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Ground Investigation Report

Floodlit Artificial 3G Pitch Refurbishment

Manchester Communications Academy

October 2023



Floodlit Artificial 3G Pitch Refurbishment

Manchester Communications Academy

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Exploratory hole plan (Proposed Car Park Area)	Soiltechnics	Sept '23	Drawing 02

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Executive Summary

Development proposals and site description

The proposed development is for the refurbishment and extension of the existing 11v11 3G LED floodlit Football Turf Pitch (FTP) as well as a new access from Carisbrook Street.

This report has been updated to account for a proposed new car park to the south of Lathbury Road on a currently unoccupied triangular parcel of land.

Site history

Earliest maps indicate that the FTP location to the northeast formed part of cuttings/pits on open land, remaining unchanged through to the mid-20th Century, when the site is shown as allotment gardens and levelled. Moston Brook historically flowed through the proposed FTP site, but was later culverted along the south-eastern boundary of the site.

The proposed car park area to the southwest historically forms part of the Green Mount Dye Works, and was later developed into residential housing. More recently the proposed car park area has been observed as a disused area of soft landscaping.

Ground conditions

On the main Academy site, Topsoil was present over Made Ground comprising clayey gravel and gravelly clay with gravels of brick, concrete, glass and clinker, encountered to depths >5.45m.

In the proposed car park area, investigations extended to a maximum of 1.1m and encountered Made Ground throughout, with a number of concrete obstructions at shallow depth.

Coal mining and ground stability

The site is within a coal reporting area however, review of the Coal Authority Consultant's report does not indicate any coal mining related ground instability risks.

Drainage and infiltration potential

Within the existing pitch area, dissipation of water within the subbase material was good, exhibiting permeability of 1.48×10^{-3} m/s.

The underlying Made Ground soils are not considered amenable to the use of soakaway type systems, thus an alternative drainage solution will need to be adopted.

CBR assessment and pitch foundations

For the FGP area, based on in-situ testing, a CBR design value of 15% can be adopted for existing granular subbase materials, and 5% for the Made Ground subgrade of the wider Academy site in the northeast.

Within the area of the proposed car park to the southwest, a CBR design value of 6% is considered applicable.

Due to the variable composition/strength/density and thickness of Made Ground across the site, formation soils should be appropriately conditioned.

Floodlight foundations

Deeper piled foundations will be required for floodlights as Made Ground was proven up to at least 5.45m deep. Alternatively ground improvement techniques could be used to provide suitable foundation solutions for the floodlights, subject to specialist input.

Contamination and waste assessment

Laboratory testing indicates that the Topsoil present within the area of the proposed FTP extension is suitable for reuse onsite or within an off-site residential setting. The Topsoil would be suitable for disposal as non-hazardous waste within a non-hazardous landfill site. The Made Ground within the area of the proposed FTP extension has been classified as non-hazardous and suitable for disposal within an inert landfill site.

Preliminary testing indicates Made Ground within the area of the proposed car park area is considered hazardous as a result of TPH concentrations and without further assessment/testing is suitable for disposal as stable non-reactive hazardous waste.

Recommendations for further works

If a piled foundation solution is adopted for the proposed floodlighting, it is recommended this investigation is supplemented with further onsite deeper boreholes providing parameters to facilitate design and construction.

If ground improvement (such as dynamic compaction, rapid impact compaction or controlled modulus columns) is utilised, potentially allowing adoption of shallow foundations, or lime/cement stabilisation is utilised below the proposed pitch/car park, specialist input at an early stage is recommended.

In an attempt to reduce the hazardous waste classification of Made Ground in the proposed car park area, further testing could be carried out (including cleaned TPH testing) to enable more detailed and/or statistical or zoned analysis.

1 Introduction

1.1 Project Brief

- 1.1.1 The proposed development is for the refurbishment and extension of the existing 11v11 3G LED floodlit Football Turf Pitch (FTP) as well as new access from Carisbrook Street. In addition, a new car park is proposed to the southwest of Lathbury Road, see Figure 1-1.



Figure 1-1: Wider site boundary edged in red, FTP area in blue, and proposed parking area in magenta.

- 1.1.2 The scope of works for the investigation has been completed in accordance with the framework agreement for a ground investigation utilising a combination of windowless sampling methods to cover the pitch extension and new floodlighting, with a hand pit investigation to determine the nature of the existing FTP formation, underlying subgrade and ground conditions beneath the proposed car parking area. The principal objectives of the ground investigation are to establish ground conditions at the site to assess existing pitch formation, infiltration potential and provide design parameters for design of the artificial sports pitch extension, floodlight foundations and proposed car park. The report will also advise on abnormal ground conditions and provide recommendations for further investigation works where applicable.
- 1.1.3 The report has been updated as a Revision 01 to accommodate the newly proposed car park location (situated to the southwest of Lathbury Road). The original proposed car park location was located within the area of the existing MUGA and BMX pump track (immediately southwest of the existing pitch). It is understood that this area will instead be developed into a Year 7 teaching block, which does not form part of this investigation.
- 1.1.4 In addition to the above, a topographic and electrical survey were commissioned for the project, provided under separate cover.

1.2 Site Location and Description

- 1.2.1 The site is located approximately 200m to the northeast of Manchester Communications Academy at the following postal address:

Lathbury Road
Manchester
M9 5GF

- 1.2.2 The proposed development comprises the redevelopment and extension of the existing 95m x 52m FTP which currently occupies the majority of the wider site towards the northeast. The area where the existing FTP will be extended is currently occupied by well-kempt grass and a footpath (south-eastern side). Rough vegetation is also observed along the north-eastern and north-western parts of the existing pitch. Mature trees (up to approximately 12m in height) are also present in these areas.
- 1.2.3 To the southwest of the existing FTP, there is a single storey building, two small MUGAs and a BMX pump track. It is understood that the MUGAs and BMX pump track will be redeveloped into a Year 7 teaching block as part of the development.
- 1.2.4 The newly proposed car park area (magenta bounded area in Figure 1-1) is approximately triangular in plan and located within a disused area comprising unkempt grass and rough vegetation. Trees up to 6m in height are present within the site, whilst a densely vegetated area of woodland (with trees of similar height) aligns the southeastern proposed car park boundary. The northwestern and northeastern boundaries of the proposed car park are defined by approximately 2m high mesh security fencing.
- 1.2.5 The wider site (red bounded area in Figure 1-1) is bound to the northwest by Carisbrook Street, Lathbury Road to the southwest, a footpath and grassed sports field to the southeast and vegetation to the northeast. Residential properties align the northwest of Carisbrook Street and southwest of Lathbury Road.
- 1.2.6 The closest water feature to the site is Moston Brook which has been culverted adjacent to the southeast of the wider site. To the south of the proposed car parking area Moston Brook flows at surface in a southwest direction, some 15m from the site boundary, within the woodland, before being culverted to the southwest. It ultimately flows into the River Irk some 1.15km to the southwest of the site.
- 1.2.7 Surface levels across the proposed FTP development area fall by 1m from the north to south. Surface levels across the wider site also fall in a similar direction, falling by some 6m from the northeast adjacent to the FTP, to the MUGA area to the southwest. The proposed car park area falls towards the southwest by up to 4m across its full length.

2 Desk Study

2.1 Site History

- 2.1.1 An attempt to trace the history of the site has been carried out by reviewing readily available ordnance survey maps. Earliest records date back to the mid to late 19th century and show the wider site to comprise an open area with an earthwork feature towards Moston Brook (see Figure 2-1 below). By c.1888-1913, the site appears to have been reprofiled towards the north as indicated by newly formed slopes/terracing. In addition, the Monsall Dye Works (containing reservoir and filter beds) is recorded beyond the northeast/east of the site and Monsall Lane Farm recorded beyond the southeast of site. It is anticipated the Moston Brook was culverted near the site during this time. At this time, the southwest and central half of the proposed car park forms part of the Green Mount Dye Works (comprising a large industrial building).
- 2.1.2 By c.1892-1914 allotment gardens (containing small buildings) occupy the entire wider site footprint. Residential properties largely align the north-western and south-western site boundary. At this time the Green Mount Dye Works are no longer recorded, and the area of the proposed car park is instead occupied entirely by residential properties along Elderburn Street and Appleby Street.
- 2.1.3 By c.1949-72 the Monsall Dye Works is no longer recorded. In addition, the land to the southeast of the site had also been largely reprofiled (see Figure 2-2 below).
- 2.1.4 Whilst it is unclear from mapping when the allotment gardens were removed from site, aerial imagery shows the site as a field containing mature trees, vegetation and a single footpath from c.2000. Construction of the current site (FPT, MUGA, BMX pump track and changing facility) is clear within the aerial imagery from as early as 2009 (during the development of the Manchester Communications Academy). The site appears to have remained largely unchanged thereafter to present day except for the addition of the footpath to the southeast of the existing FTP. It is unclear as to exactly when the residential properties were demolished within the area of the proposed car park, but Aerial imagery shows this area to comprise grass surfacing from c.2000. The proposed car park area had fencing erected around the boundary during the construction of the Manchester Communications Academy in c.2009.



Figure 2-1: 1840s-1890s Historical map extract overlay showing approximate site boundary (red) and the proposed car park (blue)



Figure 2-2: 1949-1972 Historical map extract overlay showing approximate site boundary (red) and the proposed car park (blue).

2.2 Geology and Hydrogeology

- 2.2.1 Open-source British Geological Survey (BGS) mapping for the area shows superficial deposits consist of Devensian Till (predominantly clays) underneath the entire wider site footprint and proposed car park area (see Figure 2-3 below). The site is also recorded within a 'hidden valley' whereby superficial deposits are recorded between 10-30m in thickness across the proposed car park area, extending to 30-40m thickness across the north of the proposed FTP development.

- 2.2.2 The underlying bedrock is recorded as the Chester Formation (sandstone) across the site. The Pennine Middle Coal Measures Formation (mudstone, siltstone, sandstone and commonly coal) aligns the southern boundary of the site and the proposed car park area (see Figure 2-4 below).
- 2.2.3 Whilst several historic BGS borehole records are noted within the site boundary, there is no permission to view these publicly. The nearest publicly available borehole (immediately southwest of site) recorded a loose cinder fill to ~4.5m depth, with Devensian Till clay soils (with silt inclusion) recorded beyond the maximum borehole depth of ~9.1m bgl. A groundwater strike was recorded at a depth of 7.9m bgl. A borehole beyond the northeast of the site similarly observed cinder brick fill to ~1.8m depth overlying Devensian Till (sandy clay) beyond the maximum borehole base depth of 9.1m bgl. No groundwater was observed.
- 2.2.4 Other surrounding boreholes show that there is a varying degree of Made Ground locally. Based on this and site history, it is anticipated there will be a varying depth of Made Ground on site which is underlain by a clay.



Figure 2-3: Superficial deposits



Figure 2-4: Bedrock geology

2.2.5 Table 1 below summarises anticipated geological conditions on site:

Strata	Type	Approximate thickness	Typical soil type	Likely permeability
Topsoil	-	0.3m	Organic soil	-
Made Ground	-	1-4.5m	Variable	Variable
Devensian Till	Superficial	20-40m	Clay	Low
Chester Formation	Bedrock	Basal unit	Sandstone	Moderate
Pennine Middle Coal Measures Formation	Bedrock	Basal unit	Mudstone and Sandstone	Variable

Table 1: Summary of anticipated geology and hydrogeology

2.3 Mining and Ground Stability

2.3.1 Coal Authority mapping data shows the site lies within a Coal Mining Reporting Area, but outside of a Development High Risk Area as shown in Figure 2-5 below.



Figure 2-5: Coal Authority viewer extract

2.3.2 A Coal Authority Consultants report has been obtained for the site and is presented in Appendix H. The report confirms that no past recorded underground mining, opencast mines, mine entries, coal outcrops or probable shallow underground workings are associated with the site or near to the site (including proposed car park area).

2.3.3 As such, it is likely that the potential for land instability to occur at the site due to coal mining legacy is very low.

2.4 Hydrology and Flood Risk

2.4.1 The site is situated near to Moston Brook, which is culverted immediately adjacent to the southeast of the site but flows at surface to the southeast of the proposed car park area. Moston Brook is classified as a Statutory Main River by the Environment Agency.

2.4.2 According to Environment Agency flood maps, the site does not lie in a flood risk area, as shown in Figure 2-6 below. There is a small section of the wider site in the southeast which is at a medium risk of surface water flooding by river and the sea, however, the area of the proposed FTP development is considered to be at low risk.

2.4.3 The proposed car park area is also not recorded within a flood risk area, however, there is evidence from other sources of a possible flooding risk within the northeast.



Figure 2-6: Flood risk mapping

2.5 Landfilling

- 2.5.1 Open-source Environment Agency landfill mapping data indicates the main Academy site is within 250m of a recorded landfill, as shown in Figure 2-7 below. The proposed car park area is approximately 260m from the landfill.



Figure 2-7: Proximity to landfill site (outline of nearest off-site former landfill in red hatching)

- 2.5.2 Based on the above, the nature of the proposed development (open setting) and anticipated ground conditions on site, the risk from ground gases affecting the proposed FTP development and car park is considered low.

2.6 Enquiries with Statutory Undertakers

- 2.6.1 We have contacted a number of Statutory Undertakers (SU) and obtained a Linesearch report to obtain copies of available records to avoid damaging buried apparatus during fieldwork activities.
- 2.6.2 Copies of their records are appended; however, it should be noted that private runs are typically excluded from these records.
- 2.6.3 A review of the information shows that there is BT cabling present within the wider site. The cabling is likely to be outside the proposed pitch extension area.
- 2.6.4 Furthermore, electrical cabling aligns the footpath along the north-western and south-western site boundaries along Carisbrook Street and Lathbury Road. In addition, a low pressure gas main also feeds the existing building on site from Lathbury Road to the south.
- 2.6.5 Notably, a 2.7m diameter surface water private sewer is also recorded by United Utilities running immediately offsite and parallel to the wider site's south-eastern boundary. It is likely this sewer represents the culverted Moston Brook.
- 2.6.6 Trunk main sewers and low voltage cabling is present within the proposed car park area. It is anticipated that some of these are associated with buildings historically present on site.
- 2.6.7 Copies of the SU records are included in Appendix A.

3 Fieldwork

3.1 Fieldwork Summary

3.1.1 Initial fieldwork was undertaken on the 11th and 12th May 2023, and later supplemented with further investigation within the proposed car park area on 7th and 29th September 2023. The works completed are summarised below. Exploratory hole logs are presented in Appendix B, and an exploratory hole location plan is presented as Drawing 01.

Exploratory hole ID	Method	Achieved depth (m bgl)	Purpose
Area of proposed FTP			
HP01 to HP15	Hand dug pits	0.5 to 0.6	Prove ground conditions beneath existing AGP.
WS01 to WS07	Windowless sampling techniques	2.0 to 5.45	Prove ground conditions for pitch extension/floodlights/car park/road.
DCP01, DCP02A/B, DCP03A/B	Dynamic cone penetrometer	0.226 to 0.897	Determine CBR value of proposed car parking area.
DCP04A/B to DCP06A/B	Dynamic cone penetrometer	0.332 to 0.861	Determine CBR value of proposed pitch extension formation.
DCP07 to DCP09, DCP10A/B, DCP11 to DCP15	Dynamic cone penetrometer	0.345 to 0.907	Determine CBR value of existing pitch formation.
HP04 and HP12	Soil permeability tests	0.3 to 0.6	Determine permeability of subgrade below FTP.
HP14		0.05 to 0.28	Determine permeability of subbase below FTP.
WS06		2.2 to 3.04	Determine permeability subgrade soils below FTP extension.
Area of proposed car park			
HP16 to HP20	Hand Dug Pits	0.2 to 1.0	Determine ground conditions beneath the proposed Car Park area.
DCP16 to DCP26	Dynamic cone penetrometer	0.12 to 0.925	Determine CBR value of proposed car parking area.

Table 2: Summary of fieldwork undertaken outside the existing pitch

3.1.2 All soils encountered were described in accordance with BS 5930:2015+A1 (2020).

3.2 Site Restrictions

3.2.1 No site restrictions were recorded at the time of investigation, however, owing to equipment malfunction supplementary fieldwork had to be undertaken over two days (7th and 29th September 2023).

3.3 Sampling

- 3.3.1 During the fieldwork, sampling of materials has been undertaken in accordance with BS EN ISO 22475-1 “Geotechnical Investigation and testing – sampling by drilling and excavation and groundwater measurements”. Various sampling and sub-sampling methodologies have been adopted, depending on the medium, excavation / drilling method and analysis requirements, with the primary aim of obtaining the highest quality sample class practicable.

3.4 In-situ Testing

- 3.4.1 Field testing comprised the following tests:

Test type	Applicable standard / guidance
Pocket penetrometer	Manufacturer’s instructions
Standard Penetration Test (SPT)	BS EN ISO 22476-3
Dynamic cone penetrometer	Highways England Document CS229 Data for Pavement Assessment
Soakaway test	BRE 365
Permeability test	BS EN 22282-2

Table 3: Summary of field testing undertaken

- 3.4.2 The raw data from the in-situ testing is presented in Appendix C, and the results are summarised on individual exploratory hole logs where appropriate.

4 Ground Conditions

4.1 Existing Pitch Formation Overview

- 4.1.1 Hand excavated trial pits HP01-HP15 were advanced within the existing FTP and encountered an artificial carpet and shock pad (with a total thickness of 80mm) onto an 80mm thick layer of asphalt.
- 4.1.2 Subbase deposits were encountered below the carpet/shockpad/asphalt layer and comprised two layers of limestone gravel between 300mm to 350mm in total thickness.
- 4.1.3 A woven membrane was noted at the base of the subbase in all hand pits.
- 4.1.4 Beneath the membrane, Made Ground subgrade was encountered which consisted of brown clayey sandy gravel of brick, concrete, clinker, wood and ceramic. All hand pits terminated within such deposits.
- 4.1.5 Photographs illustrating the ground conditions within the existing pitch are presented below.

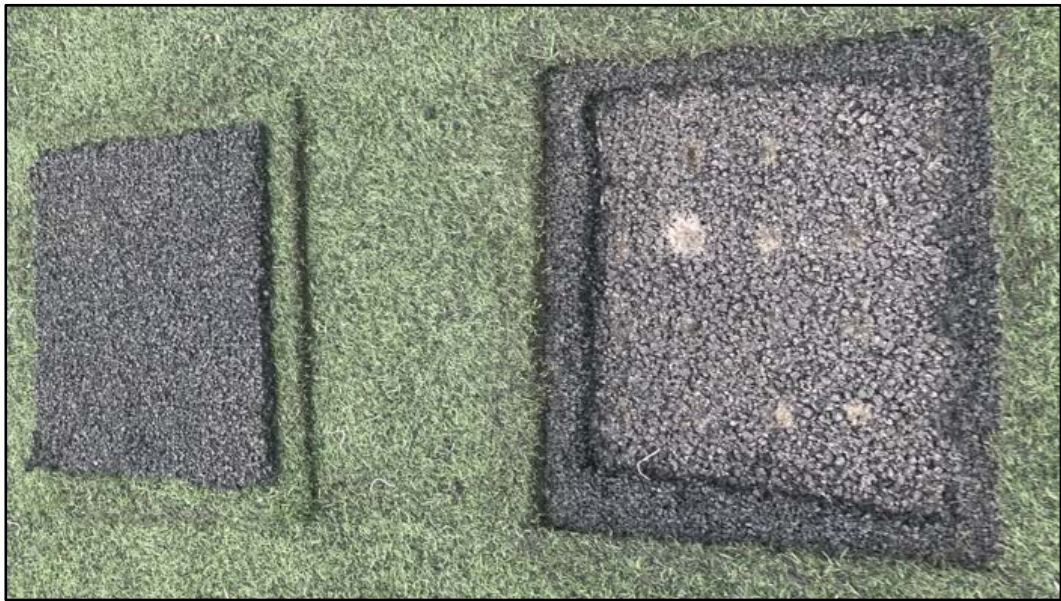


Figure 4-1: Artificial turf and shock pad onto Asphalt



Figure 4-2: Asphalt onto granular subbase in HP14



Figure 4-3: HP09 at completed depth showing Made Ground subgrade

4.2 Proposed Pitch Extension Overview

- 4.2.1 Windowless sampler boreholes WS04 to WS07 were advanced along the perimeter of the existing FTP to the southeast and southwest.
- 4.2.2 Reworked Topsoil was encountered in all locations between 100mm and 250mm in thickness and comprising of brown clayey gravelly sand with brick, ceramics, wood, concrete and sandstone.

- 4.2.3 Made Ground composition was variable across the site but mostly comprised brown sandy gravelly clay and clayey sandy gravel, with gravel comprising concrete, ceramic, brick and clinker. Gravels of slag were also recorded in WS06 below 2.30m depth. Made Ground was present to the base of all boreholes to the maximum exploratory depth of 5.45m.
- 4.2.4 Photographs representing the typical ground conditions are presented below.



Figure 4-4: Photographic record of soil profile at WS07



Figure 4-5: Photographic record of soil profile at WS04

4.3 Proposed Year 7 Block Overview

- 4.3.1 Windowless sampler boreholes WS01 - WS03 were advanced across the footprint of the previous proposed car park location to the south of the proposed FTP (as per STV5997-R01_RevA; June 2023). It is understood that this area will now be developed into a Year 7 Block instead. Whilst this report does not provide a geotechnical assessment for the proposed Year 7 Block a description of the ground conditions has been kept for reference.

- 4.3.2 Hard standing and sub-base was encountered in WS01 to 0.3m depth. Reworked Topsoil was encountered in WS02 and WS03 between 150mm and 250mm in thickness, comprising of brown clayey gravelly sand with gravels of brick, ceramic, concrete and sandstone.
- 4.3.3 Reworked Topsoil and hardstanding were underlain by Made Ground comprising brown gravelly clay and clayey gravel, with gravels comprising brick, stone, glass and concrete.
- 4.3.4 Made Ground was present to the base of all boreholes to the maximum exploratory depth of 2.45m. Suspected natural soils were encountered in the base of WS03 from 2m depth, however, it was difficult to confirm with absolute certainty given the history of the site and depth of Made Ground encountered elsewhere.
- 4.3.5 Photographs representing the typical ground conditions are presented below.



Figure 4-6: Photographic record of soil profile at WS02



Figure 4-7: Photographic record of soil profile at WS03

4.4 Proposed Parking Area Overview

- 4.4.1 Hand pits HP16 to HP20 were undertaken across the site of the newly proposed car park.

