	< 0.01		< 0.01		< 0.01				
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	23,000	LQM/CIEH S4UL 2015	< 1.5		< 1.5		< 1.5				
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	82,000	LQM/CIEH S4UL 2015	< 1.2		< 1.2		< 1.2				
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	1,700,000	LQM/CIEH S4UL 2015	< 1.5		< 1.5		< 1.5				
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	1,700,000	LQM/CIEH S4UL 2015	< 3.4		< 3.4		< 3.4				
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	1,700,000	LQM/CIEH S4UL 2015	< 3.4		< 3.4		< 3.4				
Aliphatic C10-C44	DETSC 3072*	10	mg/kg			< 10		< 10		< 10				
Aromatic C5-C7 (benzene)	DETSC 3321*	0.01	mg/kg	46,000	LQM/CIEH S4UL 2015	< 0.01		< 0.01		< 0.01				
Aromatic C7-C8 (toluene)	DETSC 3321*	0.01	mg/kg	110,000	LQM/CIEH S4UL 2015	< 0.01		< 0.01		< 0.01				
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	8100	LQM/CIEH S4UL 2015	< 0.01		< 0.01		< 0.01				
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	28,000	LQM/CIEH S4UL 2015	< 0.9		< 0.9		< 0.9				
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	37,000	LQM/CIEH S4UL 2015	< 0.5		< 0.5		< 0.5				
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	28,000	LQM/CIEH S4UL 2015	< 0.6		< 0.6		< 0.6				
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	28,000	LQM/CIEH S4UL 2015	< 1.4		< 1.4		< 1.4				
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	28,000	LQM/CIEH S4UL 2015	< 1.4		< 1.4		< 1.4				
Aromatic C10-C44	DETSC 3072*	10	mg/kg			< 10		< 10		< 10				
Ali/Aro C10-C44	DETSC 3072*	10	mg/kg			< 10		< 10		< 10				
EPH (C10-C40)	DETSC 3311#	10	mg/kg											
Benzene	DETSC 3321#	0.01	mg/kg	98	DEFRA C4SL 2014	< 0.01		< 0.01		< 0.01				
Ethylbenzene	DETSC 3321#	0.01	mg/kg	13,000	LQM/CIEH S4UL 2015	< 0.01		< 0.01		< 0.01				
Toluene	DETSC 3321#	0.01	mg/kg	110,000	LQM/CIEH S4UL 2015	< 0.01		< 0.01		< 0.01				
Xylene (o+m+p Xylene)	DETSC 3321#	0.01	mg/kg	43,000	LQM/CIEH S4UL 2015	< 0.01		< 0.01		< 0.01				
MTBE	DETSC 3321	0.01	mg/kg	13,000	CL:AIRE GAC 2010	< 0.01		< 0.01		< 0.01				
PAHs				2.5% SOM										
Naphthalene	DETSC 3301	0.1	mg/kg	460	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	97,000	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	97,000	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	68,000	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	22,000	LQM/CIEH S4UL 2015	< 0.1	< 0.1	0.1		< 0.1	< 0.1	< 0.1		< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	540,000	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	23,000	LQM/CIEH S4UL 2015	< 0.1	< 0.1	0.1		< 0.1	< 0.1	< 0.1		< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	54,000	LQM/CIEH S4UL 2015	< 0.1	< 0.1	0.1		< 0.1	< 0.1	< 0.1		< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	170	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	350	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	44	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	1200	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	77	DEFRA C4SL 2014	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	510	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	3.6	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	4000	LQM/CIEH S4UL 2015	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1		< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg			< 1.6	< 1.6	< 1.6		< 1.6	< 1.6	< 1.6		< 1.6

1. For Calorific Value:
<2: Unlikely to burn
2-10: Potentially combustible
≥10: Almost certainly combustible

APPENDIX G

Controlled Waters Screening Assessment

DRAFT

DETS Job No. 24-18801
Client: Jarvale Construction Ltd
Client Project Name: Jacquet UK Ltd, Wentworth Way,Tankersley, Barnsley, S75 3DH
Client Project Ref: 23236