- 4.4.2 Deposits comprised entirely of Made Ground from surface to the maximum depth of excavations (1.1m thick). A separate/distinct shallow Topsoil layer was not present. The Made Ground comprised a dark brown to brown chaotic mixture of clays, sands and gravels. Gravels typically comprised brick, concrete, ceramics, plastic, glass and clinker. Numerous large cobbles/ boulders of brick and concrete were also present beneath the site.
- 4.4.3 Photographs representing the typical ground conditions are presented below.



Figure 4-8: Photographic record of the soil profile at HP16A, comprising coarse grained soils



Figure 4-9: Photographic record of the soil profile at HP17, comprising gravelly, fine grained soils

4.5 Groundwater

- 4.5.1 Suspected perched groundwater was observed as a slow seepage in WS07 at 3.2m depth. Groundwater was not encountered elsewhere.

4.6 Evidence of Possible Contamination

- 4.6.1 During the ground investigation works no significant visual or olfactory evidence of contamination was observed, beyond the presence of anthropogenic materials within Made Ground with the exception for a solvent odour noted at a depth of 0.9m within HP17 (area of proposed car park).

4.7 Obstructions and Instability

- 4.7.1 Refusal was met on an obstruction at 3.6m depth in WS04 within the Made Ground, Otherwise no obstructions or instability was noted during the investigation.
- 4.7.2 Within HP16 A,B,C, there was a suspected concrete base found at varying depths below ground level, the top depth of the observed concrete base was surveyed in HP16A and HP16B and is available within the topographic survey provided under separate cover.

5 Laboratory testing

5.1 Overview

- 5.1.1 Upon completion of the fieldworks, selected samples obtained from exploratory holes were sent to independent laboratories for geotechnical and chemical testing.
- 5.1.2 The testing schedules were developed by Soiltechnics taking cognisance of the scheme proposals and based on the initial findings of the fieldworks.

5.2 Geotechnical Testing

- 5.2.1 Laboratory test certificates are presented as Appendix D, and the total number of geotechnical tests undertaken is summarised below:

Geological Unit	Test	Quantity
Made Ground	Moisture Content	3
	Liquid Limit/Plastic Limit/Plasticity Index	4
	BRE SD1 Suite D (brownfield – pyrite present)	4
	Particle Size Distribution	2

Table 4: Summary of geotechnical laboratory testing

5.3 Chemical Testing

- 5.3.1 Chemical laboratory test certificates are presented in Appendix E, and the total number of chemical tests undertaken is summarised below:

Geological Unit	Testing Suite	Quantity
Topsoil	ST Basic classification suite (Metals, inorganics, PAH, banded TPH, asbestos)	1
Made Ground	ST Basic classification suite (Metals, inorganics, PAH, banded TPH, asbestos)	2
	Full WAC Suite (2-stage leachate)	2

Table 5: Summary of chemical laboratory testing

6 Chemical Assessment

6.1 Topsoil suitability

6.1.1 A composite sample of the reworked topsoil was taken from across all borehole positions in the northeast of the site. The composite sample was tested for the sole purpose of assessing the suitability of such soils for reuse off-site within a residential development. As such we have adopted generic screening values based upon a 'Residential with Homegrown Produce' scenario in the first instance.

6.1.2 Our assessment of laboratory test data has been carried out using Suitable for Use Levels (S4ULs). These screening values have been used as a preference; however, where published S4ULs are not available, we have adopted C4SLs (Category 4 Screening Levels), or soil screening values derived by Atkins.

6.1.3 Our analysis is presented in Appendix F, and the following table summarises the outcome of the Topsoil analysis for the wider site around the proposed FTP development.

Receptor group	CLEA model	Inorganic contaminants	Organic contaminants
Residential user (child)	Residential with homegrown produce	No exceedances	No exceedances

Table 6: Summary of chemical analysis

6.1.4 Asbestos was not detected within either composite sample.

6.1.5 Based on the above, the testing indicates that the Topsoil to the northeast (around the FTP development area) would be chemically suitable for reuse on-site or off-site, including within a residential site.

6.1.6 A distinct Topsoil type material was absent in the proposed car park area to the southwest.

6.2 Waste disposal

6.2.1 We have undertaken sampling to characterise the in-situ soils encountered on site for the potential disposal to landfill. Our assessment includes a hazardous waste classification, in accordance with WM3 (v1.1), and a Waste Acceptance Criteria assessment, in accordance with the current requirements published by the government.

6.2.2 One composite sample of the Made Ground was obtained from boreholes completed across the proposed FTP development area, with this sample referenced as WAC01. A composite sample of the Topsoil referenced TS01 was also obtained (also utilised for the assessment in Section 6.1 above).

6.2.3 A second composite sample of the Made Ground was obtained from hand pits completed across the proposed car park area referenced as WAC02.

6.2.4 The assessment sheets are enclosed within Appendix G, and a summary of the findings is presented below.

Stratum	Hazardous classification	Landfill classification
Topsoil	Non-hazardous	Topsoil is typically unsuitable for disposal to inert landfill sites due to high Total Organic Carbon content.
Made Ground (WAC01)	Non-Hazardous	Made Ground is classified as non-hazardous waste and suitable for disposal to inert landfill sites.
Made Ground (WAC02)	Hazardous	Made Ground is classified as a stable non-reactive hazardous waste (see for further information).

Table 7: Summary of waste characterisation testing

6.2.5 Preliminary testing of Made Ground in the proposed car park area has indicated it is classified as hazardous based on high TPH and PAH concentrations. Additional testing may enable zoning or the use of statistics to try and reduce the quantity of material classified as hazardous. In addition, it is recommended that further testing comprises cleaned TPH testing to remove interference from humics and other carbon compounds, which could enable reclassification. Further information/options can be provided on request.

6.3 Materials Management

6.3.1 In terms of the development, where reasonably practicable, landfill disposal should be minimised through the reuse of site-won materials on site, or off-site transfer of surplus soils to other development schemes or Soil Treatment Facilities. Early consideration of the site's overall material balance at the design stage is also critical in reducing the need for off-site disposal, limiting costs, and increasing the overall sustainability of the development.

6.3.2 Where Made Ground soils are to be reused onsite or materials transferred between sites, a Materials Management Plan (MMP) or Waste Exemption is recommended.

6.3.3 The process of an MMP allows soils that are suitable for reuse and have a certainty of use to not be considered a waste, and therefore not fall under the waste regulations. This scheme is self-regulated within the industry and is supported in principle by the Environment Agency.

7 Engineering Assessment

7.1 Ground Conditions Summary

- 7.1.1 Made Ground was encountered across the site in all boreholes and hand pits to >5.45m thickness (base not proven). Both granular and cohesive Made Ground was encountered. Natural soils were not encountered, although, were suspected in the base of WS03 from 2m depth, but could not be verified with any certainty.

7.2 Floodlight Foundations

- 7.2.1 Due to the variability and poor level of compaction noted in the Made Ground deposits, it is advised against the use of such soils to provide support to concentrated foundation loads (i.e. floodlight foundations).
- 7.2.2 In such instances, an alternative foundation solution will be required, such as piles or utilising ground improvement techniques.
- 7.2.3 Further investigation will be required in order to ascertain the depth of the Made Ground and the geotechnical properties of the natural strata beneath the Made Ground. However, based on works to date, it is likely that Made Ground is deep across the entire site and exceeds c.2-2.5m, at which depths a traditional pad type foundation solution becomes economical to construct.
- 7.2.4 Due to a combination of cost, programme and site constraints, some alternative foundation or ground improvement solutions to minimise settlement below floodlight foundations could be viable for the development. The following solutions may be technically feasible for the site and are discussed in brief below: -
- Controlled Modulus Columns (CMC)
 - Rapid Impact Compaction (RIC)
 - Soil Mixing
- 7.2.5 Controlled Modulus Columns (CMC) provide a fast and economical alternative to piling. The technique installs low strength concrete columns (280mm to 500mm) in diameter, utilising a displacement tool attached to a rig. The concrete columns would enhance the bearing capacity beneath proposed floodlights, which would in turn reduce total/differential settlement.
- 7.2.6 Rapid Impact Compaction (RIC) compacts granular/mixed soil surfaces through introduction of high frequency energy impacts. The RIC consists of a compaction foot which is placed on the ground and repeatedly struck by a 7-12 tonne hydraulic rammer, resulting in top-down compaction of the soil, thus enhancing bearing capacities, reducing settlement and allowing adoption of shallow pad foundations.
- 7.2.7 Soil mixing involves modifying the properties of weak soils to improve load carrying and permeability characteristics. The process uses a single or multi tool auger to break up the soil, which is then injected at low pressures with a specifically designed binder and mixed within the soils.

- 7.2.8 Should an alternative approach to foundation design be considered, it is recommended the advice of a specialist in the field of the above processes is sought ahead of design. It is also possible that further site investigation would be required to facilitate design of such specialist techniques.

7.3 Artificial Pitch & Car Park Foundation

- 7.3.1 We have determined CBR value for the existing and proposed artificial pitch using in-situ Dynamic Cone Penetrometer testing following the methodology defined by the Highways England Document CS229 Data for Pavement Assessment. The results are presented in Appendix C and the location of test positions are shown on Drawing 01 and 02.
- 7.3.2 We anticipate that the foundations extending the area of the FTP will be located at or about existing ground levels, with formation located on Made Ground. It is assumed that the subbase to the existing FTP will be reused where possible.
- 7.3.3 Based on the anticipated founding depth, and our understanding of the existing ground conditions, a minimum CBR design value of 15% can be adopted for the existing subbase material for preliminary design purposes, if left undisturbed.
- 7.3.4 A design CBR design value of 5% can be adopted for the existing Made Ground subgrade soils below the existing FTP and FTP extension area, while a CBR design value of 6% can be adopted for the proposed car park. It should be noted that values range significantly, and accordingly a conservative assessment has been provided.
- 7.3.5 The placement and extent of conditioning applied to any fill placed at the site exceeding depths of 0.6m will dictate the CBR value used in design. In addition, if cut depths exceed c.1m, CBR values for formation material should be reassessed prior to construction.
- 7.3.6 Due to the variable composition/strength/density (the latter particularly evident in CBR test data), presence of buried concrete and thickness of Made Ground at the wider site and proposed car parking area, we recommend that such soils present at and below formation levels are appropriately conditioned to achieve a more consistent level of compaction and minimise levels of total and differential settlement across the footprint of the FTP and proposed car parking area.
- 7.3.7 Once formation levels have been established it is recommended that the formation be trimmed and rolled following current requirements of the Highways Agency Specification for Highways Works (clause 616) (refer www.dft.gov.uk/ha/standards/mchw/vol1). Such a process will identify any soft/loose areas, which we recommend be either excavated out and backfilled with a suitable well compacted material similar to those exposed in the sides of the resulting excavation, or large cobbles of a good quality stone rolled into the formation to stabilise the 'soft/loose' area.

- 7.3.8 Consideration should also be given to excavating, sorting and compacting the top 1m depth of Made Ground to achieve consistent levels of compaction across the FTP and car park area in particular (where buried obstructions/concrete is present) and minimising the potential effects of differential settlement. In addition, consideration to the use of a geosynthetic reinforcement is recommended to minimise the impact of differential settlement.
- 7.3.9 Increasing and homogenising the density of the Made Ground through ground improvement techniques such as rolling dynamic compaction (RDC) or permeation grouting/lime & cement stabilisation could also be considered. These are notably expensive and would require specialist input at the feasibility stage.
- 7.3.10 The Made Ground deposits soils are considered frost susceptible and this may override the CBR criteria for pavement foundation design purposes.
- 7.3.11 We recommend, as soon as formation is trimmed and rolled, that sub-base is laid in order to avoid deterioration of the subgrade in wet or frosty conditions.

7.4 Drainage and Infiltration Potential

- 7.4.1 Infiltration testing in trial pits has been undertaken at the site following the principles of BRE 365: Soakaway Design (2016), with permeability testing in boreholes undertaken in accordance with BS EN ISO 22282 Geotechnical investigation and testing – Geohydraulic testing (2012). The results are presented in Appendix C and summarised below.
- 7.4.2 Natural soils were not encountered during the investigations, with significant thickness of Made Ground present site wide.
- 7.4.3 Indicative infiltration testing was undertaken in the Made Ground subgrade below the existing FTP in HP04 and HP12 between depths of 0.3m and 0.76m, however, insufficient infiltration was observed over 90 minutes of monitoring to accurately calculate a soil infiltration rate.
- 7.4.4 Permeability testing was also undertaken in Made Ground deposits in borehole WS06, between depths of 2.2m to 5.45m bgl. Some infiltration was observed, however, dissipation of water was slow and a permeability of 2.32×10^{-7} m/s has been derived.
- 7.4.5 Infiltration testing was also undertaken within the subbase beneath the existing FTP (HP14). Two tests were performed, and a worst-case permeability of 1.48×10^{-3} m/s has been derived.
- 7.4.6 Indicative infiltration testing was also undertaken in the Made Ground in HP17 and HP18 within the proposed car park area, between depths of 0.31m and 1.05m, however, insufficient infiltration was observed over 90 minutes of monitoring to accurately calculate a soil infiltration rate.

7.4.7 Discharge of stormwater collected by the proposed development into Made Ground deposits are not considered amenable. Water freely/directly discharged into the Made Ground could cause collapse of air voids contained in these deposits, which promotes compaction of the soils around the soakaway causing depression of the general area around the soakaway as well as potentially affecting pipe runs leading to the soakaway. In addition, soakaways would promote leaching of contaminants within the Made Ground soil.

7.4.8 No existing soakaway features were observed on site during our ground investigation works; however, a full drainage survey was not undertaken. Connection to the foul/surface water sewers to the west and east of the existing FTP may be possible. If this is considered an option for the development a comprehensive drainage assessment will be required to determine the potential impact on the capacity of the existing systems, to identify the invert levels of existing features, and to confirm drainage gradients achievable across the proposed FTP/car park area.

7.5 Aggressiveness of the ground to buried concrete

7.5.1 The aggressiveness of the ground with respect to buried concrete has been assessed in accordance with British Research Establishment Special Digest 1: Concrete in Aggressive Ground Third Edition (2005).

7.5.2 The site is interpreted to be a brownfield site where pyrite is likely to be present.

7.5.3 The classification of strata is presented below:

Stratum	Design sulphate classification	Aggressive chemical environment for concrete classification
Made Ground (proposed FTP extension)	DS-1	AC-1
Made Ground (proposed car park)	DS-1	AC-1s

Table 8: Summary of the aggressiveness of the ground to buried concrete

7.6 Recommendations for further works

7.6.1 If a piled foundation solution is adopted for the proposed floodlighting, it is recommended this investigation is supplemented with further onsite deeper boreholes providing parameters to facilitate design and construction.

7.6.2 If ground improvement (such as dynamic compaction, rapid impact compaction or controlled modulus columns) is utilised, potentially allowing adoption of shallow foundations, or lime/cement stabilisation is utilised below the proposed pitch/car park, specialist input at an early stage is recommended.

In an attempt to reduce the hazardous waste classification of Made Ground in the proposed car park area, further testing could be carried out (including cleaned TPH testing) to enable more detailed and/or statistical or zoned analysis.

Drawings



Key:
Exploratory Holes
[Hand Pit Symbol] Hand Pit
[DCP Symbol] DCPs (CBR)
[WLS Symbol] WLS
[Infiltration Testing Symbol] Infiltration Testing
Site Features
[Red Outline Symbol] Proposed FTP Area

Notes
1) Base image provided by Google.
2) All drawn features are approximate.

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A	May 2023	First issue
REV	DATE	COMMENT ON VARIATION

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PROJECT
Manchester Communications Academy

TITLE
Exploratory Hole Location Plan (Proposed Pitch Area)

PROJECT No. STV5997	DRAWING 01	REVISION A
------------------------	---------------	---------------



Key:

Exploratory Holes

- DCPs
- Hand Pit
- Infiltration Testing

Site Features

- Site Boundary
- Proposed Car Park Area

Notes

1) Base image provided by Google.

2) All drawn features are approximate.

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REV	DATE	COMMENT ON VARIATION

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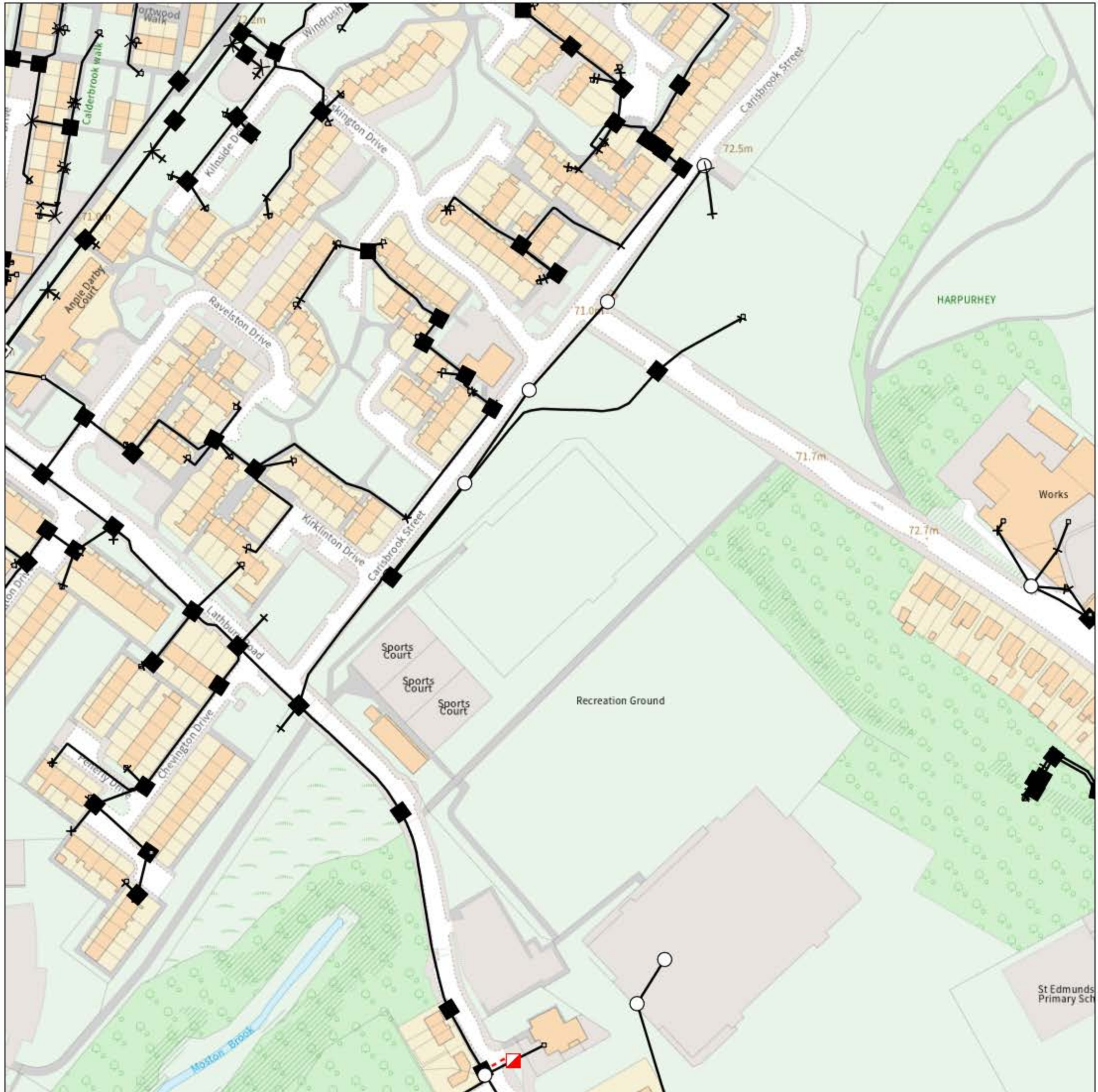
PROJECT
Manchester Communications Academy

TITLE
Exploratory Hole Location Plan (Proposed Car Park Area)

PROJECT No. STV5997	DRAWING 02	REVISION A
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Appendix A Statutory Undertakers Responses

Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.



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Accidents happen

If you do damage any Openreach equipment please let us know by calling 0800 023 2023 (opt 1 + opt 1) and we can get it fixed ASAP

KEY TO BT SYMBOLS

	Planned	Live	Change Of State	+	Hatchings	
PCP			Split Coupling		Built	
Pole			Duct Tee		Planned	
Box			Building		Inferred	
Manhole			Kiosk		Duct	
Cabinet			Other proposed plant is shown using dashed lines. BT Symbols not listed above may be disregarded. Existing BT Plant may not be recorded. Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.			
	Pending Add	In Place	Pending Remove	Not In Use		
Power Cable						
Power Duct				N/A		

BT Ref : MUR04271K

Map Reference : (centre) SD8602300919

Easting/Northing : (centre) 386023,400919

Issued : 22/03/2023 16:28:07

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Cedar Barn,
Walgrave,
NN6 9PY****FAO:****How to contact us:****United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP****Telephone: 0370 7510101****E-mail: propertysearches@uuplc.co.uk****Your Ref: STV5997
Our Ref: UUPS-ORD-516582
Date: 05/09/2023****Dear Sirs****Location: Manchester Academy Proposed Car Park**

I acknowledge with thanks your request dated 04/09/2023 for information on the location of our services.

Please find enclosed plans showing the approximate position of United Utilities' apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read United Utilities' access statement before you start work to check how it will affect our network. <http://www.unitedutilities.com/work-near-asset.aspx>.

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please [contact us](#).

Yours Faithfully,



Karen McCormack
Property Searches Manager

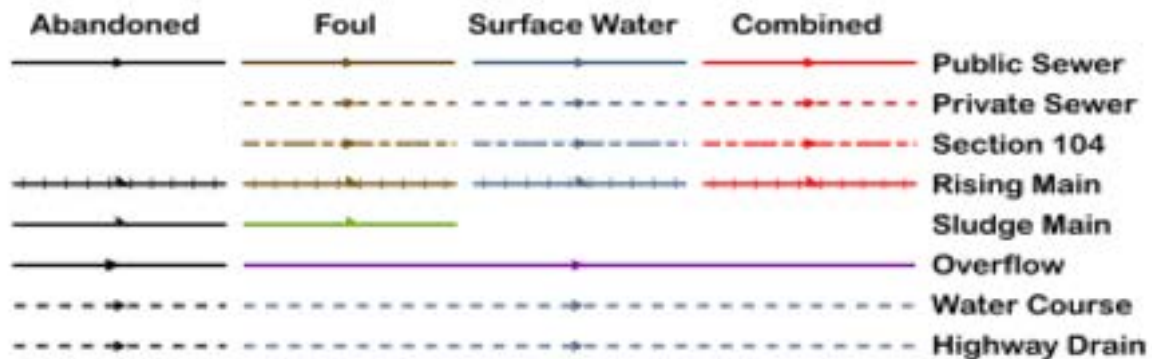
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Wastewater Symbolology



All point assets follow the standard colour convention: **red** – combined **brown** - foul
blue – surface water **purple** - overflow

- | | |
|------------------|--------------------------|
| Manhole | Side Entry Manhole |
| Head of System | Outfall |
| Extent of Survey | Screen Chamber |
| Rodding Eye | Inspection Chamber |
| Inlet | Bifurcation Chamber |
| Discharge Point | Lamp Hole |
| Vortex | T Junction / Saddle |
| Penstock | Catchpit |
| Washout Chamber | Valve Chamber |
| Valve | Vent Column |
| Air Valve | Vortex Chamber |
| Non Return Valve | Penstock Chamber |
| Soakaway | Network Storage Tank |
| Gully | Sewer Overflow |
| Cascade | Ww Treatment Works |
| Flow Meter | Ww Pumping Station |
| Hatch Box | Septic Tank |
| Oil Interceptor | Control Kiosk |
| Summit | |
| Drop Shaft | Change of Characteristic |
| Orifice Plate | |



Scale: 1:1250
Date: 05/09/2023

SEWER RECORDS



Water for the North West

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Printed by: Property Searches

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Clean Water Symbolology

Proposed	Abandoned	Live	
			Distribution Main
			Trunk Main
			Comms Pipe
			Private Pipe
			Concessionary Service
			Raw Water
			LDTM Raw Water
			LDTM Treated Water
			Air Valve
			AC Valve, open
			AC Valve, closed
			CC Valve, open
			CC Valve, closed
			Non Return Valve
			Pressure Management Valve
			OMS Valve
			Stop Tap
			Flow Meter
			Domestic Meter
			Commercial Meter
			Pump
			Hydrant
			Fire Hydrant
			Anode
			Chlorination Point
			De-chlorination Point
			Strainer Point
			Access Point
			Hatch Box
			IP Point
			Sampling Station
			Logger Box
			Bore Hole
			Inlet Point
			Bulk Supply Point
			End Cap
			Site Termination
			Change of Characteristic
			Condition Report
			<u>Property Types</u>
			Water Tower
			Valve House
			Booster Pumping Station
			Intake Pumping Station
			Water Treatment Works
			Supply Reservoir
			Service Reservoir
			Impounding Reservoir
			Pipe Bridge

Symbology for proposed assets is the same as above, but shown in **green**
 Symbology for abandoned assets is the same as above, but shown in **black**



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Date: 05/09/2023

WATER MAINS RECORDS



Water for the North West

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Cedar Barn,
Walgrave,
NN6 9PY**

FAO:

How to contact us:

**United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP**

Telephone: 0370 7510101

E-mail: propertysearches@uuplc.co.uk

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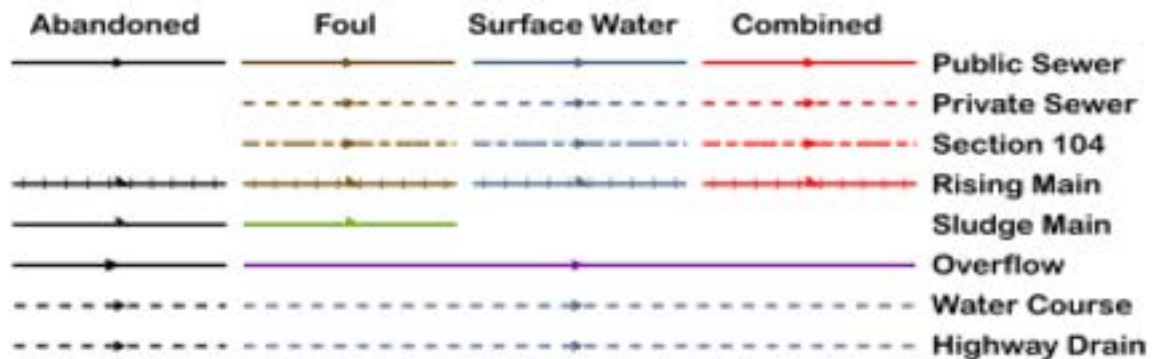
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| Gully | Sewer Overflow |
| Cascade | Ww Treatment Works |
| Flow Meter | Ww Pumping Station |
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| Oil Interceptor | Control Kiosk |
| Summit | |
| Drop Shaft | Change of Characteristic |
| Orifice Plate | |



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			AC Valve, closed
			CC Valve, open
			CC Valve, closed
			Non Return Valve
			Pressure Management Valve
			OMS Valve
			Stop Tap
			Flow Meter
			Domestic Meter
			Commercial Meter
			Pump
			Hydrant
			Fire Hydrant
			Anode
			Chlorination Point
			De-chlorination Point
			Strainer Point
			Access Point
			Hatch Box
			IP Point
			Sampling Station
			Logger Box
			Bore Hole
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Scale: 1:1250
Date: 05/09/2023

WATER MAINS RECORDS



Water for the North West

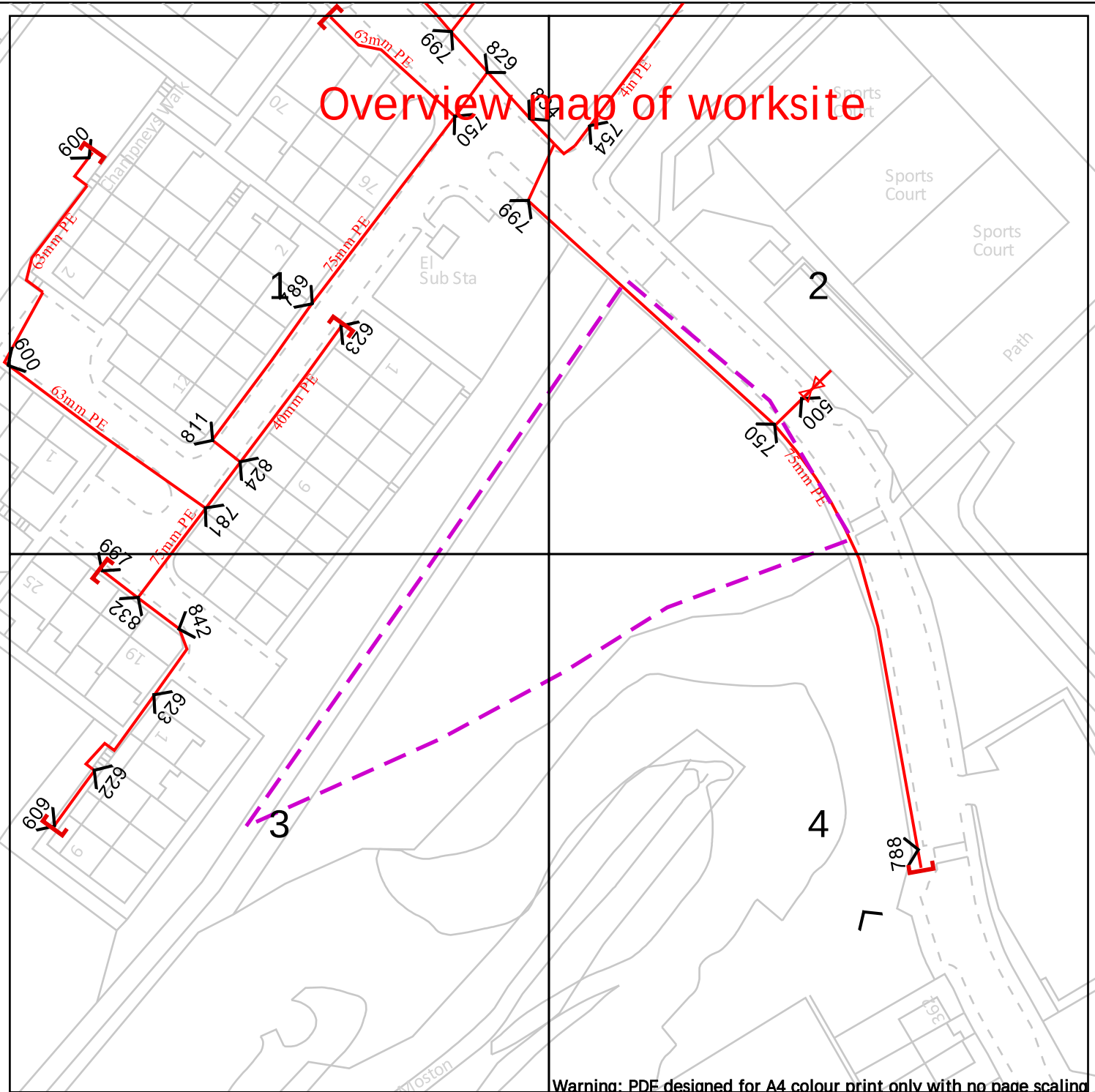
Address or Site Reference: Manchester Academy Proposed Car Park

Printed by: Property Searches

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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Overview map of worksite



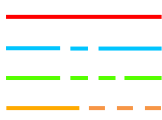
Warning: PDF designed for A4 colour print only with no page scaling



Dig Sites

Area:

Line:



LP Mains
MP Mains
IP Mains
LHP Mains



Valve



Depth of cover



Syphon



Diameter Change



Material Change



Out of Standard Service

Date Requested: 04/09/2023
Job Reference: 30716527
Site Location: 385904 400767
Requested by: Miss Lauren Wenham
Your Scheme/Reference: STV5997

View extent: 100m, 100m

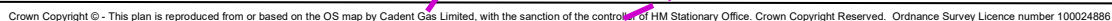
Scale: 1:1025 (When plotted at A4)

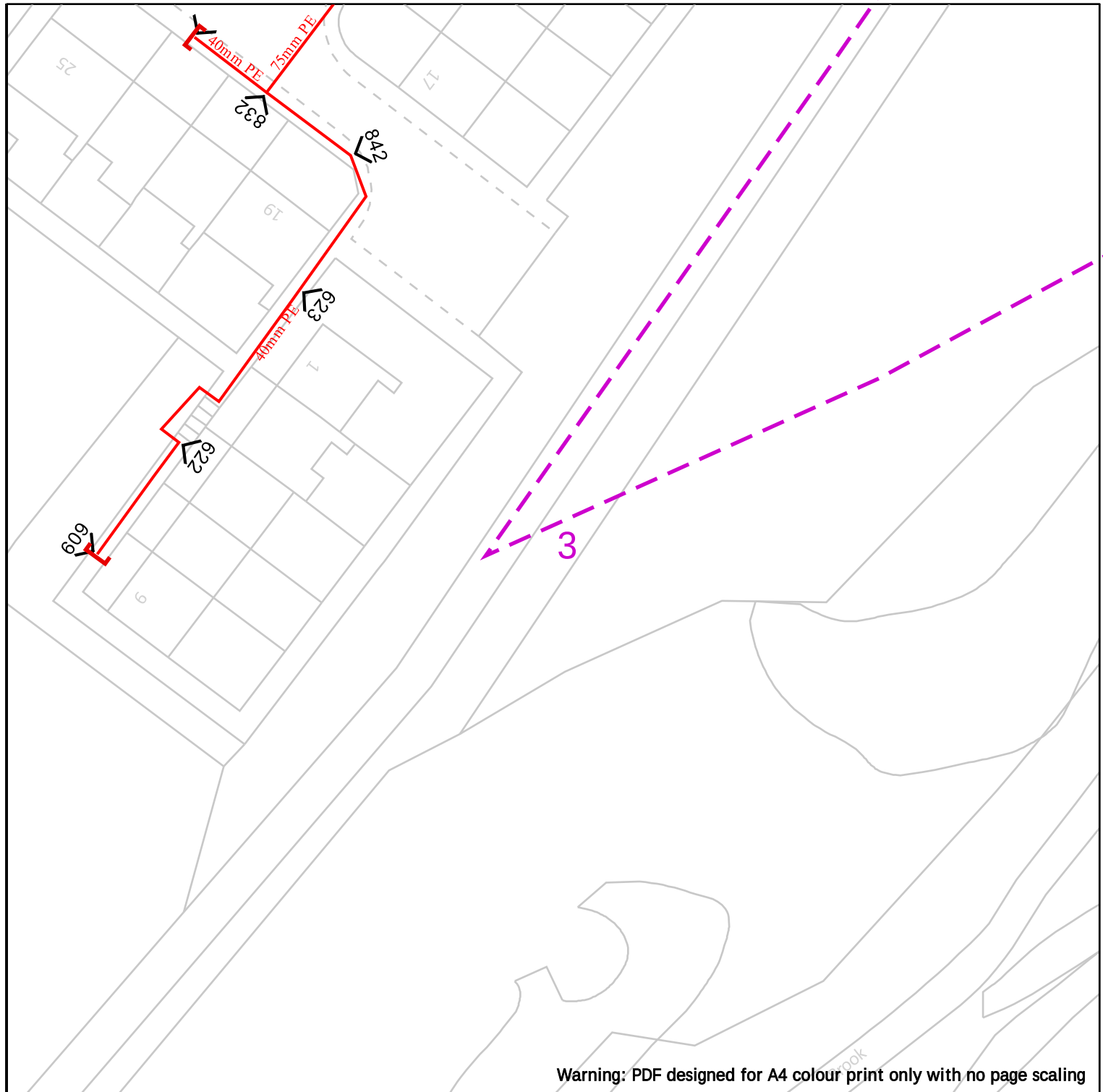
IMPORTANT NOTICES

This plan shows these pipes owned by Cadent Gas Limited in its role as a Licensed Gas Transporter (GT). Gas pipes owned by other GT's or otherwise privately owned may be present in this area. Information with regards to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Cadent Gas Limited or their agents, servants or contractors for any errors or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

In case of emergency call - 0800 111 999

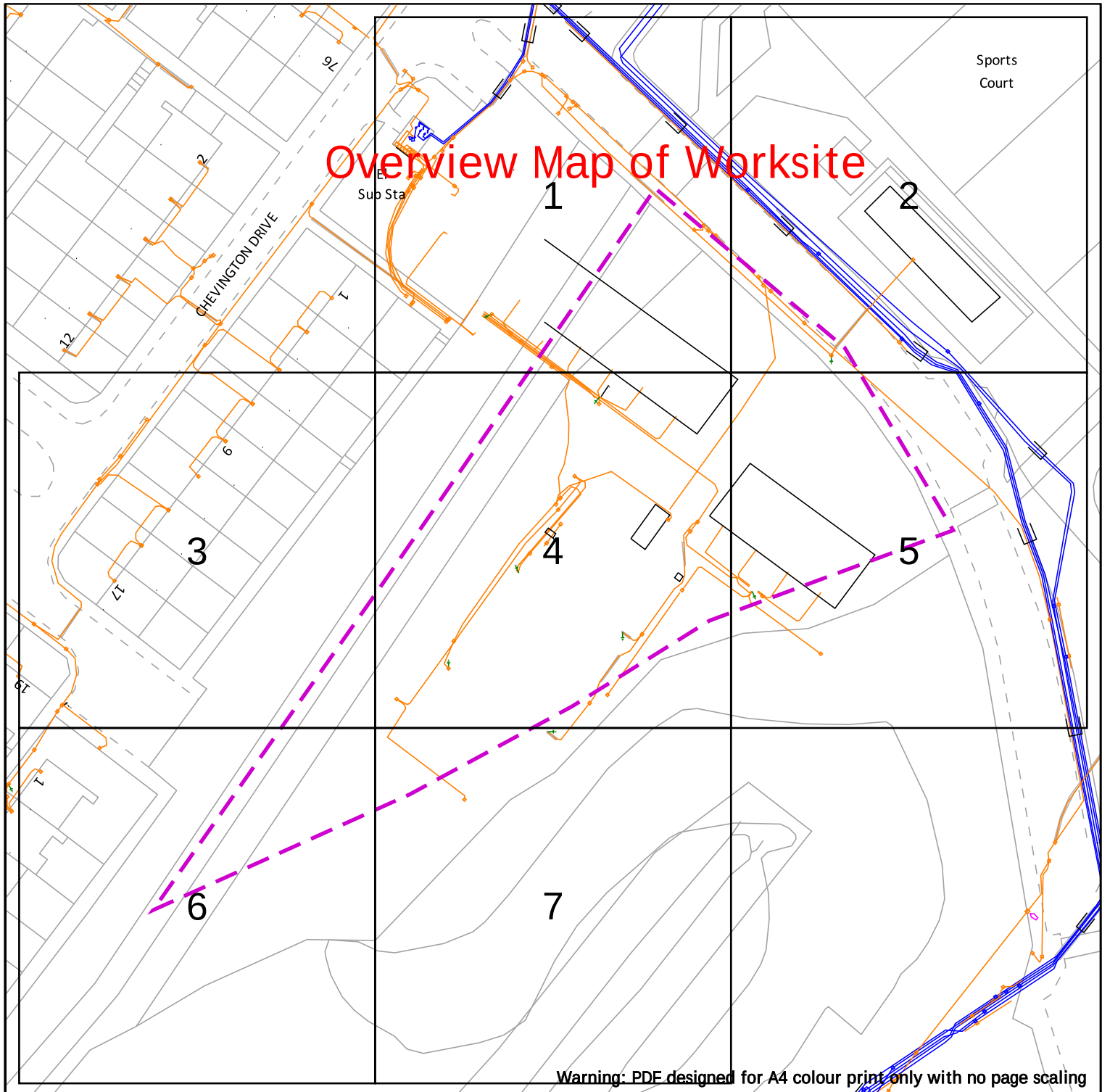
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	<table><tr><td>Dig Sites</td><td>Area: </td><td>Line: </td></tr><tr><td></td><td>LP Mains</td><td></td><td>Valve</td><td></td><td>Diameter Change</td></tr><tr><td></td><td>MP Mains</td><td></td><td>Depth of cover</td><td></td><td>Material Change</td></tr><tr><td></td><td>IP Mains</td><td></td><td>Syphon</td><td></td><td>Out of Standard Service</td></tr><tr><td></td><td>LHP Mains</td><td></td><td></td><td></td><td></td></tr></table>	Dig Sites	Area:	Line:		LP Mains		Valve		Diameter Change		MP Mains		Depth of cover		Material Change		IP Mains		Syphon		Out of Standard Service		LHP Mains			
Dig Sites	Area:	Line:																									
	LP Mains		Valve		Diameter Change																						
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Date Requested: 04/09/2023 Job Reference: 30716527 Site Location: 385904 400767 Requested by: Miss Lauren Wenham Your Scheme/Reference: STV5997 View extent: 100m, 100m	IMPORTANT NOTICES This plan shows these pipes owned by Cadent Gas Limited in its role as a Licensed Gas Transporter (GT). Gas pipes owned by other GT's or otherwise privately owned may be present in this area. Information with regards to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Cadent Gas Limited or their agents, servants or contractors for any errors or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.																										
Scale: 1:500 (When plotted at A4)	In case of emergency call - 0800 111 999 Crown Copyright © - This plan is reproduced from or based on the OS map by Cadent Gas Limited, with the sanction of the controller of HM Stationary Office. Crown Copyright Reserved. Ordnance Survey Licence number 100024886																										

Overview Map of Worksite



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Data Management
Electricity North West
Linley House
Dickinson Street
Manchester, M1 4LF
Phone: 0800 195 4141
Email: planrequest@enwl.co.uk

Operating Voltage

132kV
33kV
22kV-25kV
11kV
6kV-6.6kV
1kV-6kV
LV

Unknown Voltage

Colour Code

Black
Green
Yellow
Red
Blue
Violet
Orange
Brown

Line Colour



In an emergency call 105,
24 hours a day

Dig Sites

Line:

Area:

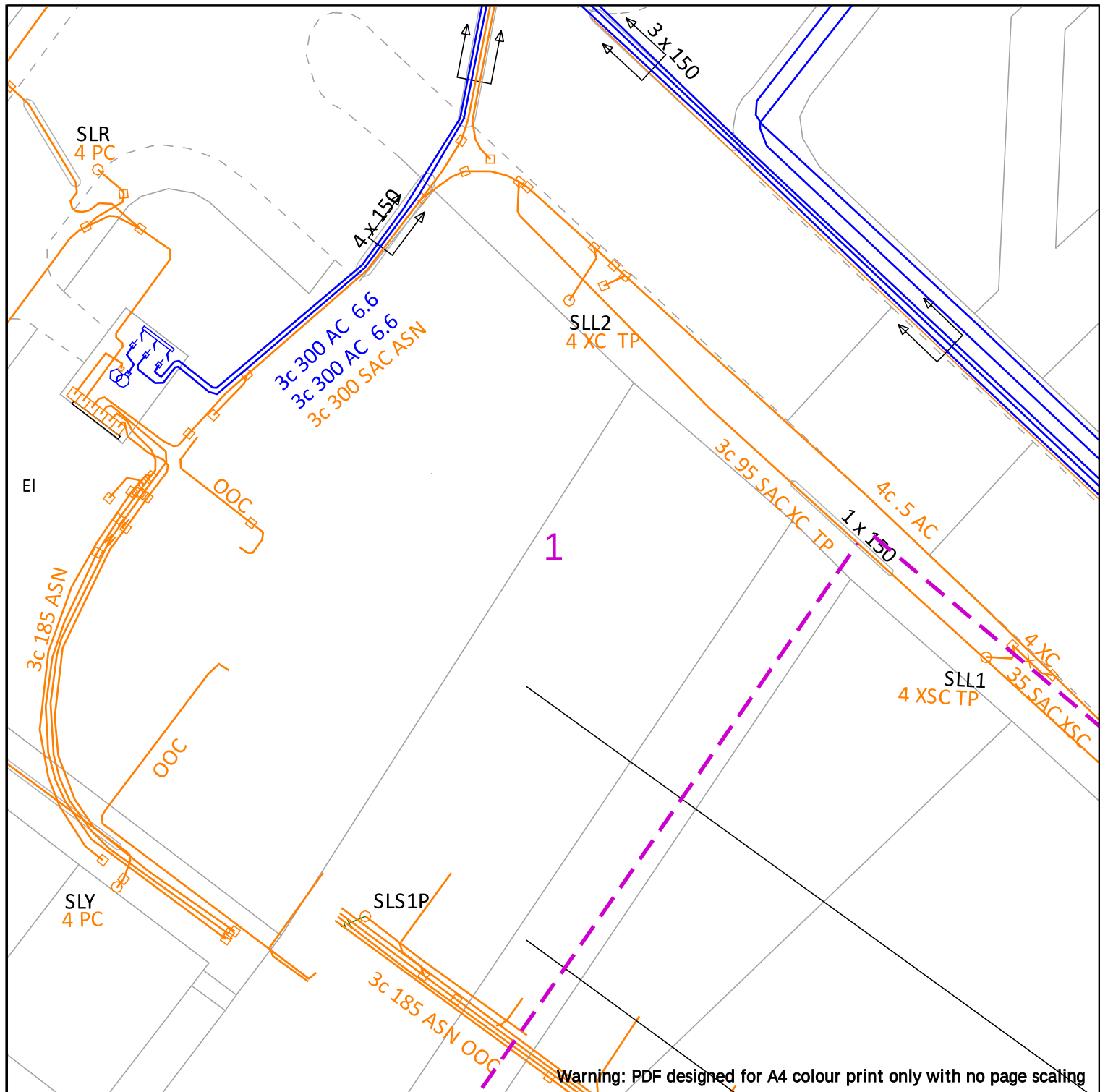
Date Requested: 04/09/2023
Job Reference: 30716527
Site Location: 385904 400767
Requested by: Miss Lauren Wenham
Your Scheme/Reference: STV5997