Controlled Waters Screening Assessment

Test	Method	LOD	Units	GAC	2376694	2388744	2388745	2388746
Lab No					2376694	2388744	2388745	2388746
Sample ID					CP03	WS03	CP04	CP06
Depth					0.00-0.10	4.80-5.90	5.48-10.05	7.91-13.23
Other ID								
Sample Type					LEACHATE	GROUNDWATER	GROUNDWATER	GROUNDWATER
Sampling Date					17/07/2024	03/09/2024	03/09/2024	03/09/2024
Sampling Time					n/s	1415	1403	1337
Preparation								
BS EN 12457 10:1	DETSC 1009*				Y			
Metals								
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	10[1]		0.24	1.7	0.58
Boron, Dissolved	DETSC 2306*	12	ug/l	1000[1]		96	79	57
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	5[1]		0.44	< 0.03	0.45
Chromium, Dissolved	DETSC 2306	0.25	ug/l	50[1]		0.27	0.38	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	2000[1]		2.3	0.4	1.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	10[1]		0.11	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	1[1]		< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	20[1]	<0.5	72	58	18
Selenium, Dissolved	DETSC 2306	0.25	ug/l	10[1]		< 0.25	< 0.25	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	3000[2]		240	180	120
Inorganics								
pH	DETSC 2008		pH	6.5-9.5[1]		5.6	6.2	6.5
Conductivity	DETSC 2009	1	uS/cm	2500[1]		1060	4300	2280
Biochemical Oxygen Demand, Total	DETSC 2031	1	mg/l	<5[8]		5.6	7.1	3.9
Dissolved Organic Carbon	DETSC 2085	2	mg/l			2.9	7.5	8.1
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.5[1]		7.4	3.9	0.68
Chloride	DETSC 2055	0.1	mg/l	250[1]		35	57	47
Sulphate as SO4	DETSC 2055	0.1	mg/l			320	2100	750
Sulphur as S, Total	DETSC 2320*	10	mg/l			140	970	680
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	15,000[6]		< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	15,000[6]		< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	300[6]		< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	300[6]		< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	300[6]		< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l			< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l			< 1.0	< 1.0	< 1.0
Aliphatic C35-C44	DETSC 3072*	1	ug/l			< 1.0	< 1.0	< 1.0
Aliphatic C10-C44	DETSC 3072*	1	ug/l			< 1.0	< 1.0	< 1.0
Aromatic C5-C7	DETSC 3322	0.1	ug/l	10[6]		< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	700[6]		< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	800[6]		< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	90[6]		< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	90[6]		< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	90[6]		< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	90[6]		< 1.0	< 1.0	< 1.0
Aromatic C35-C44	DETSC 3072*	1	ug/l			< 1.0	< 1.0	< 1.0
Aromatic C10-C44	DETSC 3072*	1	ug/l			< 1.0	< 1.0	< 1.0
Ali/Aro C10-C44	DETSC 3072*	1	ug/l			< 1.0	< 1.0	< 1.0
Benzene	DETSC 3322	1	ug/l	10[6]		< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	700[6]		< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	300[6]		< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	500[6]		< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	15[12]		< 1.0	< 1.0	< 1.0
PAHs								
Naphthalene	DETSC 3304	0.05	ug/l	2.4[5]		< 5.00	34	< 5.00
Acenaphthylene	DETSC 3304	0.01	ug/l	5.8[11]		< 1.00	5.1	< 1.00
Acenaphthene	DETSC 3304	0.01	ug/l			< 1.00	4.1	< 1.00
Fluorene	DETSC 3304	0.01	ug/l			< 1.00	8.2	< 1.00
Phenanthrene	DETSC 3304	0.01	ug/l			3.0	47	< 1.00
Anthracene	DETSC 3304	0.01	ug/l	0.4[4]		< 1.00	13	< 1.00
Fluoranthene	DETSC 3304	0.01	ug/l	1[4]		1.0	31	< 1.00
Pyrene	DETSC 3304	0.01	ug/l			1.3	25	< 1.00
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l			< 1.00	14	< 1.00
Chrysene	DETSC 3304	0.01	ug/l			< 1.00	11	< 1.00
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l			< 1.00	15	< 1.00
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.1[1]		< 1.00	5.0	< 1.00
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	(Combined)		< 1.00	7.9	< 1.00
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l			< 1.00	8.4	< 1.00
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.01[1]		< 1.00	12	< 1.00
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l			< 1.00	1.8	< 1.00
PAH Total	DETSC 3304	0.2	ug/l			< 20.00	240	< 20.00

Notes
1.Water Supply (Water Quality) Regulations 2000-2018 (UK drinking water standards)
2.Surface Waters (Abstraction for Drinking Water) (Classification) Regulations 1996
3.Environment Agency Environmental Quality Standards in Appendix A to H1 Annex D-basic surface water discharges v2.2 2011
4.MAC-EQS for inland surface waters
5.AA-EQS for surface water quality
6.WHO Guidelines, 2008 & 2017
7.Drinking Water Directive
8.Surface Water Directive
9. USEPA RSL for tapwater 2023
10.Water Framework Directive
11. WRc plc, R&D Technical Report p.45, 2002
12. Drinking Water inspectorate (London, UK)
13. WHO Guideline Values for Chemicals that are of Health Significance in Drinking Water, 2022

APPENDIX H

Gas and Groundwater Monitoring Results

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SILKSTONE ENVIRONMENTAL GEOTECHNICAL, PLANNING & SURVEYING CONSULTANTS A PHENNA GROUP COMPANY	**Project:** **Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH**	**Client:** **Jarvale Construction Ltd**	**Contract No:** **23236**

GAS AND GROUNDWATER MONITORING RECORD

		Gas Readings										
Hole ID	Date	Oxygen (%)	Carbon Dioxide (%)	Methane (%)	LEL (%)	Flow (l/hr)	Relative Pressure (mb)	Ambient Pressure (mb)	Pressure Trend	Water Level (mBGL)	Base of Hole (mBGL)	Remarks
WS02	09/08/2024	18.8	4.5	<0.1	<0.1	<0.1	0.02	996	Rising	Dry	3.54	Zero CO & H_2S
	23/08/2024	18.8	5.8	<0.1	<0.1	<0.1	-0.07	988	Rising	Dry	3.58	Zero CO & H_2S
	03/09/2024	18.9	3.7	<0.1	<0.1	0.5	-0.12	997	Rising	Dry	3.53	Zero CO & H_2S
	20/09/2024	18.5	3.9	<0.1	<0.1	0.2	-0.17	999	Falling	Dry	3.53	Zero CO & H_2S
WS03	09/08/2024	16.5	10.6	<0.1	<0.1	0.2	0.02	997	Rising	4.83	6.00	Zero CO & H_2S
	23/08/2024	17.8	10.0	<0.1	<0.1	0.2	-0.09	987	Rising	4.80	5.88	Zero CO & H_2S
	03/09/2024	17.2	8.4	<0.1	<0.1	-0.2	-0.09	997	Rising	4.80	5.90	Zero CO & H_2S
	20/09/2024	17.9	8.2	<0.1	<0.1	<0.1	-0.09	998	Falling	4.99	5.90	Zero CO & H_2S
CP01	09/08/2024	12.2	12.4	0.2	4.0	<0.1	0.12	996	Rising	6.73	7.41	1ppm CO & Zero H_2S
	23/08/2024	4.8	18.6	<0.1	<0.1	0.1	-0.07	986	Rising	7.09	7.63	Zero CO & H_2S
	03/09/2024	1.3	24.2	0.1	2.0	0.5	-0.19	996	Rising	7.27	7.57	Zero CO & H_2S
	20/09/2024	0.8	42.2	<0.1	<0.1	0.1	-0.26	999	Falling	7.25	7.57	Zero CO & H_2S
CP04	09/08/2024	7.9	20.6	0.2	4.0	<0.1	-0.05	998	Rising	5.60	10.12	Zero CO & H_2S
	23/08/2024	12.3	14.8	<0.1	<0.1	<0.1	-0.05	988	Rising	5.14	10.05	Zero CO & H_2S
	03/09/2024	12.1	13.8	<0.1	<0.1	0.6	-0.12	997	Rising	5.48	10.05	Zero CO & H_2S
	20/09/2024	14.8	9.0	<0.1	<0.1	<0.1	-0.14	999	Falling	7.80	10.05	Zero CO & H_2S