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Scale: 1:769 (When plotted at A4)

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Data Management
Electricity North West
Linley House
Dickinson Street
Manchester, M1 4LF
Phone: 0800 195 4141
Email: planrequest@enwl.co.uk

Date Requested: 04/09/2023
Job Reference: 30716527
Site Location: 385904 400767
Requested by: Miss Lauren Wenham
Your Scheme/Reference: STV5997

Scale: 1:250 (When plotted at A4)

Operating Voltage

132kV
33kV
22kV-25kV
11kV
6kV-6.6kV
1kV-6kV
LV

Unknown Voltage

Colour Code

Black
Green
Yellow
Red
Blue
Violet
Orange
Brown

Line Colour



In an emergency call 105,
24 hours a day

Dig Sites

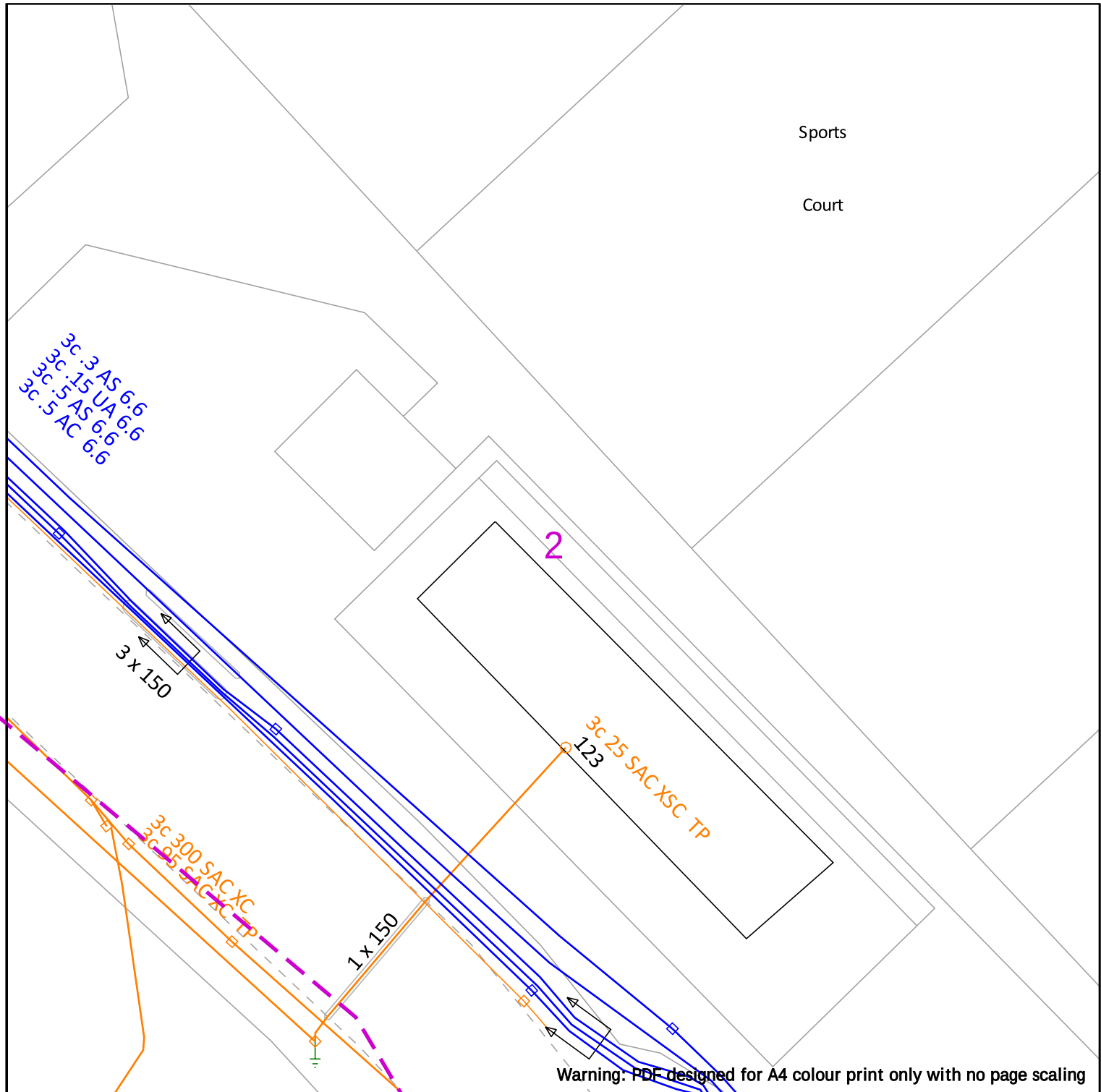
Line: - - - - -

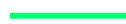
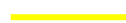
Area: [] [] [] []

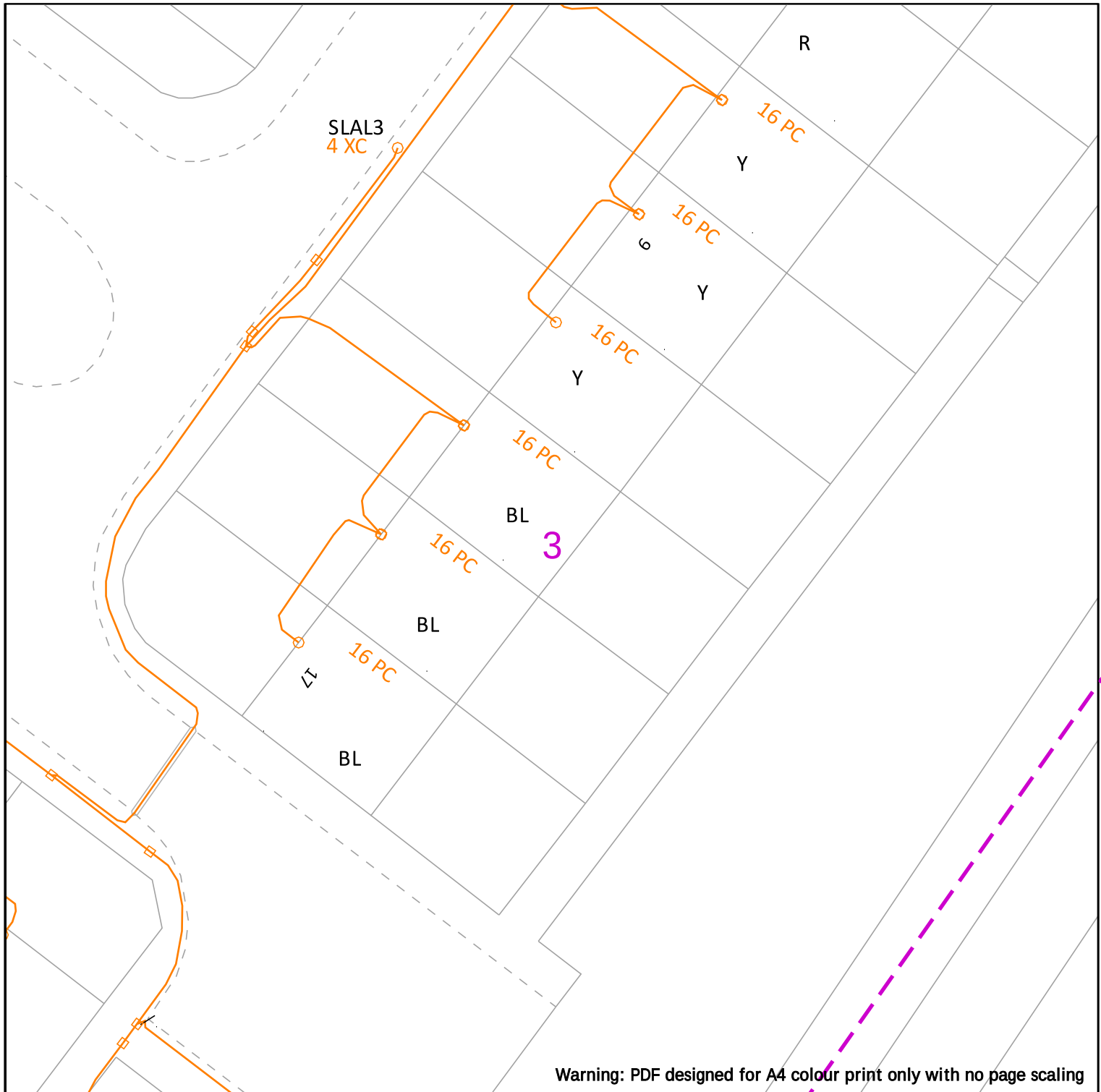
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 Data Management Electricity North West Linley House Dickinson Street Manchester, M1 4LF Phone: 0800 195 4141 Email: planrequest@enwl.co.uk	Operating Voltage	Colour Code	Line Colour	In an emergency call 105, 24 hours a day	Dig Sites
	132kV	Black			Line: 
Date Requested: 04/09/2023 Job Reference: 30716527 Site Location: 385904 400767 Requested by: Miss Lauren Wenham Your Scheme/Reference: STV5997	33kV	Green			Area: 
	22kV-25kV	Yellow			
	11kV	Red			
	6kV-6.6kV	Blue			
	1kV-6kV	Violet			
	LV	Orange			
	Unknown Voltage	Brown			
	IMPORTANT INFO Unless otherwise indicated the depth of Electricity North West Limited cables are in accordance with NJUG (450mm for Low Voltage & 600mm for 11kV cables) 33kV and 132kV cables are laid at depths as marked. The depth and positions of Electricity North West Limited equipment was accurate as shown when the equipment was installed. However third parties may have altered the level & other reference data. Therefore Electricity North West Limited accept no responsibility for the position of Electricity North West Limited equipment being different from shown. No person, body or company, shall be relieved from liability for damage caused to Electricity North West Limited equipment by reason of being located differently to the indications on this drawing or from any regulatory loss of income or incentive, or expense, which may be suffered by Electricity North West Limited and which is caused or contributed to by any loss of supply as a result of any damage caused to Electricity North West Limited's equipment. Service cables are not necessarily shown but must be assumed to exist to all premises, streetlights and signs. There may be other Electricity North West Limited apparatus in the vicinity which is not indicated on the cable records. Other apparatus may also be present which is owned by a third party other than Electricity North West Limited. Reference should be made to HSE Guidance, HS(G)47 "Avoiding Danger from Underground Services" and GS6 "Avoidance of Danger from Overhead Power Lines". Electricity North West Limited 304 Bridgewater Place, Birchwood Park, Warrington WA3 6XG. Registered in England and Wales. Registered No 02366949				
Scale: 1:250 (When plotted at A4)					
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Phone: 0800 195 4141
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Operating Voltage

132kV
33kV
22kV-25kV
11kV
6kV-6.6kV
1kV-6kV
LV
Unknown Voltage

Colour Code

Black
Green
Yellow
Red
Blue
Violet
Orange
Brown

Line Colour



In an emergency call 105,
24 hours a day

Dig Sites

Line: ---

Area: []

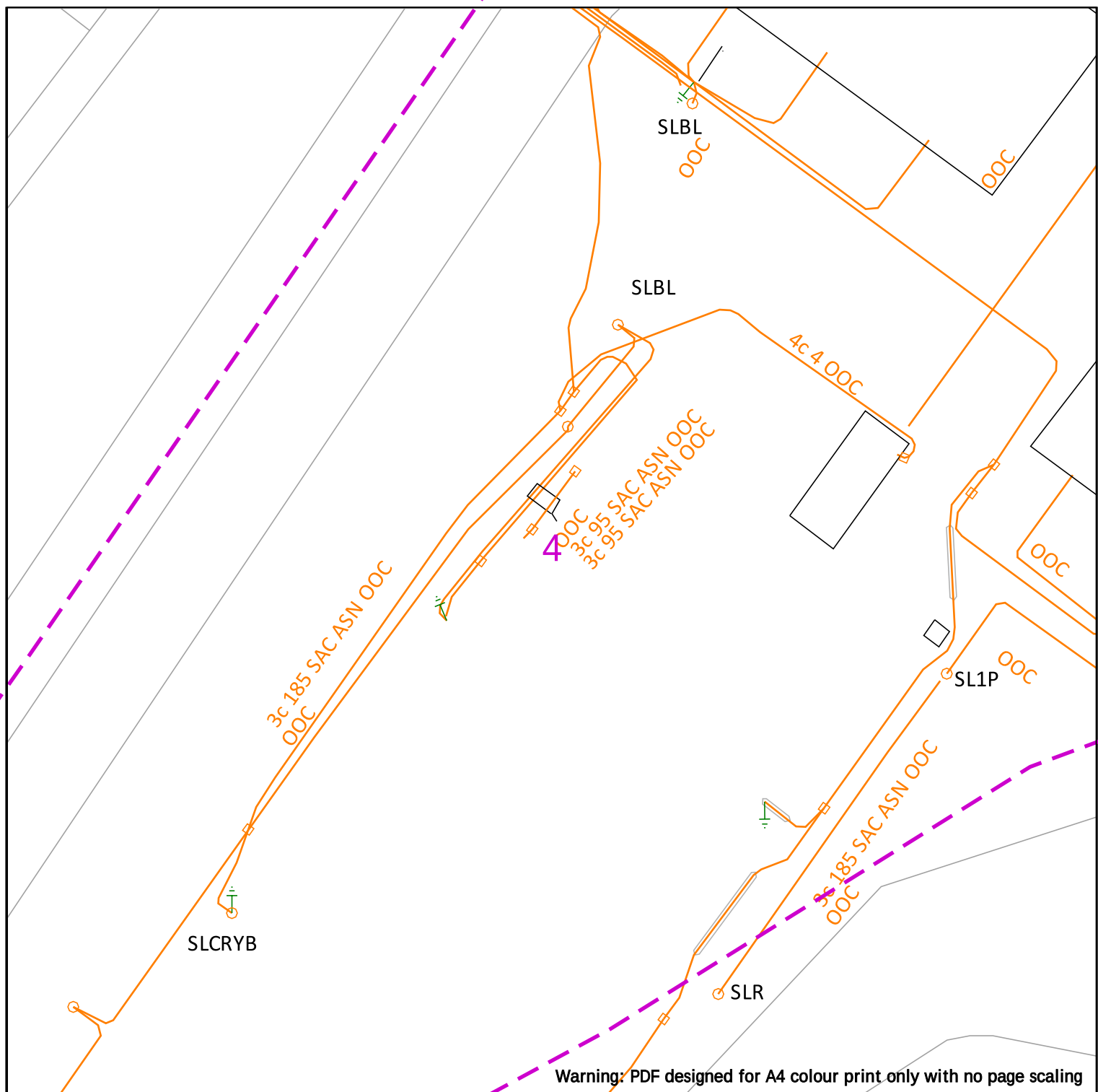
Date Requested: 04/09/2023
Job Reference: 30716527
Site Location: 385904 400767
Requested by: Miss Lauren Wenham
Your Scheme/Reference: STV5997

IMPORTANT INFO

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Scale: 1:250 (When plotted at A4)

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Data Management
Electricity North West
Linley House
Dickinson Street
Manchester, M1 4LF
Phone: 0800 295 4141
Email: planrequest@enwl.co.uk

Operating Voltage

132kV

33kV

22kV-25kV

11kV

6kV-6.6kV

1kV-6kV

LV

Unknown Voltage

Colour Code

Black

Green

Yellow

Red

Blue

Violet

Orange

Brown

Line Colour

Black

Green

Yellow

Red

Blue

Violet

Orange

Brown

In an emergency call 105,
24 hours a day

Dig Sites

Line: ---

Area: []

Date Requested: 04/09/2023

Job Reference: 30716527

Site Location: 385904 400767

Requested by: Miss Lauren Wenham

Your Scheme/Reference: STV5997

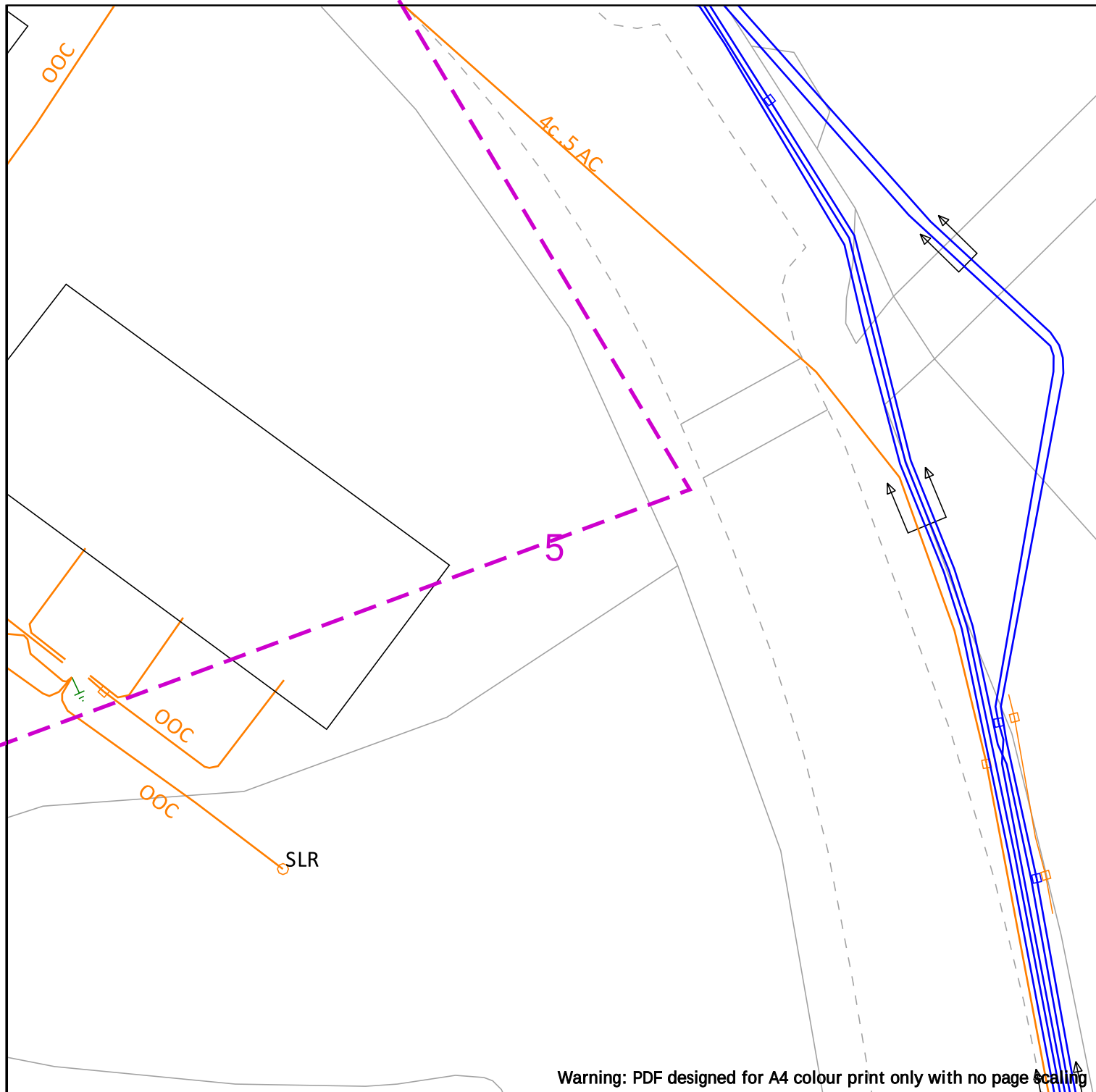
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Data Management
Electricity North West
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Dickinson Street
Manchester, M1 4LF
Phone: 0800 195 4141
Email: planrequest@enwl.co.uk

Operating Voltage

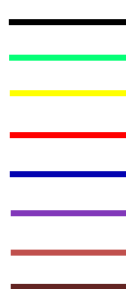
132kV
33kV
22kV-25kV
11kV
6kV-6.6kV
1kV-6kV
LV

Unknown Voltage

Colour Code

Black
Green
Yellow
Red
Blue
Violet
Orange
Brown

Line Colour



In an emergency call 105,
24 hours a day

Dig Sites

Line: ---

Area: []