SILKSTONE ENVIRONMENTAL GEOTECHNICAL, PLANNING & SURVEYING CONSULTANTS A PHENNA GROUP COMPANY	**Project:** **Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH**	**Client:** **Jarvale Construction Ltd**	**Contract No:** **23236**

GAS AND GROUNDWATER MONITORING RECORD

		Gas Readings										
Hole ID	Date	Oxygen (%)	Carbon Dioxide (%)	Methane (%)	LEL (%)	Flow (l/hr)	Relative Pressure (mb)	Ambient Pressure (mb)	Pressure Trend	Water Level (mBGL)	Base of Hole (mBGL)	Remarks
CP05	09/08/2024	17.6	3.5	0.1	2	<0.1	0.02	997	Rising	Dry	5.20	Zero CO & H_2S
	23/08/2024	15.7	5.5	<0.1	<0.1	<0.1	-0.02	988	Rising	Dry	5.02	Zero CO & H_2S
	03/09/2024	15.3	4.8	<0.1	<0.1	<0.1	-0.05	996	Rising	Dry	5.05	Zero CO & H_2S
	20/09/2024	15.4	4.9	<0.1	<0.1	<0.1	-0.16	999	Falling	Dry	5.05	Zero CO & H_2S
CP06	09/08/2024	3.5	15.5	0.1	2	0.2	0.0	997	Rising	7.01	13.25	1ppm CO & Zero H_2S
	23/08/2024	5.4	15.5	<0.1	<0.1	0.2	-0.17	988	Rising	7.20	13.25	Zero CO & H_2S
	03/09/2024	7.2	14	0.1	2.0	0.4	-0.05	997	Rising	7.91	13.23	Zero CO & H_2S
	20/09/2024	9.3	11.4	<0.1	<0.1	0.1	-0.02	999	Falling	9.01	13.12	Zero CO & H_2S

SILKSTONE ENVIRONMENTAL LTD

Borehole Waters Monitoring Record			Initial GW 1
Site Name: Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH	Project Ref. 23236		Survey Reference:
Client: Jarvale Construction Ltd	Survey Personnel: N Pickard		Weather Conditions: Warm, sunny, dry

Monitoring Point	Description / Grid Ref.	Date (DD/MM/YY)	Time HH:MM	Surface Level M AOD	Cover Level M AOD	Depth to Water M bgl	Depth to Base M bgl	Water Head M	Sample Taken Y/N	Water Level M AOD	Comments
WS02		23/07/2024	15:35			Dry	3.61	0.00	N		
WS03		23/07/2024	15:44			5.12	5.92	0.80	N		
CP01		23/07/2024	15:27			6.26	7.56	1.30	N		Concrete seating to cover has expanded above tarmac floor.
CP04		23/07/2024	15:56			9.57	9.90	0.33	N		

Notes: No visual or olfactory signs of potential contamination noted.