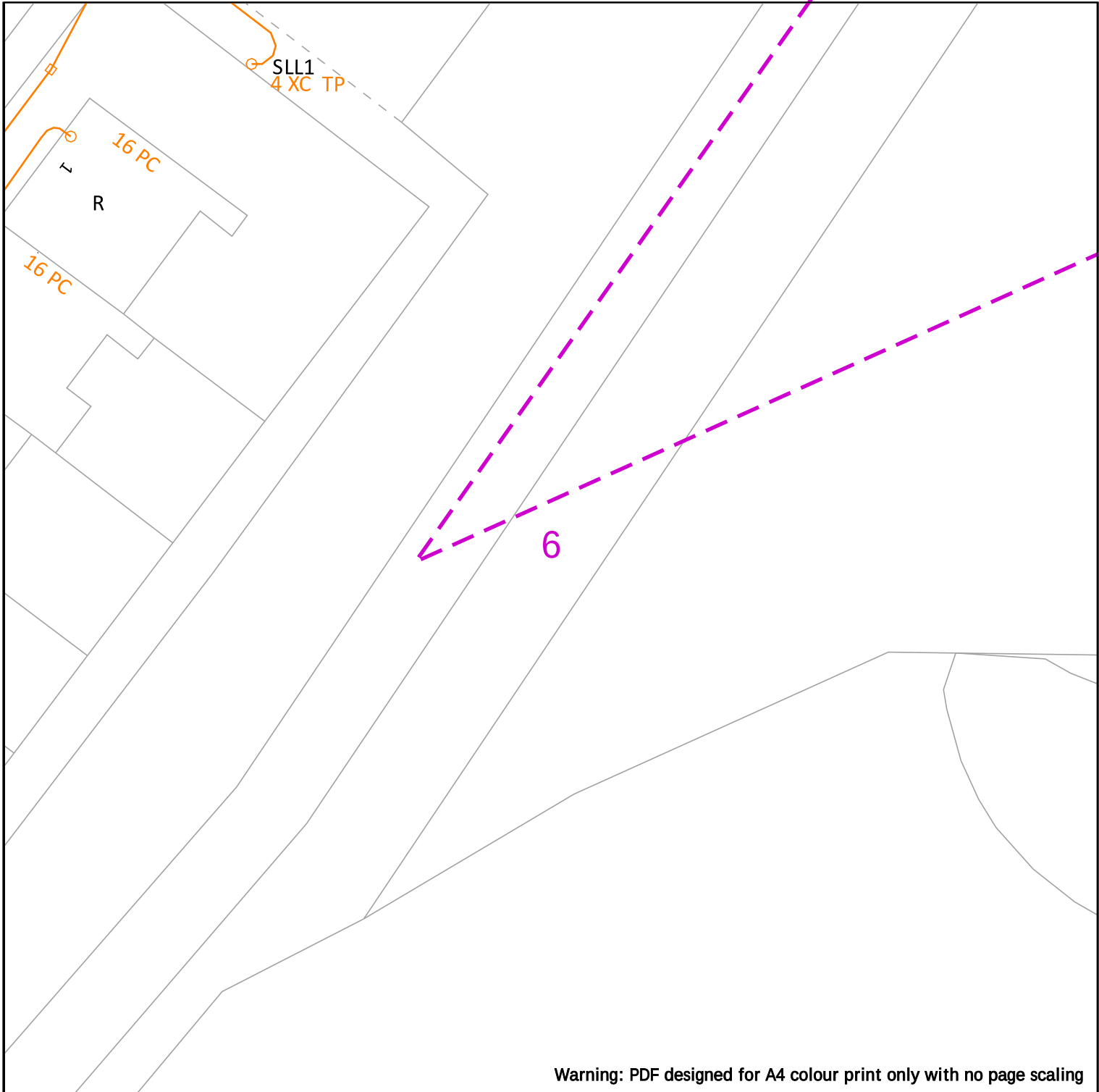
Date Requested: 04/09/2023
Job Reference: 30716527
Site Location: 385904 400767
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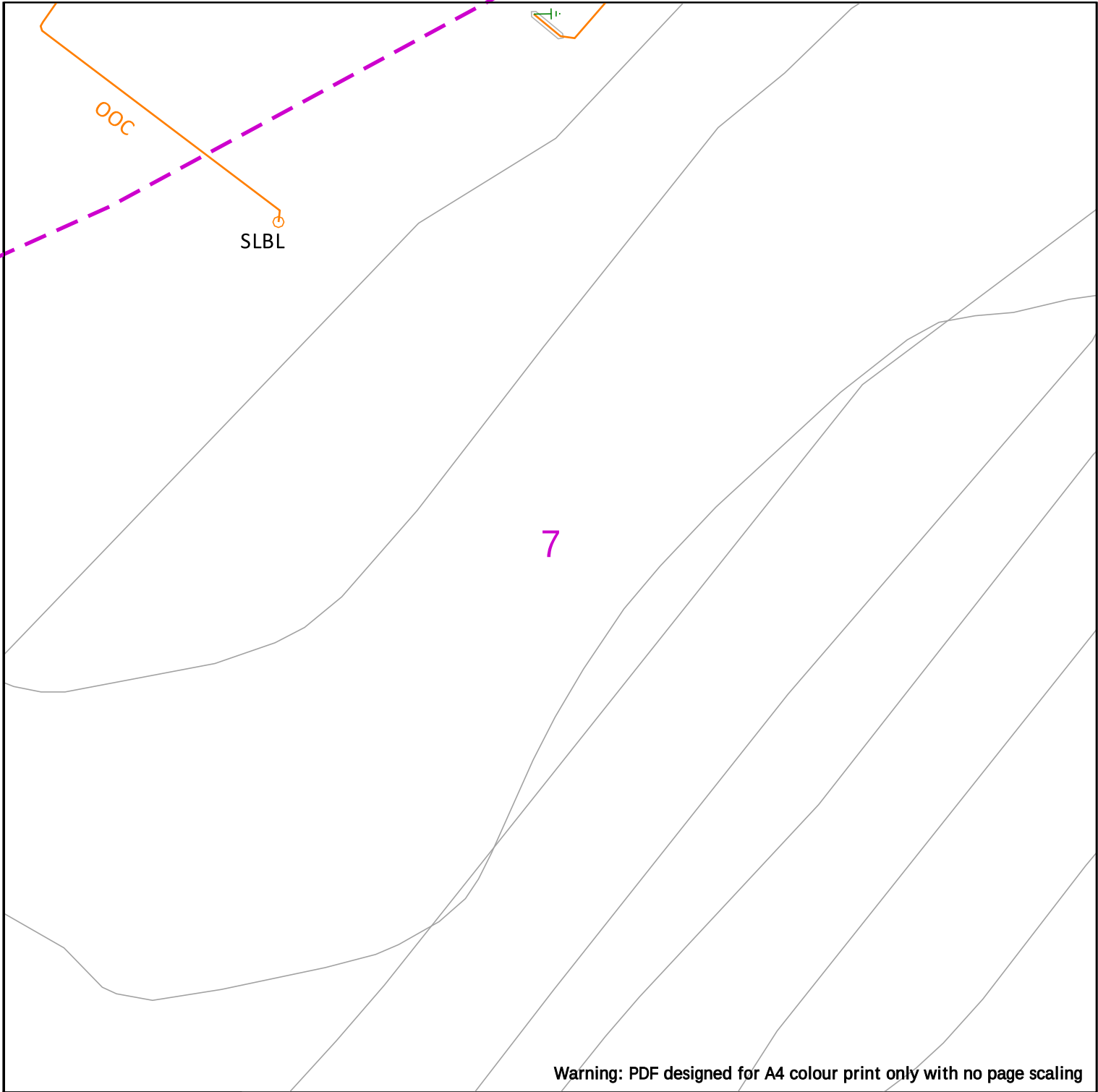
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Scale: 1:250 (When plotted at A4)



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	Operating Voltage	Colour Code	Line Colour	In an emergency call 105, 24 hours a day	Dig Sites
	132kV	Black			Line: 
	33kV	Green			Area: 
	22kV-25kV	Yellow			
	11kV	Red			
	6kV-6.6kV	Blue			
	1kV-6kV	Violet			
	LV	Orange			
	Unknown Voltage	Brown			
Data Management Electricity North West Linley House Dickinson Street Manchester, M1 4LF Phone: 0800 195 4141 Email: planrequest@enwl.co.uk Date Requested: 04/09/2023 Job Reference: 30716527 Site Location: 385904 400767 Requested by: Miss Lauren Wenham Your Scheme/Reference: STV5997	IMPORTANT INFO Unless otherwise indicated the depth of Electricity North West Limited cables are in accordance with NJUG (450mm for Low Voltage & 600mm for 11kV cables) 33kV and 132kV cables are laid at depths as marked. The depth and positions of Electricity North West Limited equipment was accurate as shown when the equipment was installed. However third parties may have altered the level & other reference data. Therefore Electricity North West Limited accept no responsibility for the position of Electricity North West Limited equipment being different from shown. No person, body or company, shall be relieved from liability for damage caused to Electricity North West Limited equipment by reason of being located differently to the indications on this drawing or from any regulatory loss of income or incentive, or expense, which may be suffered by Electricity North West Limited and which is caused or contributed to by any loss of supply as a result of any damage caused to Electricity North West Limited's equipment. Service cables are not necessarily shown but must be assumed to exist to all premises, streetlights and signs. There may be other Electricity North West Limited apparatus in the vicinity which is not indicated on the cable records. Other apparatus may also be present which is owned by a third party other than Electricity North West Limited. Reference should be made to HSE Guidance, HS(G)47 "Avoiding Danger from Underground Services" and GS6 "Avoidance of Danger from Overhead Power Lines". Electricity North West Limited 304 Bridgewater Place, Birchwood Park, Warrington WA3 6XG. Registered in England and Wales. Registered No 02366949				
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 Data Management Electricity North West Linley House Dickinson Street Manchester, M1 4LF Phone: 0800 195 4141 Email: planrequest@enwl.co.uk	Operating Voltage	Colour Code	Line Colour	In an emergency call 105, 24 hours a day	Dig Sites
	132kV	Black			Line: 
	33kV	Green			Area: 
	22kV-25kV	Yellow			
	11kV	Red			
	6kV-6.6kV	Blue			
	1kV-6kV	Violet			
	LV	Orange			
Date Requested: 04/09/2023 Job Reference: 30716527 Site Location: 385904 400767 Requested by: Miss Lauren Wenham Your Scheme/Reference: STV5997	Unknown Voltage	Brown			
IMPORTANT INFO Unless otherwise indicated the depth of Electricity North West Limited cables are in accordance with NJUG (450mm for Low Voltage & 600mm for 11kV cables) 33kV and 132kV cables are laid at depths as marked. The depth and positions of Electricity North West Limited equipment was accurate as shown when the equipment was installed. However third parties may have altered the level & other reference data. Therefore Electricity North West Limited accept no responsibility for the position of Electricity North West Limited equipment being different from shown. No person, body or company, shall be relieved from liability for damage caused to Electricity North West Limited equipment by reason of being located differently to the indications on this drawing or from any regulatory loss of income or incentive, or expense, which may be suffered by Electricity North West Limited and which is caused or contributed to by any loss of supply as a result of any damage caused to Electricity North West Limited's equipment. Service cables are not necessarily shown but must be assumed to exist to all premises, streetlights and signs. There may be other Electricity North West Limited apparatus in the vicinity which is not indicated on the cable records. Other apparatus may also be present which is owned by a third party other than Electricity North West Limited. Reference should be made to HSE Guidance, HS(G)47 "Avoiding Danger from Underground Services" and GS6 "Avoidance of Danger from Overhead Power Lines". Electricity North West Limited 304 Bridgewater Place, Birchwood Park, Warrington WA3 6XG. Registered in England and Wales. Registered No 02366949					
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Scale: 1:250 (When plotted at A4)

Enquirer

Name	Miss Lauren Wenham	Phone	01604 781877
Company	Soiltechnics Ltd	Mobile	Not Supplied
Address	Cedar Barn Cedar Barn White Lodge Walgrave Northamptonshire NN6 9PY		
Email	admin@soiltechnics.net		

Enquiry Details

Enquiry type	Planned Works
Work category	Development Projects
Work type	Piling
Work type buffer*	150 metres
Start date	05/09/2023
End date	05/09/2023
Scheme/Reference	STV5997
Search location	XY= 385914, 400805
Confirmed location	385904 400767
Site size	0 metres square
Site Contact Name	Admin Soiltechnics
Site Phone No.	01604781877
Description of Works	Boreholes

* The WORK TYPE BUFFER is a distance added to your search area based on the Work type you have chosen.

Site Map



Please note that the above map only displays the location of the proposed work site and will not display any of the Members' pipes and cables. It is imperative that this area accurately reflects the proposed work site.

Affected LSBUD members

(LSBUD Members who have assets registered on LSBUD within the vicinity of your search area.)

Asset Owner	Phone/Email	Emergency Only	Status
Cadent Gas	0800688588	0800111999	Await response
Electricity North West Limited	08001954141	08001954141	Await response

Status explanation

Await Response means that the asset owner will contact you. This is typically by sending the plan response but they may ask for further information before being able to do so, particularly if any payments or authorisations are required.

Email Additional Info means that the asset owner needs further information about your works to assess your enquiry before providing a response. Please provide any details you have available including plans, method statements etc. if available.

Important notices

It is very important that you correctly understand what the service does and the procedures in order for you to work safely. Please refer to the LSBUD Support Page (www.lsbud.co.uk/lineasearchbeforeudig-support) for further guidance.

This information includes how to provide additional information to the LSBUD Members who request it to provide a response to your enquiry.

Validity and search criteria. The results of this enquiry are based on the confirmed information you entered and are valid only as at the date and time of the enquiry. It is your responsibility to ensure that the Enquiry Details are correct, and LineasearchbeforeUdig (LSBUD) accepts no responsibility for any errors or omissions in the Enquiry Details or any consequences thereof. LSBUD Members update their asset information on a regular basis so you are advised to consider this when undertaking any works. It is your responsibility to choose the period of time after which you need to resubmit any enquiry but the maximum time (after which your enquiry will no longer be dealt with by the LSBUD Helpdesk and LSBUD Members) is 28 days. If any details of the enquiry change, particularly including, but not limited to, the location of the work, then a further enquiry must be made.

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List of not affected LSBUD members

(LSBUD Members who do not have assets registered on the LSBUD service within the vicinity of your search area.)

Angus Energy	AWE Pipeline	B & D Energy Limited
Balfour Beatty Investments Limited	BOC Limited (A Member of the Linde Group)	Box Broadband
BP Exploration Operating Company Limited	BPA	Cambridgeshire County Council Climate Change and Energy Services
CATS Pipeline c/o Wood Group PSN	Cemex	Centrica Storage Ltd
CNG Services Ltd	Concept Solutions People Ltd	ConocoPhillips (UK) Teesside Operator Ltd
D.S.Smith	Diamond Transmission Corporation	DIO (MOD Abandoned Pipelines)
DIO (MOD Live Pipelines)	E.ON UK CHP Limited	EDF Energy Renewables Ltd
EirGrid	Eleclink Limited	Energy Assets Networks
ENI & Himor c/o Penspen Ltd	EnQuest NNS Limited	EP Langage Limited
ESB CCGT Power station (Carrington Gas Pipeline)	ESP Utilities Group	ESSAR
Esso Petroleum Company Limited	euNetworks Fiber UK Ltd	EXA Infrastructure
Exolum Pipeline System	Fulcrum Electricity Assets Limited	Fulcrum Pipelines Limited
Gamma	Gas Networks Ireland (UK)	Gateshead Energy Company
Gigaclear Ltd	Harbour Energy	Heathrow Airport LTD
Humbly Grove Energy	IGas Energy	INEOS FPS Pipelines
INEOS Manufacturing (Scotland and TSEP)	INOVYN ChlorVinyls Limited	INOVYN Enterprises Limited
Intergen (Coryton Energy or Spalding Energy)	Jurassic Fibre Ltd	Kensa Utilities
Last Mile	Mainline Pipelines Limited	Manchester Jetline Limited
Manx Cable Company	Marchwood Power Ltd (Gas Pipeline)	Melbourn Solar Limited
Moray East Offshore Windfarm	MUA Group Limited	National Gas Transmission
National Grid Electricity Distribution	National Grid Electricity Transmission	Neos Networks
Northern Gas Networks Limited	Northumbrian Water Group	NPower CHP Pipelines
NTT Global Data Centers EMEA UK Ltd	NYnet Ltd	Ogi
Oikos Storage Limited	Ørsted	Palm Paper Ltd
Perenco UK Limited (Purbeck Southampton Pipeline)	Petroineos	Phillips 66
Portsmouth Water	Premier Transmission Ltd (SNIP)	Redundant Pipelines - LPDA
RWE - Great Yarmouth Pipeline (Bacton to Great Yarmouth Power Station)	RWEnpower (Little Barford and South Haven)	SABIC UK Petrochemicals
SAS Utility Services Ltd	Scottish and Southern Electricity Networks	Scottish Power Generation
Seabank Power Ltd	SES Water	SGN
Shell	Shell NOP	SP Energy Networks
Spring Fibre Limited	Squire Energy Networks	SSE Generation Ltd
SSE Transmission	SSE Utility Solutions Limited	Storengy



Enquiry Confirmation

LSBUD Ref: 30716527

Date of enquiry: 04/09/2023

Time of enquiry: 10:17

Tata Communications (c/o JSM Construction Ltd)	Total Colnbrook Pipelines	Total Finaline Pipelines
Transmission Capital	UK Power Networks	Uniper UK Ltd
University of Cambridge Granta Backbone Network	Vattenfall	Veolia ES SELCHP Limited
Veolia ES Sheffield Ltd	Voneus Limited	VPI Power Limited
Wales and West Utilities	West of Duddon Sands Transmission Ltd	Westminster City Council
Zayo Group UK Ltd c/o JSM Group Ltd		

Non-LSBUD members (Asset owners not registered on LSBUD)

(The following Non-LSBUD Members may have assets in your search area. It is YOUR RESPONSIBILITY to contact them before proceeding.

Please be aware this list is not exhaustive and it is your responsibility to identify and contact all asset owners within your search area.)

Asset Owner	Preferred contact method	Phone	Status
Arelion UK Ltd	check-network@arelion.com		Not Notified
BT	https://www.swns.bt.com/pls/mbe/welcome.home	08000232023	Not Notified
CityFibre	asset.team@cityfibre.com	033 3150 7282	Not Notified
Colt	plantenquiries@catelecomuk.com	01227768427	Not Notified
Equans	nrsua.uk@equans.com	0800 130 3600	Not Notified
GTC	https://pe.gtc-uk.co.uk/PlantEnqMembership	01359240363	Not Notified
Lumen Technologies	plantenquiries@ocugroup.com	02087314613	Not Notified
Manchester City Council	https://www.manchester.gov.uk		Not Notified
Mobile Broadband Network Limited	mbnl.plant.enquiries@turntown.com	01212 621 100	Not Notified
Sky UK Limited	nrsua@sky.uk	02070323234	Not Notified
Sota	sota.plantenquiries@ocugroup.com		Not Notified
United Utilities	WastewaterDeveloperServices@uuplc.co.uk	08707510101	Not Notified
Utility assets Ltd	assetrecords@utilityassets.co.uk		Not Notified
Verizon Business	osp-team@uk.verizonbusiness.com	01293611736	Not Notified
Virgin Media	http://www.digdat.co.uk	08708883116	Not Notified
Vodafone	osm.enquiries@atkinsglobal.com	01454662881	Not Notified

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Appendix B Exploratory hole records

Key to legends

Composite materials, soils and lithology					
	Topsoil		Made Ground		Boulders
	Clay		Coal		Cobbles
	Gravel		Limestone		Mudstone
	Sand		Sandstone		Silt
					Siltstone

Note: Composite soil types are signified by combined symbols.

Key to 'test results' and 'sampling' columns

Test result		Sampling	
Depth	Records depth that the test was carried out (i.e.: at 2.10m or between 2.10m and 2.55m)	From (m) To (m)	Records depth of sampling
	PP – Pocket penetrometer result reported as an equivalent undrained shear strength (kN/m ²) by applying a factor of 50.		D Disturbed sample
			B Bulk disturbed sample
			ES Environmental sample
Result	SV – Hand held shear vane result reported as an undrained shear strength (kN/m ²). Where multiple readings are taken at the same level the average value is shown on the log. * Signifies that instrument limit reached.	Type	W Water sample
			U Undisturbed thick-walled sample 100mm diameter sampler
			UT Undisturbed thin walled sample 100mm diameter sampler
			UTF Failed undisturbed sample

Water observations

Described at foot of log and shown in the 'water strike' column.

 Water level observed after specified delay in drilling

 Water strike

Density

Density recorded in brackets determined by qualitative field assessment or inferred from density testing and soil descriptions from across the site (i.e.: [Medium dense]).

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.26								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.46								
...at 0.46m depth depth, woven membrane. Brown sandy clayey angular to subangular fine to coarse GRAVEL of brick, sandstone, concrete and clinker. (MADE GROUND)	0.76						0.56	0.71	D
TRIAL PIT TERMINATED AT 0.76m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 12/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP01

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subrounded fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.26								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.44								
...at 0.44m depth depth, woven membrane. Brown sandy slightly clayey angular to subangular fine to coarse GRAVEL with low cobble content of concrete. Gravel is brick, concrete and clinker. (MADE GROUND)	0.71						0.56	0.71	D
TRIAL PIT TERMINATED AT 0.71m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 12/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP02

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.25								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.46						0.56	0.71	D
...at 0.46m depth depth, woven membrane. Brown sandy clayey angular to subangular fine to coarse GRAVEL with low cobble content of concrete. Gravel is brick, sandstone, concrete, clinker and wood. (MADE GROUND)	0.76								
TRIAL PIT TERMINATED AT 0.76m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 12/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP03

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.24								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)									
.....at 0.46m depth depth, woven membrane.	0.46								
Brown sandy clayey angular to subangular fine to coarse GRAVEL with low cobble content of concrete. Gravel is brick, sandstone, concrete, clinker and wood. (MADE GROUND)							0.56	0.71	D
TRIAL PIT TERMINATED AT 0.71m	0.71								

Notes Trial pit sides remained upright and stable upon completion. Infiltration testing performed within SUBGRADE.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 11/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP04

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.28								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.48								
...at 0.48m depth depth, woven membrane. Brown clayey very angular to subangular fine to coarse GRAVEL of brick, sandstone, concrete, clinker and wood. (MADE GROUND)	0.76						0.56	0.71	D
TRIAL PIT TERMINATED AT 0.76m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 11/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP05

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.24								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.43								
.....at 0.43m depth depth, woven membrane. Brown sandy clayey angular to subangular fine to coarse GRAVEL with low cobble content of concrete. Gravel is brick, sandstone, concrete, clinker and wood. (MADE GROUND)							0.56	0.71	D
TRIAL PIT TERMINATED AT 0.71m	0.71								

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 12/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP06

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.26								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.46								
...at 0.46m depth depth, woven membrane. Brown sandy clayey angular to subangular fine to coarse GRAVEL with low cobble content of concrete. Gravel is brick, concrete and clinker. (MADE GROUND)	0.71						0.56	0.71	D
TRIAL PIT TERMINATED AT 0.71m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 11/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP07

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.26								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.44								
...at 0.44m depth depth, woven membrane. Brown sandy clayey angular to subangular fine to coarse GRAVEL with low cobble content of concrete. Gravel is brick, sandstone, concrete, clinker and wood. (MADE GROUND)	0.71						0.56	0.71	D
TRIAL PIT TERMINATED AT 0.71m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 12/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP08

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.26								
...at 0.38m depth depth, woven membrane.	0.38								
Brown sandy clayey angular to subangular fine to coarse GRAVEL with low cobble content of brick. Gravel is brick, sandstone, concrete, clinker and wood. (MADE GROUND)							0.56	0.71	D
TRIAL PIT TERMINATED AT 0.71m	0.71								

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 12/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP09

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.26								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.48								
.....at 0.48m depth depth, woven membrane. Brown sandy clayey angular to subangular fine to coarse GRAVEL of brick, sandstone, concrete and clinker. (MADE GROUND)	0.66						0.56	0.71	D
Dark brown ashy sandy angular to subangular fine to medium GRAVEL of clinker and brick. (MADE GROUND)	0.76								
TRIAL PIT TERMINATED AT 0.76m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 12/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP10

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.26								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.47								
...at 0.47m depth depth, woven membrane. Brown sandy clayey angular to subangular fine to coarse GRAVEL with low cobble content of brick. Gravel is brick, sandstone, concrete, ceramic and clinker. (MADE GROUND)	0.66						0.56	0.71	D
Dark brown ashy sandy angular to subangular fine to medium GRAVEL of clinker, brick and ceramic. (MADE GROUND)	0.76								
TRIAL PIT TERMINATED AT 0.76m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 11/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP11

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.28								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.46						0.56	0.71	D
...at 0.46m depth depth, woven membrane. Brown very sandy clayey angular to subangular fine to coarse GRAVEL of brick, sandstone, concrete, clinker and wood. (MADE GROUND)	0.76								
TRIAL PIT TERMINATED AT 0.76m									

Notes Trial pit sides remained upright and stable upon completion. Infiltration testing performed on SUBBASE.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 11/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP12

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.26								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.46								
...at 0.46m depth depth, woven membrane. Brown sandy angular to subangular fine to coarse GRAVEL with low cobble content of concrete. Gravel is brick, sandstone, concrete and clinker. (MADE GROUND)	0.66						0.56	0.66	D
TRIAL PIT TERMINATED AT 0.66m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 12/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP13

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.29								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.44								
...at 0.44m depth depth, woven membrane. Brown sandy angular to subangular fine to coarse GRAVEL of brick, sandstone, concrete and ceramic. (MADE GROUND)	0.76						0.56	0.71	D
TRIAL PIT TERMINATED AT 0.76m									

Notes Trial pit sides remained upright and stable upon completion. Infiltration testing performed on SUBBASE.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 12/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP14

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
ARTIFICIAL TURF. (MADE GROUND)	0.03								
SHOCK PAD. (MADE GROUND)	0.08								
ASPHALT. (ASPHALT)	0.16								
Yellowish brown sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.26								
Light brown slightly sandy angular to subangular fine to coarse GRAVEL of limestone. (MADE GROUND - SUBBASE)	0.42								
...at 0.42m depth depth, woven membrane. Brown sandy slightly clayey angular to subangular fine to coarse GRAVEL of brick, sandstone, concrete, clinker and wood. (MADE GROUND)	0.66						0.56	0.66	D
TRIAL PIT TERMINATED AT 0.66m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 12/05/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by KD	Revision A
	Co-ordinates -	Checked by DH	HP15

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Grass onto dark brown sandy clayey fine to coarse angular to subangular GRAVEL of brick, concrete, ceramic, clinker and sandstone with medium cobble content of angular brick and concrete. (MADE GROUND)	0.50						0.30	0.50	B
...at 0.5m depth, concrete obstruction.									
TRIAL PIT TERMINATED AT 0.50m									

Notes Trial pit sides remained upright and stable upon completion. Terminated due to concrete obstruction.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 07/09/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by JC	Revision A
	Co-ordinates -	Checked by JP	HP16A

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Grass onto stiff brown mottled grey slightly gravelly CLAY with low cobble content of concrete. Gravel is fine to medium angular to subangular brick and concrete. (MADE GROUND) ...at 0.2m depth, concrete obstruction.	0.20				PP 0.10	PP=154	0.10	0.20	D
TRIAL PIT TERMINATED AT 0.20m									

Notes Trial pit sides remained upright and stable upon completion. Terminated due to concrete obstruction.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 07/09/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by JC	Revision A
	Co-ordinates -	Checked by JP	HP16B

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Grass onto stiff brown mottled grey slightly gravelly CLAY with low cobble content of concrete. Gravel is fine to medium angular to subangular brick and concrete. (MADE GROUND)	0.60				PP 0.35	PP=100			
...at 0.6m depth, concrete obstruction.									
TRIAL PIT TERMINATED AT 0.60m									

Notes Trial pit sides remained upright and stable upon completion. Terminated due to concrete obstruction.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 07/09/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by JC	Revision A
	Co-ordinates -	Checked by JP	HP16C

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Grass onto firm dark brown slightly sandy slightly gravelly CLAY with medium cobble content of concrete and brick. Gravel is fine to coarse angular to subrounded brick, concrete, plastic, ceramic and stone. (MADE GROUND)	1.10				PP 0.30	PP=63			
					PP 0.60	PP=50	0.50	0.60	D
							0.70	0.80	D
...at 0.9m depth, ether odour noted.					PP 0.90	PP=75	0.90	1.00	D
TRIAL PIT TERMINATED AT 1.10m									

Notes Trial pit sides remained upright and stable upon completion. Infiltration testing performed.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 07/09/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by JC	Revision A
	Co-ordinates -	Checked by JP	HP17

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Grass onto dark brown clayey fine to coarse angular to subangular GRAVEL of brick, concrete, ceramic, clinker and sandstone with cobbles of medium brick and concrete. (MADE GROUND)	0.55						0.65	0.95	B
Dark brown very gravelly fine to medium SAND. Gravel is fine to coarse angular to subangular brick, concrete, sandstone and clinker with frequent ash. (MADE GROUND)									
TRIAL PIT TERMINATED AT 1.05m	1.05								

Notes Trial pit sides remained upright and stable upon completion. Infiltration testing performed.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 07/09/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by JC	Revision A
	Co-ordinates -	Checked by JP	HP18

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Grass onto firm dark brown slightly sandy slightly gravelly CLAY with medium cobble content of concrete and brick. Gravel is fine to coarse angular to subrounded brick, concrete, plastic, ceramic and stone. (MADE GROUND)	1.00				PP 0.30	PP=92	0.20	0.30	D
			PP 0.60		PP=104	0.60	0.70	D	
...at 0.8m depth, cobble of asphalt.						0.90	1.00	D	
TRIAL PIT TERMINATED AT 1.00m									

Notes Trial pit sides remained upright and stable upon completion.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 07/09/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by JC	Revision A
	Co-ordinates -	Checked by JP	HP19

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Grass onto firm dark brown slightly sandy slightly gravelly CLAY with medium cobble content of brick. Gravel is fine to coarse angular to subrounded brick, concrete, plastic, ceramic and stone. (MADE GROUND) ...at 0.1m depth, concrete boulder.	1.00				PP 0.40	PP=50	0.30	0.40	D
							0.50	0.60	D
							0.90	1.00	D
TRIAL PIT TERMINATED AT 1.00m									

Notes Terminated due to concrete boulder obstruction.	Title Trial pit record	Dimensions (w x l) 0.30m x 0.30m	Date(s) 07/09/2023
	Method Hand tools	Logged by CB	Sheet number Sheet 1 of 1
Groundwater observations No groundwater encountered.	Level (m OD) -	Compiled by JC	Revision A
	Co-ordinates -	Checked by JP	HP20

Key to legends

Composite materials, soils and lithology							
	Topsoil		Made Ground		Boulders		Chalk
	Clay		Coal		Cobbles		Concrete
	Gravel		Limestone		Mudstone		Peat
	Sand		Sandstone		Silt		Siltstone

Note: Composite soil types are signified by combined symbols.

Key to 'test results' and 'sampling' columns

Test result		Sampling	
Depth	Records depth that the test was carried out (i.e.: at 2.10m or between 2.10m and 2.55m)	From (m) To (m)	Records depth of sampling
Result	PP – Pocket penetrometer result reported as an equivalent undrained shear strength (kN/m ²) by applying a factor of 50.		D Disturbed sample
	SV – Hand held shear vane result reported as an undrained shear strength (kN/m ²). Where multiple readings are taken at the same level the average value is shown on the log. * Signifies that instrument limit reached.		B Bulk disturbed sample
	SPT – Standard Penetration Test result (N value) (uncorrected) ^{1,2,3} SPT(c) – Standard Penetration Test result (solid cone) (N value) (uncorrected) ^{1,2,3}		ES Environmental sample
	UT – Undisturbed sample 100mm diameter sampler with number of blows of driving equipment required to obtain sample	Type	W Water sample
			U Undisturbed thick-walled sample 100mm diameter sampler
			UT Undisturbed thin walled sample 100mm diameter sampler
			UTF Failed undisturbed sample

Water observations

Described at foot of log and shown in the 'water strike' column.

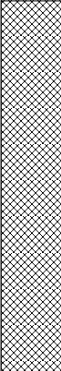
- Water level observed after specified delay in drilling
- Water strike

Installation details

	Gravel filter		Bentonite
	Slotted pipe		Unslotted pipe
	Arisings		Grout
	Extensometer magnet		Vibrating wire piezometer

Density

Density recorded in brackets determined by qualitative field assessment or inferred from density testing and soil descriptions from across the site (i.e.: [Medium dense]).

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	ASPHALT. (ASPHALT)	0.10												
	Yellowish brown sandy angular to subangular fine to coarse LIMESTONE. (MADE GROUND)	0.30								PP 0.35	PP=63			
	Firm brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is angular to subangular fine to coarse brick, sandstone, glass and concrete. (MADE GROUND)	0.45												
	Dark grey and dark brown ashy sandy clayey angular to subangular fine to coarse GRAVEL of clinker, brick, ceramic, glass and occasional concrete. (MADE GROUND)	0.90				S 1.00 - 1.45	(6) 8					0.80 0.90	2.45	D B
	Very loose to loose dark grey and dark brown ashy sandy slightly clayey angular to subangular fine to coarse GRAVEL of clinker, ceramic, brick, sandstone, concrete, glass and wood. (MADE GROUND)					S 2.00 - 2.45	(1) 3							
	BOREHOLE TERMINATED AT 2.45m	2.45												

Notes Target depth reached.	Title Dynamic windowless sampling record			Date(s) 12/05/2023	
	Recovery details		Method Windowless sampler	Logged by CB	Sheet number Sheet 1 of 1
	Range (m)	Recovery (%)			
	0.00 - 1.00 1.00 - 2.00	100 60	Level (m OD) - Co-ordinates -	Compiled by KD Checked by DH	Revision A WS01

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with occasional rootlets. Gravel is angular to subangular fine to medium brick and glass. (TOPSOIL - MADE GROUND)	0.15												
	Brown sandy angular to subangular fine to coarse GRAVEL of brick, sandstone and ceramic. (MADE GROUND)	0.25												
	Dark grey and brown ashy sandy clayey angular to subangular fine to medium GRAVEL of clinker, ceramic, brick and concrete. (MADE GROUND)	0.50												
	Firm brown mottled dark grey slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse brick, clinker, ceramic, concrete and glass. (MADE GROUND)	0.80				S 1.00 - 1.45	(7) 17					0.85	1.45	D
	Firm dark grey mottled brown ashy slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse brick, clinker, wood and concrete. (MADE GROUND)	1.50										1.50	2.00	B
	Medium dense dark grey ashy sandy angular to subangular fine to coarse GRAVEL of clinker, ceramic and brick. (MADE GROUND)	2.45				S 2.00 - 2.45	(11) 25							
	BOREHOLE TERMINATED AT 2.45m													

Notes Target depth reached.	Title Dynamic windowless sampling record				Date(s) 13/05/2023	
	Recovery details		Method Windowless sampler	Logged by CB	Sheet number Sheet 1 of 1	
	Range (m)	Recovery (%)			Revision A	
	0.00 - 1.00 1.00 - 2.00	90 50	Level (m OD) -	Compiled by KD	WS02	
Groundwater observations No groundwater encountered.			Co-ordinates -	Checked by DH		

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass over dark brown slightly clayey fine to medium SAND with occasional rootlets. (TOPSOIL - MADE GROUND)	0.25												
	Dark brown and very sandy clayey angular to subangular fine to coarse GRAVEL of brick, concrete, ceramic and brick. (MADE GROUND)	0.70												
	Firm brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to medium brick, clinker and concrete. (MADE GROUND)	2.00				S 1.00 - 1.45	(1)		1.00	PP 0.80 PP 0.95	PP=67 PP=71	0.80 0.80	1.00 1.00	D D
	Very loose brown fine to medium SAND. (POSSIBLE MADE GROUND)	2.45				S 2.00 - 2.45	(2) 1		1.00					
	BOREHOLE TERMINATED AT 2.45m													

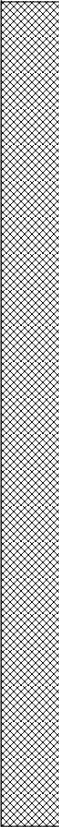
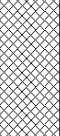
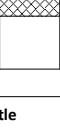
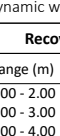
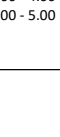
Notes Target depth reached.	Title			Date(s)	
	Dynamic windowless sampling record			14/05/2023	
	Recovery details		Method	Logged by	Sheet number
	Range (m)	Recovery (%)	Windowless sampler	CB	Sheet 1 of 1
Groundwater observations No groundwater encountered.	0.00 - 1.00	90	Level (m OD)	Compiled by	Revision
	1.00 - 2.00	20	-	KD	A
			Co-ordinates	Checked by	WS03
			-	DH	

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass over dark brown slightly gravelly slightly clayey fine to medium SAND with occasional rootlets. Gravel is angular to subangular fine to medium brick. (TOPSOIL - MADE GROUND)	0.25												
	Angular concrete COBBLES. (MADE GROUND)	0.35										0.50	0.75	D
	Soft to firm brown mottled grey slightly sandy slightly gravelly CLAY with low cobble content of brick. Gravel is angular to subangular fine to coarse brick, clinker, concrete and ceramic. (MADE GROUND)					S 1.00 - 1.45	(5) 14			PP 0.70 PP 1.20	PP=58 PP=71			D
	Firm dark grey mottled dark brown ashy slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse clinker, brick, glass, ceramic and sandstone. (MADE GROUND)	1.70				S 2.00 - 2.45	(3) 6					1.50		D
	Dark brown and dark grey ashy sandy angular to subangular fine to coarse GRAVEL of clinker, ceramic, brick and sandstone. (MADE GROUND)	2.60				S 3.00 - 3.24	(18) 50/85mm							
	BOREHOLE TERMINATED AT 3.45m	3.45												

Notes Borehole terminated due to refusal.	Title Dynamic windowless sampling record			Date(s) 15/05/2023	
	Recovery details		Method Windowless sampler	Logged by CB	
	Range (m)	Recovery (%)		Sheet number Sheet 1 of 1	
	0.00 - 1.00 1.00 - 2.00 2.00 - 3.00	100 100 80	Level (m OD) - -	Compiled by KD	Revision A
Groundwater observations No groundwater encountered.			Co-ordinates -	Checked by DH	WS04

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass over dark brown slightly clayey fine to medium SAND with occasional rootlets. (TOPSOIL - MADE GROUND)	0.15												
	Dark grey and dark brown ashy sandy clayey angular to subangular fine to coarse GRAVEL of clinker, brick, ceramic and concrete. (MADE GROUND)													
	Dark grey mottled brown ashy slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse clinker, brick, ceramic and sandstone. (MADE GROUND)	1.10				S 1.00 - 1.45	(6) 23					1.10	1.30	D
	Dark brown ashy very sandy angular to subangular fine to coarse GRAVEL of clinker, ceramic, glass and brick. (MADE GROUND)	2.20				S 2.00 - 2.38	(23) 50/235mm					2.20	2.50	D
	Very loose to loose dark grey ashy sandy slightly clayey angular to subangular fine to coarse GRAVEL of clinker, brick, concrete and ceramic. (MADE GROUND)	2.90				S 3.00 - 3.45	(3) 4					3.00	4.00	B
	Very loose dark grey ashy slightly sandy clayey angular to subangular fine to medium GRAVEL of clinker and charcoal. (MADE GROUND)	4.80				S 4.00 - 4.45	(2) 1							
	BOREHOLE TERMINATED AT 5.45m	5.45				S 5.00 - 5.45	(1) 1					5.00	5.45	D

Notes Target depth reached.	Title			Date(s)	
	Dynamic windowless sampling record			16/05/2023	
	Recovery details		Method	Logged by	Sheet number
	Range (m)	Recovery (%)	Windowless sampler	CB	Sheet 1 of 1
Groundwater observations No groundwater encountered.	1.00 - 2.00	100	Level (m OD)	Compiled by	Revision
	2.00 - 3.00	90	-	KD	A
	3.00 - 4.00	70	Co-ordinates	Checked by	WS05
	4.00 - 5.00	100	-	DH	

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Dark brown slightly sandy CLAY with occasional rootlets. (TOPSOIL - MADE GROUND)	0.10												
	Brown very sandy clayey angular to subangular fine to coarse GRAVEL of brick, sandstone, clinker and wood. (MADE GROUND)													
	Loose brown ashy sandy clayey angular to subangular fine to coarse GRAVEL of clinker, brick, sandstone, ceramic and metal. (MADE GROUND)	0.90				S 1.00 - 1.45	(3) 5					1.00 1.00 1.00	2.00 2.00 2.00	B B D
														
	Soft light brown slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine clinker and brick. (MADE GROUND)	2.10				S 2.00 - 2.45	(1) 2							
	Very loose dark brown ashy sandy angular to subangular fine to medium GRAVEL of clinker, brick and slag. (MADE GROUND)	2.30												
						S 3.00 - 3.45	(2) 3							
	...at 3.2m depth, band of clayey gravel.													
						S 4.00 - 4.45	(1) 3							
	Very loose dark grey ashy very gravelly fine to medium SAND. Gravel is angular to subangular fine to medium clinker and slag. (MADE GROUND)	4.20												
	BOREHOLE TERMINATED AT 5.45m	5.45				S 5.00 - 5.45	(2) 1							

Notes Target depth reached.	Title Dynamic windowless sampling record			Date(s) 17/05/2023	
	Recovery details		Method Windowless sampler	Logged by CB	Sheet number Sheet 1 of 1
	Range (m)	Recovery (%)			
	1.00 - 2.00 2.00 - 3.00 3.00 - 4.00 4.00 - 5.00	100 70 30 80	Level (m OD) - Co-ordinates -	Compiled by KD Checked by DH	Revision A WS06

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass over dark brown gravelly slightly clayey fine to medium SAND with occasional rootlets. Gravel is angular to subangular fine to medium ceramic and concrete. (TOPSOIL - MADE GROUND)	0.20												
	Dark grey and dark brown ashy sandy clayey angular to subangular fine to coarse GRAVEL of clinker, brick, ceramic and concrete. (MADE GROUND)	0.80										0.60	0.90	D
	Firm dark brown mottled dark grey slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse brick, clinker, ceramic, sandstone, concrete and glass. (MADE GROUND)	1.70										1.70	3.00	B
	Dark grey ashy sandy clayey angular to subangular fine to coarse GRAVEL with low cobble content of brick and ceramic. Gravel is clinker, brick, ceramic, glass and concrete. (MADE GROUND)	5.00										3.40	3.60	D
	BOREHOLE TERMINATED AT 5.00m													

Notes Target depth reached.	Title Dynamic windowless sampling record			Date(s) 18/05/2023	
	Recovery details		Method Windowless sampler	Logged by CB	Sheet number Sheet 1 of 1
	Range (m)	Recovery (%)			
Groundwater observations Seepages observed at 3.2m depth, no rise.	0.00 - 1.00	80	Level (m OD) -	Compiled by KD	Revision A
	1.00 - 2.00	95			
	2.00 - 3.00	95			
	3.00 - 4.00	90	Co-ordinates -	Checked by DH	WS07
	4.00 - 5.00	50			

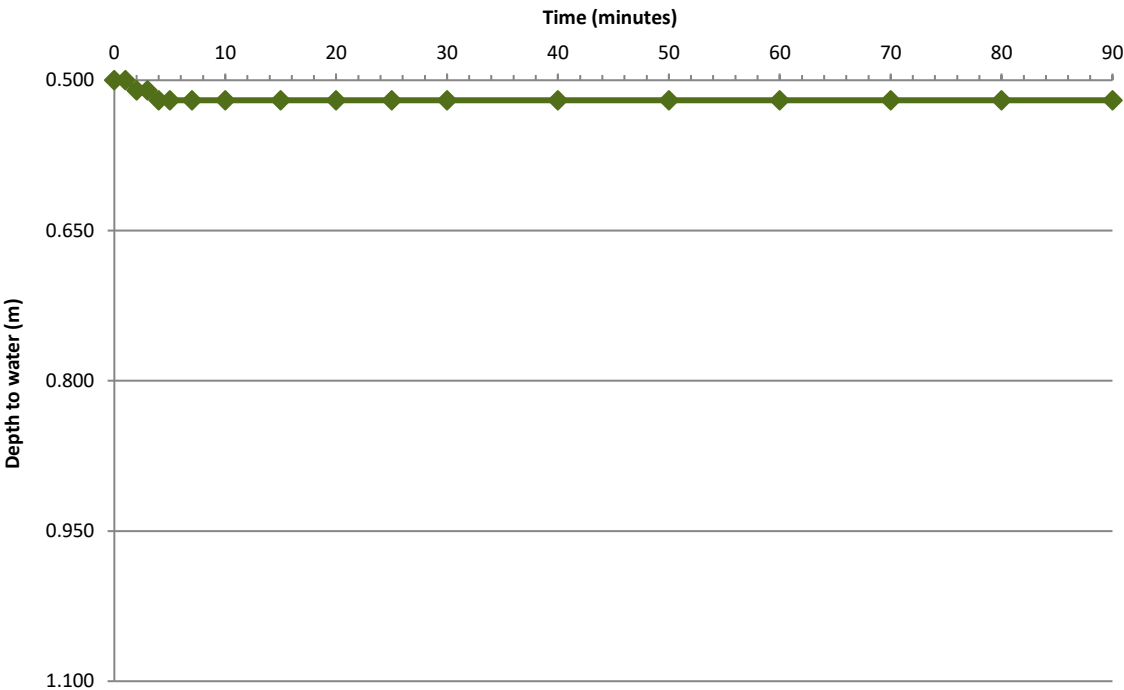
Appendix C In situ test results

Soil infiltration test (following BRE Digest 365 2016)