SILKSTONE ENVIRONMENTAL
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SILKSTONE ENVIRONMENTAL LTD

Gas Monitoring Record | **Sheet 1 of 6**

Site Name: Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH	Project Ref. 23236	Equipment: Geotechnical Instruments GA 5000	Pressure Trend: Rising
Client: Jarvale Construction Ltd	Survey Personnel: E.Jackson/ P.Stewart	Weather Conditions: Windy/ sunny/ cloudy	

Monitoring Point	Description / Grid Ref.	Date (DD/MM/YY)	Time HH:MM	CH_4 (in %)	CO_2 (in %)	O_2 (in %)	N_2 (in %)	H2S (ppm)	CO (ppm)	Temp (^oC)	Atmos. Pressure (mb)	Flow (l/h)	Rel. Pressure (mb)	Comments
Background		09/08/2024	13:24	<0.1	<0.1	22.0	<0.1	0	0	16	996	-	-	2 mins duration
WS02		09/08/2024	13:52	<0.1	4.5	18.8	5.7	0	0	16	996	<0.1	0.02	2 mins duration.
WS03		09/08/2024	14:23	<0.1	10.6	16.5	10.4	0	0	16	997	0.2	0.02	2 mins duration.
CP01		09/08/2024	13:28	0.2	12.4	12.2	29.3	0	1	16	996	<0.1	0.12	2 mins duration.
CP04		09/08/2024	14:48	0.2	20.6	7.9	41.4	0	0	16	998	<0.1	-0.05	2 mins duration.
CP05		09/08/2024	14:40	0.1	3.5	17.6	12.3	0	0	16	997	<0.1	0.02	2 mins duration.
CP06		09/08/2024	14:02	0.1	15.5	3.5	67.6	0	1	16	997	0.2	0.0	2 mins duration.

Notes:

SILKSTONE ENVIRONMENTAL LTD

Borehole Waters Monitoring Record

Site Name: Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH	Project Ref. 23236	Survey Reference:
Client: Jarvale Construction Ltd	Survey Personnel: E.Jackson/ P.Stewart	Weather Conditions:Windy/ sunny/ cloudy

Monitoring Point	Description / Grid Ref.	Date (DD/MM/YY)	Time HH:MM	Surface Level M AOD	Cover Level M AOD	Depth to Water M bgl	Depth to Base M bgl	Water Head M	Sample Taken Y/N	Water Level M AOD	Comments
WS02		09/08/2024	13:56	156.28		Dry	3.54	0.00	N	Dry	
WS03		09/08/2024	14:26	155.10		4.83	6.00	1.17	N	150.27	Brown discolouration. Flecks of coal and mudstone blocking foot valve.
CP01		09/08/2024	13:34	154.89		6.73	7.41	0.68	N	148.16	2L purged, thick grey mud at base of hole.
CP04		09/08/2024	14:53	155.70		5.60	10.12	4.52	N	150.10	30L purged, brown discolouration.
CP05		09/08/2024	14:44	156.71		Dry	5.20	0.00	N	Dry	
CP06		09/08/2024	14:07	156.65		7.01	13.25	6.24	N	149.64	40L purged, brown discolouration.

Notes: No visual or olfactory signs of potential contamination noted.

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SILKSTONE ENVIRONMENTAL LTD

Gas Monitoring Record | **Sheet 2 of 6**

Site Name: Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH	Project Ref. 23236	Equipment: Geotechnical Instruments GA 5000	Pressure Trend: Rising
Client: Jarvale Construction Ltd	Survey Personnel: E.Jackson	Weather Conditions: Sunny/ windy	

Monitoring Point	Description / Grid Ref.	Date (DD/MM/YY)	Time HH:MM	CH_4 (in %)	CO_2 (in %)	O_2 (in %)	N_2 (in %)	H2S (ppm)	CO (ppm)	Temp (^oC)	Atmos. Pressure (mb)	Flow (l/h)	Rel. Pressure (mb)	Comments
Background		23/08/2024	13:26	<0.1	<0.1	20.9	0.1	0	0	19	986	-	-	2 mins duration
WS02		23/08/2024	13:40	<0.1	5.8	18.8	4.5	0	0	19	988	<0.1	-0.07	2 mins duration.
WS03		23/08/2024	14:06	<0.1	10.0	17.8	5.1	0	0	19	987	0.2	-0.09	2 mins duration.
CP01		23/08/2024	13:30	<0.1	18.6	4.8	58.7	0	0	19	986	0.1	-0.07	2 mins duration.
CP04		23/08/2024	14:31	<0.1	14.8	12.3	26.6	0	0	19	988	<0.1	-0.05	2 mins duration.
CP05		23/08/2024	14:20	<0.1	5.5	15.7	19.60	0	0	19	988	<0.1	-0.02	2 mins duration.
CP06		23/08/2024	13:50	<0.1	15.5	5.4	58.70	0	0	19	988	0.2	-0.17	2 mins duration.