Location	Cycle	Test date	Plan dimensions (m)
HP17	1	07/09/2023	0.30 x 0.30

Groundwater observations (at time of excavation)
DRY

Depth of pit at start (m)	Depth of pit at end (m)
1.1	1.1



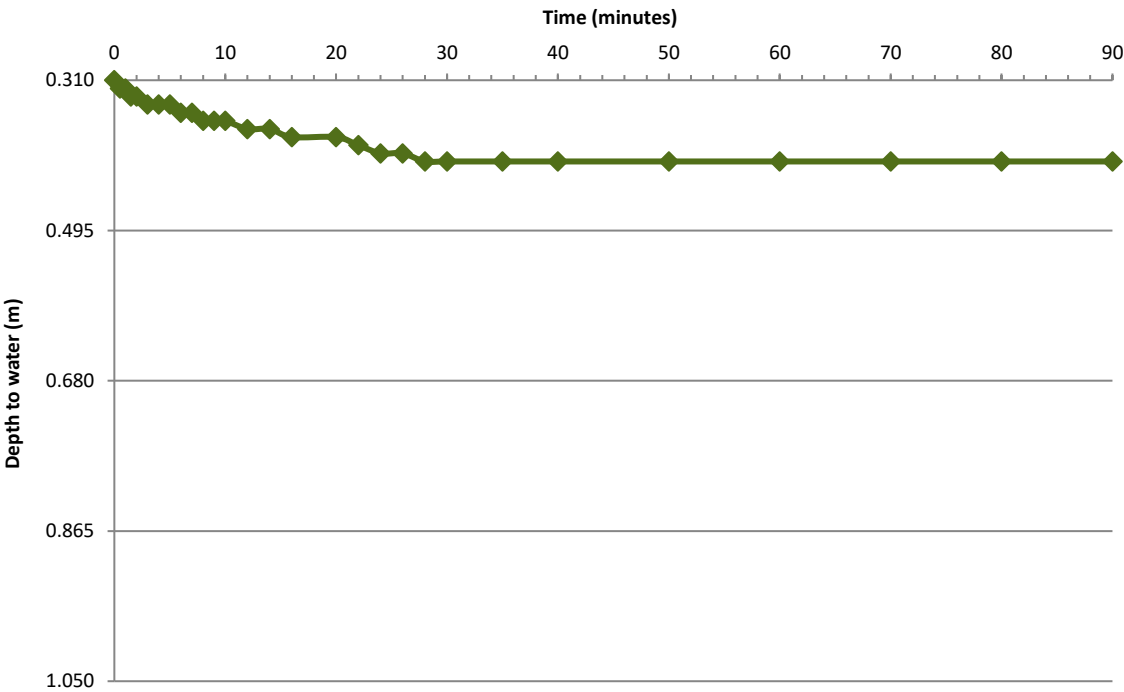
Insufficient infiltration over 90 minutes of monitoring therefore unable to calculate soil infiltration rate.

Soil infiltration test (following BRE Digest 365 2016)

Location	Cycle	Test date	Plan dimensions (m)
HP18	1	07/09/2023	0.30 x 0.30

Groundwater observations (at time of excavation)
DRY

Depth of pit at start (m)	Depth of pit at end (m)
1.05	1.05



Insufficient infiltration over 90 minutes of monitoring therefore unable to calculate soil infiltration rate.

Appendix D Geotechnical Laboratory Test Certificates



4041

TEST CERTIFICATE**DETERMINATION OF LIQUID AND PLASTIC LIMITS**

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Manchester Communications Academy

Client Reference: STV5997
Job Number: 23-33882-1
Date Sampled: 12/05/2023
Date Received: 15/05/2023
Date Tested: 23/05/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

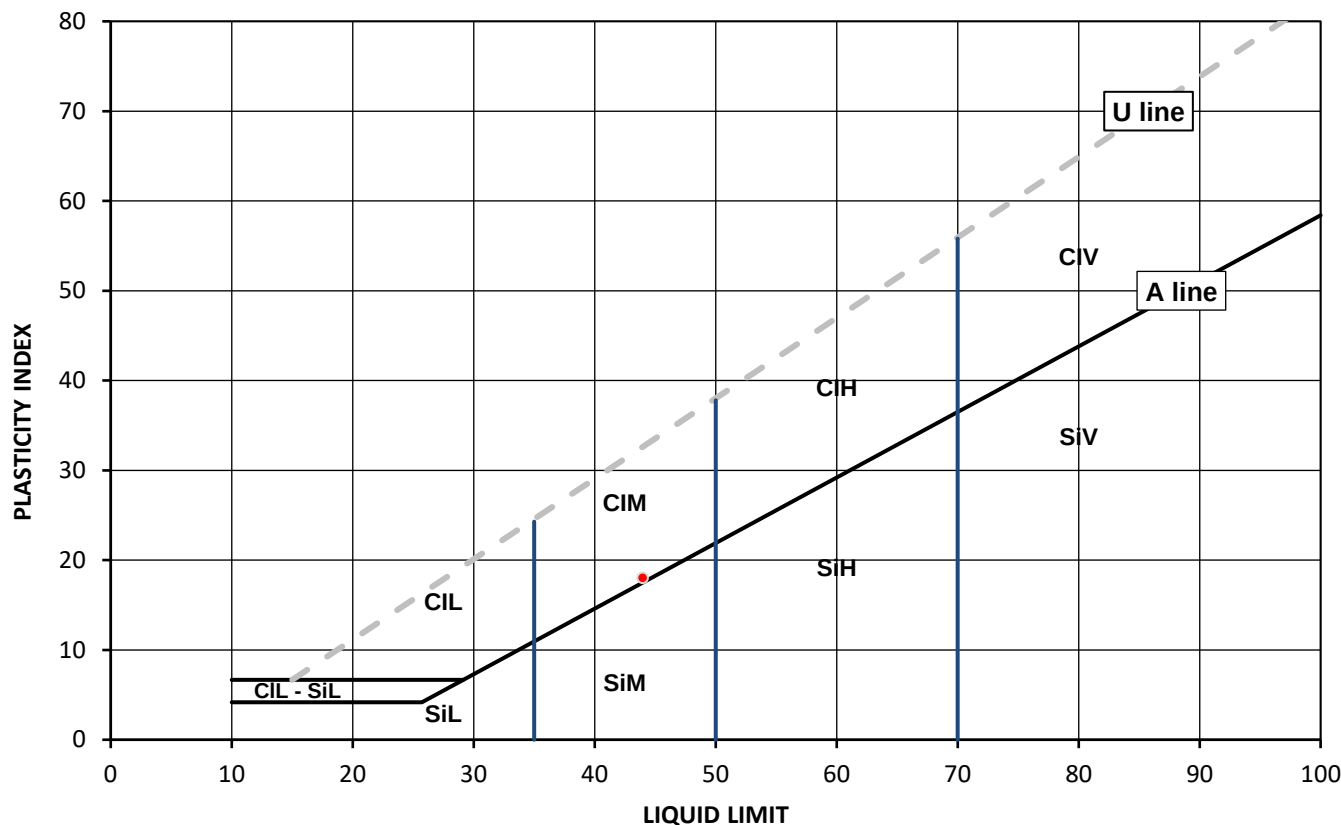
Test Results:

Laboratory Reference: 2679913
Hole No.: WS03
Sample Reference: WS030.801
Sample Description: Dark brown gravelly sandy CLAY

Depth Top [m]: 0.80
Depth Base [m]: 1.00
Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
23	44	26	18	57



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	Liquid Limit
Si	Silt	L	below 35
		M	35 to 50
		H	50 to 70
		V	exceeding 70
		O	append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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4041

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Manchester Communications Academy

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client Reference: STV5997
Job Number: 23-33882-1
Date Sampled: 12/05/2023
Date Received: 15/05/2023
Date Tested: 23/05/2023
Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type							
2679913	WS03	WS030.801	0.80	1.00	D	Dark brown gravelly sandy CLAY		23	Sample was quartered, oven dried at 106 °C			

Comments:

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Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd



4041

TEST CERTIFICATE**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY

Contact: Admin
Site Address: Manchester Communications Academy

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: STV5997
Job Number: 23-33882-1
Date Sampled: 15/05/2023
Date Received: 17/05/2023
Date Tested: 25/05/2023
Sampled By: Not Given

Test Results:

Laboratory Reference: 2679914

Hole No.: WS06

Sample Reference: WS061.001

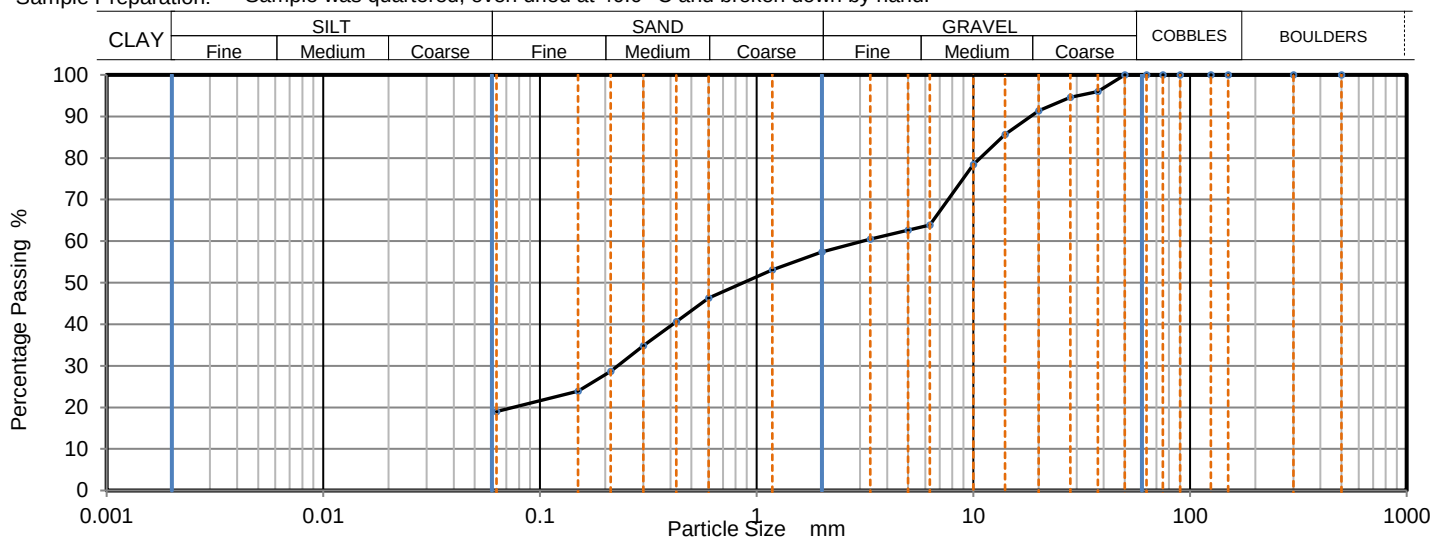
Sample Description: Dark brown sandy clayey GRAVEL with fragments of glass, slag

Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 1.00

Depth Base [m]: 2.00

Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	96		
28	95		
20	91		
14	86		
10	78		
6.3	64		
5	63		
3.35	61		
2	57		
1.18	53		
0.6	46		
0.425	41		
0.3	35		
0.212	29		
0.15	24		
0.063	20		

Sample Proportions	% dry mass
Very coarse	0
Gravel	43
Sand	38
Fines <0.063mm	20

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 49
Curvature Coefficient	

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: Soiltechnics Limited

Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY

Contact: Admin

Site Address: Manchester Communications Academy

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: STV5997

Job Number: 23-33882-1

Date Sampled: 15/05/2023

Date Received: 18/05/2023

Date Tested: 25/05/2023

Sampled By: Not Given

Test Results:

Laboratory Reference: 2679915

Hole No.: WS07

Sample Reference: WS071.702

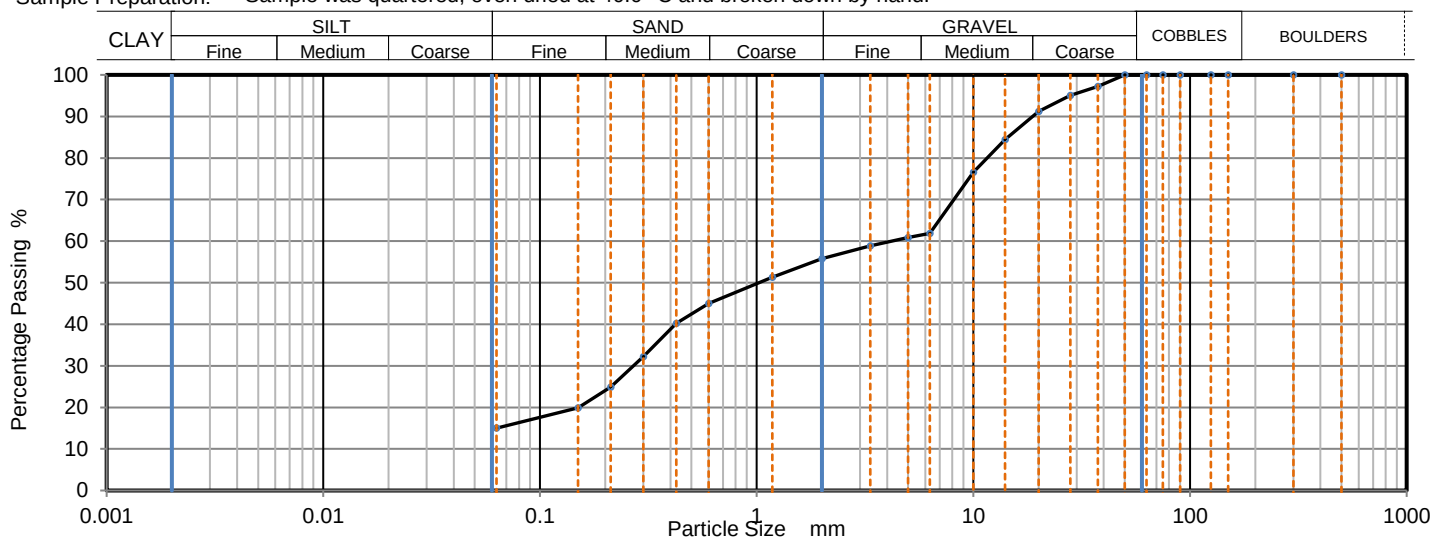
Sample Description: Dark grey sandy clayey GRAVEL with fragments of glass, slag

Sample Preparation: Sample was quartered, oven dried at 40.0 °C and broken down by hand.

Depth Top [m]: 1.70

Depth Base [m]: 3.00

Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	97		
28	95		
20	91		
14	84		
10	77		
6.3	62		
5	61		
3.35	59		
2	56		
1.18	51		
0.6	45		
0.425	40		
0.3	32		
0.212	25		
0.15	20		
0.063	16		

Sample Proportions	% dry mass
Very coarse	0
Gravel	44
Sand	40
Fines <0.063mm	16

Grading Analysis		
D100	mm	50
D60	mm	4.19
D30	mm	0.27
D10	mm	
Uniformity Coefficient		> 66
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Admin

Soiltechnics Limited
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Analytical Report Number : 23-33886

Project / Site name:	Manchester Communications Academy	Samples received on:	15/05/2023
Your job number:	STV5997	Samples instructed on/ Analysis started on:	16/05/2023
Your order number:	POR015433	Analysis completed by:	25/05/2023
Report Issue Number:	1	Report issued on:	29/05/2023
Samples Analysed:	3 soil samples		



Signed:

Anna Goc
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 23-33886
Project / Site name: Manchester Communications Academy
Your Order No: POR015433

Lab Sample Number				2679952	2679953	2679954
Sample Reference				WS01	WS04	WS06
Sample Number				WS010.801	WS040.501	WS061.002
Depth (m)				0.80	0.50-0.75	1.00-2.00
Date Sampled				12/05/2023	15/05/2023	17/05/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	29	17	27
Total mass of sample received	kg	0.001	NONE	0.6	0.6	0.6

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.9	7.9	7.2
Total Sulphate as SO4	%	0.005	MCERTS	0.124	0.2	0.237
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.062	0.29	0.064
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	61.8	292	64.4
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	3.4	5.2	5.9
Total Sulphur	%	0.005	MCERTS	0.139	0.085	0.196
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	20	74	21
Magnesium (leachate equivalent)	mg/l	2.5	NONE	9.8	37	11

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



Analytical Report Number : 23-33886
Project / Site name: Manchester Communications Academy

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2679952	WS01	WS010.801	0.8	Brown sand with gravel.
2679953	WS04	WS040.501	0.50-0.75	Brown clay and sand with gravel.
2679954	WS06	WS061.002	1.00-2.00	Brown loam and sand with gravel and vegetation.

Analytical Report Number : 23-33886

Project / Site name: Manchester Communications Academy

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

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

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

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

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

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



4041

**TEST CERTIFICATE****DETERMINATION OF LIQUID AND PLASTIC LIMITS**

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Manchester Communications Academy

Client Reference: STV5997
Job Number: 23-55709-1
Date Sampled: Not Given
Date Received: 11/09/2023
Date Tested: 19/09/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

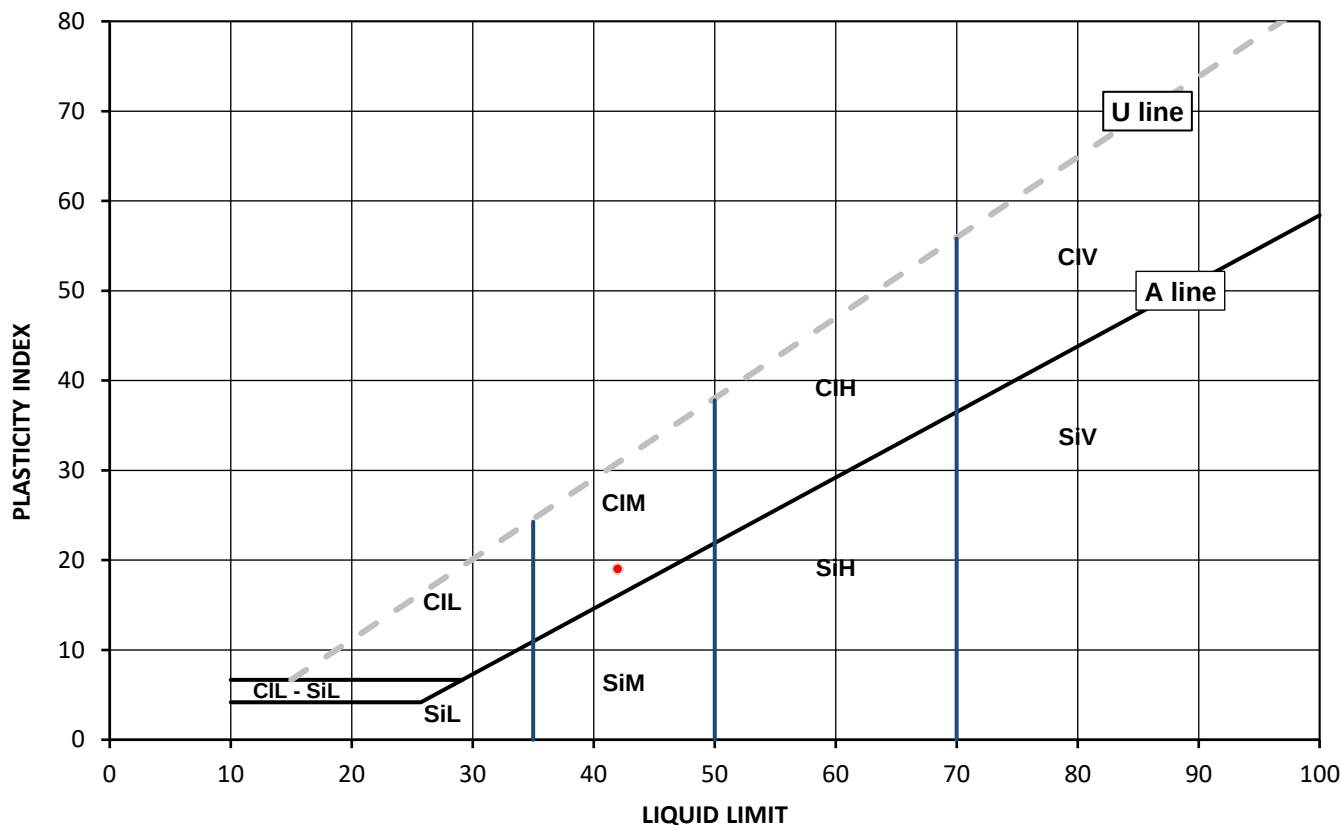
Test Results:

Laboratory Reference: 2806892
Hole No.: HP20
Sample Reference: Not Given
Sample Description: Brown gravelly sandy CLAY

Depth Top [m]: 0.90
Depth Base [m]: 1.00
Sample Type: D

Sample Preparation: Tested after washing to remove >425 µm

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
16	42	23	19	62



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L Low	50 to 70
	M Medium	exceeding 70
	H High	append to classification for organic material (eg CIHO)
	V Very high	
	O Organic	

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Environmental & Geotechnical Lab Production Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Manchester Communications Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: STV5997
Job Number: 23-55709-1
Date Sampled: Not Given
Date Received: 11/09/2023
Date Tested: 19/09/2023
Sampled By: Not Given