Notes:

SILKSTONE ENVIRONMENTAL LTD

Borehole Waters Monitoring Record

Site Name: Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH	Project Ref. 23236	Survey Reference:
Client: Jarvale Construction Ltd	Survey Personnel: E.Jackson	Weather Conditions:Sunny/ windy

Monitoring Point	Description / Grid Ref.	Date (DD/MM/YY)	Time HH:MM	Surface Level M AOD	Cover Level M AOD	Depth to Water M bgl	Depth to Base M bgl	Water Head M	Sample Taken Y/N	Water Level M AOD	Comments
WS02		23/08/2024	13:44	156.28		Dry	3.58	0.00	N	Dry	
WS03		23/08/2024	14:10	155.10		4.80	5.88	1.08	N	150.30	1L purged, brown discolouration, small flecks of coal in the water.
CP01		23/08/2024	13:34	154.89		7.09	7.63	0.54	N	147.80	
CP04		23/08/2024	14:35	155.70		5.14	10.05	4.91	N	150.56	15L purged, greyish brown discolouration.
CP05		23/08/2024	14:24	156.71		Dry	5.02	0.00	N	Dry	
CP06		23/08/2024	13:53	156.65		7.20	13.25	6.05	N	149.45	20L purged, brown discolouration.

Notes: No visual or olfactory signs of potential contamination noted.

SILKSTONE ENVIRONMENTAL LTD

Gas Monitoring Record | **Sheet 3 of 6**

Site Name: Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH	Project Ref. 23236	Equipment: Geotechnical Instruments GA 5000	Pressure Trend: Rising
Client: Jarvale Construction Ltd	Survey Personnel:E.Jackson	Weather Conditions: Sunny/ clear/ warm	

Monitoring Point	Description / Grid Ref.	Date (DD/MM/YY)	Time HH:MM	CH_4 (in %)	CO_2 (in %)	O_2 (in %)	N_2 (in %)	H2S (ppm)	CO (ppm)	Temp (^oC)	Atmos. Pressure (mb)	Flow (l/h)	Rel. Pressure (mb)	Comments
Background		03/09/2024	13:18	<0.1	0.1	21.1	<0.1	0	0	17	996	-	-	2 mins duration.
WS02		03/09/2024	13:27	<0.1	3.7	18.9	1.1	0	0	17	997	0.5	-0.12	2 mins duration.
WS03		03/09/2024	14:12	<0.1	8.4	17.2	8.7	0	0	17	997	-0.2	-0.09	2 mins duration.
CP01		03/09/2024	13:21	0.1	24.2	1.3	0.4	0	0	17	996	0.5	-0.19	2 mins duration.
CP04		03/09/2024	14:00	<0.1	13.8	12.1	28.5	0	0	17	997	0.6	-0.12	2 mins duration.
CP05		03/09/2024	13:46	<0.1	4.8	15.3	22.10	0	0	17	996	<0.1	-0.05	2 mins duration.
CP06		03/09/2024	13:33	0.1	14	7.2	51.30	0	0	17	997	0.4	-0.05	2 mins duration.

Notes:

SILKSTONE ENVIRONMENTAL LTD

Borehole Waters Monitoring Record

Site Name: Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH	Project Ref. 23236	Survey Reference:
Client: Jarvale Construction Ltd	Survey Personnel: E.Jackson	Weather Conditions:Sunny/ clear/ warm

Monitoring Point	Description / Grid Ref.	Date (DD/MM/YY)	Time HH:MM	Surface Level M AOD	Cover Level M AOD	Depth to Water M bgl	Depth to Base M bgl	Water Head M	Sample Taken Y/N	Water Level M AOD	Comments
WS02		03/09/2024	13:30	156.28		Dry	3.53	0.00	N	Dry	
WS03		03/09/2024	14:15	155.10		4.80	5.90	1.10	Y	150.30	Purged directly into bottles. No visual or olfactory signs of potential contamination noted, brown discolouration.
CP01		03/09/2024	13:24	154.89		7.27	7.57	0.30	N	147.62	
CP04		03/09/2024	14:03	155.70		5.48	10.05	4.57	Y	150.22	Slight sulfur odour, brown discolouration, 30L purged before sampling.
CP05		03/09/2024	13:49	156.71		Dry	5.05	0.00	N	Dry	Mud on tip.
CP06		03/09/2024	13:37	156.65		7.91	13.23	5.32	Y	148.74	30L purged before sampling, no visual or olfactory signs of potential contamination noted, brown colouration.

Notes:

SILKSTONE ENVIRONMENTAL LTD

Gas Monitoring Record | **Sheet 4 of 6**

Site Name: Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH	Project Ref. 23236	Equipment: Geotechnical Instruments GA 5000	Pressure Trend: Falling
Client: Jarvale Construction Ltd	Survey Personnel:E.Jackson	Weather Conditions: Overcast/ humid/ warm	

Monitoring Point	Description / Grid Ref.	Date (DD/MM/YY)	Time HH:MM	CH_4 (in %)	CO_2 (in %)	O_2 (in %)	N_2 (in %)	H2S (ppm)	CO (ppm)	Temp (^oC)	Atmos. Pressure (mb)	Flow (l/h)	Rel. Pressure (mb)	Comments
Background		20/09/2024	10:55	<0.1	0.1	20.9	<0.1	0	0	17	999	-	-	2 mins duration
WS02		20/09/2024	11:08	<0.1	3.9	18.5	7.8	0	0	17	999	0.2	-0.17	2 mins duration.
WS03		20/09/2024	11:35	<0.1	8.2	17.9	6.2	0	0	17	998	<0.1	-0.09	2 mins duration.
CP01		20/09/2024	11:00	<0.1	42.2	0.8	53.9	0	0	17	999	0.1	-0.26	2 mins duration.
CP04		20/09/2024	11:25	<0.1	9.0	14.8	20.4	0	0	17	999	<0.1	-0.14	2 mins duration.
CP05		20/09/2024	11:42	<0.1	4.9	15.4	21.9	0	0	17	999	<0.1	-0.16	2 mins duration.
CP06		20/09/2024	11:16	<0.1	11.4	9.3	44.3	0	0	17	999	0.1	-0.02	2 mins duration.

Notes:

SILKSTONE ENVIRONMENTAL LTD

Borehole Waters Monitoring Record		Sheet 4 of 6
Site Name: Jacquet UK Ltd, Wentworth Way, Tankersley, S75 3DH	Project Ref. 23236	Survey Reference:
Client: Jarvale Construction Ltd	Survey Personnel: E.Jackson	Weather Conditions:Overcast/ humid/ warm

Monitoring Point	Description / Grid Ref.	Date (DD/MM/YY)	Time HH:MM	Surface Level M AOD	Cover Level M AOD	Depth to Water M bgl	Depth to Base M bgl	Water Head M	Sample Taken Y/N	Water Level M AOD	Comments
WS02		20/09/2024	11:10	156.28		Dry	3.53	0.00	N	Dry	
WS03		20/09/2024	11:39	155.10		4.99	5.90	0.91	N	150.11	
CP01		20/09/2024	11:02	154.89		7.25	7.57	0.32	N	147.64	Mud on tip.
CP04		20/09/2024	11:28	155.70		7.80	10.05	2.25	N	147.90	
CP05		20/09/2024	11:45	156.71		Dry	5.05	0.00	N	Dry	
CP06		20/09/2024	11:20	156.65		9.01	13.12	4.11	N	147.64	Mud on tip.

Notes: No visual or olfactory signs of potential contamination noted.

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