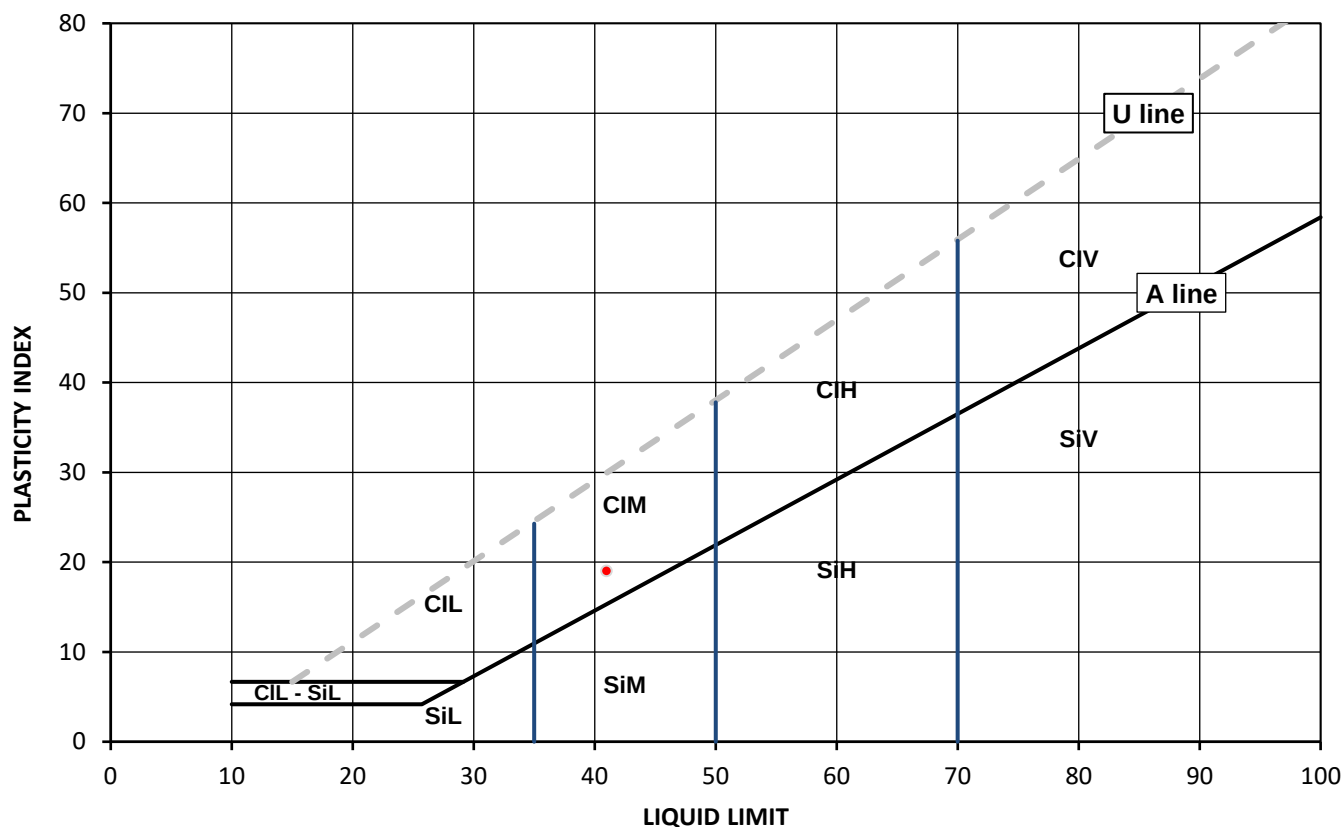
Test Results:

Laboratory Reference: 2806893
Hole No.: HP19
Sample Reference: Not Given
Sample Description: Brown gravelly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: 0.70
Sample Type: D

Sample Preparation: Tested after washing to remove >425 µm

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
13	41	22	19	36



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L Low	50 to 70
	M Medium	exceeding 70
	H High	append to classification for organic material (eg CIHO)
	V Very high	
	O Organic	

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Environmental & Geotechnical Lab Production Specialist
for and on behalf of i2 Analytical Ltd

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4041

**TEST CERTIFICATE****DETERMINATION OF LIQUID AND PLASTIC LIMITS**

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Soiltechnics Limited
 Client Address: Cedar Barn, White Lodge,
 Walgrave, Northampton,
 NN6 9PY
 Contact: Admin
 Site Address: Manchester Communications Academy

Client Reference: STV5997
 Job Number: 23-55709-1
 Date Sampled: Not Given
 Date Received: 11/09/2023
 Date Tested: 19/09/2023
 Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

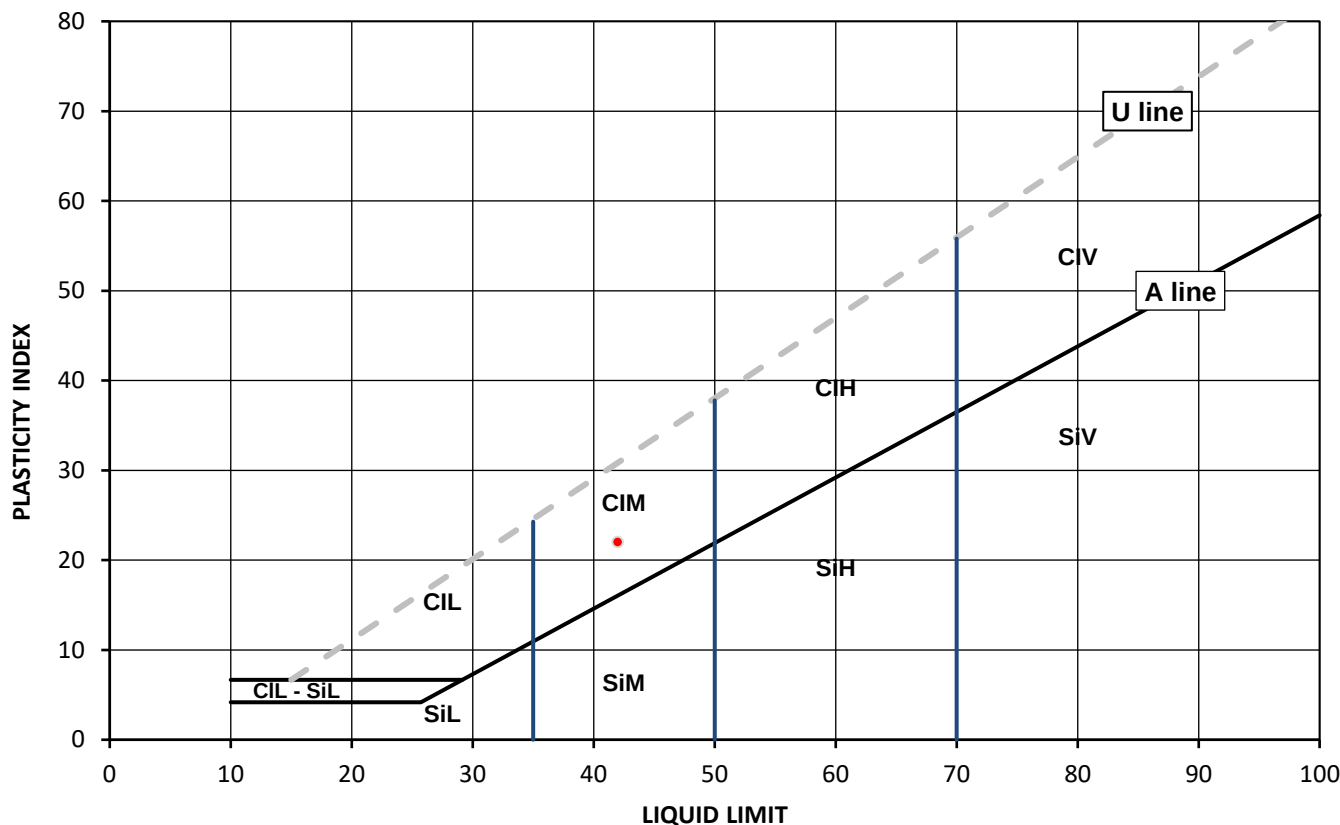
Test Results:

Laboratory Reference: 2806894
 Hole No.: HP17
 Sample Reference: Not Given
 Sample Description: Brown gravelly sandy CLAY

Depth Top [m]: 0.50
 Depth Base [m]: 0.60
 Sample Type: D

Sample Preparation: Tested after washing to remove >425 µm

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
18	42	20	22	59



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg CIHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
 PL Environmental & Geotechnical Lab Production Specialist
 for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



4041

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Manchester Communications Academy

Water Content by BS 1377-2:1990: Clause 3.2
Atterberg by BS 1377-2: 1990:
Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5

Client Reference: STV5997
Job Number: 23-55709-1
Date Sampled: Not Given
Date Received: 11/09/2023
Date Tested: 19/09/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W] %	Water Content BS EN ISO 17892-1 [W] %	Atterberg				Density			Total Porosity# %		
		Reference	Depth Top m	Depth Base m	Type					% Passing 425um %	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3			
2806892	HP20	Not Given	0.90	1.00	D	Brown gravelly sandy CLAY	Atterberg 1 Point	16		62	42	23	19						
2806893	HP19	Not Given	0.60	0.70	D	Brown gravelly sandy CLAY	Atterberg 1 Point	13		36	41	22	19						
2806894	HP17	Not Given	0.50	0.60	D	Brown gravelly sandy CLAY	Atterberg 1 Point	18		59	42	20	22						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Janoszek
PL Environmental & Geotechnical Lab Production Specialist
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



4041

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton,
NN6 9PY
Contact: Admin
Site Address: Manchester Communications Academy

Client Reference: STV5997
Job Number: 23-55709-1
Date Sampled: Not Given
Date Received: 11/09/2023
Date Tested: 19/09/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type							
2806892	HP20	Not Given	0.90	1.00	D	Brown gravelly sandy CLAY		16	Sample was quartered, oven dried at 106.6 °C			
2806893	HP19	Not Given	0.60	0.70	D	Brown gravelly sandy CLAY		13	Sample was quartered, oven dried at 106.6 °C			
2806894	HP17	Not Given	0.50	0.60	D	Brown gravelly sandy CLAY		18	Sample was quartered, oven dried at 106.6 °C			

Comments:

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Signed:

Monika Janoszek
PL Environmental & Geotechnical Lab Production Specialist
for and on behalf of i2 Analytical Ltd

**Admin**

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f: 01923 237404

e: reception@i2analytical.com

e: admin@soiltechnics.net

Analytical Report Number : 23-55710

Project / Site name:	Manchester Communications Academy	Samples received on:	11/09/2023
Your job number:	STV5997	Samples instructed on/ Analysis started on:	11/09/2023
Your order number:	POR016422	Analysis completed by:	25/09/2023
Report Issue Number:	1	Report issued on:	25/09/2023
Samples Analysed:	1 soil sample		

Signed: _____

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Analytical Report Number: 23-55710

Project / Site name: Manchester Communications Academy

Your Order No: POR016422

Lab Sample Number				2806895
Sample Reference				HP18
Sample Number				HP180.651
Depth (m)				0.65-0.95
Date Sampled				07/09/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	10
Total mass of sample received	kg	0.001	NONE	0.7

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.3
Total Sulphate as SO ₄	%	0.005	MCERTS	0.072
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.083
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	83
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	1.9
Total Sulphur	%	0.005	MCERTS	0.045
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	12
Magnesium (leachate equivalent)	mg/l	2.5	NONE	5.9

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



Analytical Report Number : 23-55710

Project / Site name: Manchester Communications Academy

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2806895	HP18	HP180.651	0.65-0.95	Brown loam and clay with gravel and vegetation.

Analytical Report Number : 23-55710

Project / Site name: Manchester Communications Academy

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

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

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

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

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

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

Appendix E Chemical Laboratory Test Certificates



Final Report

Report No.: 23-16178-1

Initial Date of Issue: 23-May-2023

Re-Issue Details:

Client Soiltechnics Limited

Client Address: Cedar Barn
White Lodge
Walgrave
Northampton
Northamptonshire
NN6 9PY

Contact(s): Admin

Project STV5997 Manchester Communications
Academy

Quotation No.: **Date Received:** 17-May-2023

Order No.: POR015432 **Date Instructed:** 17-May-2023

No. of Samples: 2

Turnaround (Wkdays): 5 **Results Due:** 23-May-2023

Date Approved: 23-May-2023

Approved By:

Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: STV5997 Manchester Communications Academy

Client: Soiltechnics Limited	Chemtest Job No.:				23-16178	23-16178
Quotation No.:	Chemtest Sample ID.:				1640025	1640026
Order No.: POR015432	Client Sample Ref.:				1	1
	Client Sample ID.:				TS010.001	WAC010.151
	Sample Location:				TS01	WAC01
	Sample Type:				SOIL	SOIL
	Top Depth (m):				0.00	0.15
	Bottom Depth (m):				0.15	1.00
	Date Sampled:				20-May-2023	19-May-2023
	Asbestos Lab:				NEW-ASB	NEW-ASB
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	22	13
pH	U	2010		4.0	8.1	8.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	0.86
Cyanide (Complex)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Arsenic	U	2455	mg/kg	0.5	6.8	34
Beryllium	U	2455	mg/kg	0.5	< 0.5	1.1
Cadmium	U	2455	mg/kg	0.10	0.20	0.52
Chromium	U	2455	mg/kg	0.5	12	27
Copper	U	2455	mg/kg	0.50	42	120
Mercury	U	2455	mg/kg	0.05	0.19	0.62
Nickel	U	2455	mg/kg	0.50	10	29
Lead	U	2455	mg/kg	0.50	130	400
Selenium	U	2455	mg/kg	0.25	0.38	2.3
Vanadium	U	2455	mg/kg	0.5	10	32
Zinc	U	2455	mg/kg	0.50	93	170
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
LOI	U	2610	%	0.10	7.5	5.4
Organic Matter	U	2625	%	0.40	9.1	6.7
TPH >C6-C10	N	2670	mg/kg	1.0	< 1.0	< 1.0
TPH >C10-C21	N	2670	mg/kg	1.0	27	52
TPH >C21-C40	N	2670	mg/kg	1.0	95	120
Total TPH >C6-C40	U	2670	mg/kg	10	120	180
Naphthalene	U	2800	mg/kg	0.10	0.17	0.19
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2800	mg/kg	0.10	0.15	0.46
Fluorene	U	2800	mg/kg	0.10	0.12	0.30
Phenanthrene	U	2800	mg/kg	0.10	1.1	3.0
Anthracene	U	2800	mg/kg	0.10	0.30	0.72
Fluoranthene	U	2800	mg/kg	0.10	2.2	4.2
Pyrene	U	2800	mg/kg	0.10	2.0	3.7

Results - Soil

Project: STV5997 Manchester Communications Academy

Client: Soiltechnics Limited	Chemtest Job No.:				23-16178	23-16178
Quotation No.:	Chemtest Sample ID.:				1640025	1640026
Order No.: POR015432	Client Sample Ref.:				1	1
	Client Sample ID.:				TS010.001	WAC010.151
	Sample Location:				TS01	WAC01
	Sample Type:				SOIL	SOIL
	Top Depth (m):				0.00	0.15
	Bottom Depth (m):				0.15	1.00
	Date Sampled:				20-May-2023	19-May-2023
	Asbestos Lab:				NEW-ASB	NEW-ASB
Determinand	Accred.	SOP	Units	LOD		
Benzo[a]anthracene	U	2800	mg/kg	0.10	1.1	1.9
Chrysene	U	2800	mg/kg	0.10	1.3	2.3
Benzo[b]fluoranthene	U	2800	mg/kg	0.10	1.7	2.6
Benzo[k]fluoranthene	U	2800	mg/kg	0.10	0.59	0.88
Benzo[a]pyrene	U	2800	mg/kg	0.10	1.3	1.9
Indeno(1,2,3-c,d)Pyrene	U	2800	mg/kg	0.10	0.99	1.3
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.19	0.29
Benzo[g,h,i]perylene	U	2800	mg/kg	0.10	0.89	1.3
Total Of 16 PAH's	N	2800	mg/kg	2.0	14	25
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 23-16181-1

Initial Date of Issue: 23-May-2023

Re-Issue Details:

Client Soiltechnics Limited

Client Address: Cedar Barn
White Lodge
Walgrave
Northampton
Northamptonshire
NN6 9PY

Contact(s): Admin

Project STV5997 Manchester Communications
Academy

Quotation No.: **Date Received:** 17-May-2023

Order No.: POR015432 **Date Instructed:** 17-May-2023

No. of Samples: 1

Turnaround (Wkdays): 5 **Results Due:** 23-May-2023

Date Approved: 23-May-2023

Approved By:

Details: Stuart Henderson, Technical
Manager

Results - 2 Stage WAC

Project: STV5997 Manchester Communications Academy

Chemtest Job No: 23-16181							Landfill Waste Acceptance Criteria			
Chemtest Sample ID: 1640033							Limits			
Sample Ref: 1							Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID: WAC010.151										
Sample Location: WAC01										
Top Depth(m): 0.15										
Bottom Depth(m): 1.00										
Sampling Date: 19-May-2023										
Determinand	SOP	Accred.	Units							
Total Organic Carbon	2625	M	%				2.6	3	5	6
Loss On Ignition	2610	M	%				5.1	--	--	10
Total BTEX	2760	M	mg/kg				< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg				< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg				120	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg				89	100	--	--
pH	2010	M					8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg				0.012	--	To evaluate	To evaluate
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg			
Arsenic	1455	U	0.0043	0.0042	0.0086	0.042	0.5	2	25	
Barium	1455	U	0.062	0.031	0.12	0.34	20	100	300	
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5	
Chromium	1455	U	0.0046	0.0013	0.0090	0.016	0.5	10	70	
Copper	1455	U	0.0097	0.0042	0.019	0.0097	2	50	100	
Mercury	1455	U	0.00007	< 0.00005	0.00013	0.00007	0.01	0.2	2	
Molybdenum	1455	U	0.061	0.0085	0.12	0.14	0.5	10	30	
Nickel	1455	U	0.0010	< 0.0005	0.0019	0.0010	0.4	10	40	
Lead	1455	U	0.0006	0.0007	0.0012	0.0068	0.5	10	50	
Antimony	1455	U	0.0085	0.0036	0.017	0.041	0.06	0.7	5	
Selenium	1455	U	0.0042	0.0023	0.0083	0.025	0.1	0.5	7	
Zinc	1455	U	0.004	< 0.003	0.008	0.004	4	50	200	
Chloride	1220	U	5.9	< 1.0	12	< 10	800	15000	25000	
Fluoride	1220	U	1.5	0.47	3.0	5.7	10	150	500	
Sulphate	1220	U	160	35	320	480	1000	20000	50000	
Total Dissolved Solids	1020	N	350	78	700	1100	4000	60000	100000	
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-	
Dissolved Organic Carbon	1610	U	9.8	2.8	< 50	< 50	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	13

Leachate Test Information	
Leachant volume 1st extract/l	0.324
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.174

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

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T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 23-30820-1

Initial Date of Issue: 27-Sep-2023

Re-Issue Details:

Client Soiltechnics Limited

Client Address: Cedar Barn
White Lodge
Walgrave
Northampton
Northamptonshire
NN6 9PY

Contact(s): Admin

Project STV5997 Manchester Communications
Academy

Quotation No.: **Date Received:** 14-Sep-2023

Order No.: POR016427 **Date Instructed:** 14-Sep-2023

No. of Samples: 1

Turnaround (Wkdays): 7 **Results Due:** 22-Sep-2023

Date Approved: 27-Sep-2023

Approved By:

Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: STV5997 Manchester Communications Academy

Client: Soiltechnics Limited	Chemtest Job No.:		23-30820		
Quotation No.:	Chemtest Sample ID.:		1702444		
Order No.: POR016427	Client Sample Ref.:		1		
	Client Sample ID.:		WAC020.001		
	Sample Location:		WAC02		
	Sample Type:		SOIL		
	Date Sampled:		07-Sep-2023		
	Asbestos Lab:		DURHAM		
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	11
TPH >C5-C6	N	2670	mg/kg	1.0	< 1.0
TPH >C6-C7	N	2670	mg/kg	1.0	< 1.0
TPH >C7-C8	N	2670	mg/kg	1.0	< 1.0
TPH >C8-C10	N	2670	mg/kg	1.0	< 1.0
TPH >C10-C12	N	2670	mg/kg	1.0	27
TPH >C12-C16	N	2670	mg/kg	1.0	110
TPH >C16-C21	N	2670	mg/kg	1.0	350
TPH >C21-C35	N	2670	mg/kg	1.0	700
Total TPH >C5-C35	N	2670	mg/kg	10	1200

Results - 2 Stage WAC

Project: STV5997 Manchester Communications Academy

Chemtest Job No: 23-30820							Landfill Waste Acceptance Criteria			
Chemtest Sample ID: 1702444							Limits			
Sample Ref: 1							Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID: WAC020.001										
Sample Location: WAC02										
Top Depth(m):										
Bottom Depth(m):										
Sampling Date: 07-Sep-2023										
Determinand	SOP	Accred.	Units							
Total Organic Carbon	2625	M	%				4.4	3	5	6
Loss On Ignition	2610	M	%				5.4	--	--	10
Total BTEX	2760	M	mg/kg				< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg				< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg				1300	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg				88	100	--	--
pH at 20°C	2010	M					8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0040	--	To evaluate	To evaluate			
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg			
Arsenic	1455	U	0.0070	0.0048	0.014	0.051	0.5	2	25	
Barium	1455	U	0.11	0.021	0.23	0.33	20	100	300	
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5	
Chromium	1455	U	0.0009	0.0009	0.0018	0.0089	0.5	10	70	
Copper	1455	U	0.0083	0.0020	0.017	0.011	2	50	100	
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2	
Molybdenum	1455	U	0.043	0.0035	0.086	0.090	0.5	10	30	
Nickel	1455	U	0.0015	< 0.0005	0.0029	0.0020	0.4	10	40	
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50	
Antimony	1455	U	0.022	0.0049	0.043	0.072	0.06	0.7	5	
Selenium	1455	U	0.0019	0.0023	0.0037	0.022	0.1	0.5	7	
Zinc	1455	U	0.010	0.022	0.019	0.20	4	50	200	
Chloride	1220	U	180	12	360	350	800	15000	25000	
Fluoride	1220	U	0.65	0.37	1.3	4.1	10	150	500	
Sulphate	1220	U	200	34	400	570	1000	20000	50000	
Total Dissolved Solids	1020	N	650	110	1300	1800	4000	60000	100000	
Phenol Index	1920	U	0.38	0.32	0.76	3.3	1	-	-	
Dissolved Organic Carbon	1610	U	13	4.7	< 50	59	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	11

Leachate Test Information	
Leachant volume 1st extract/l	0.328
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.239

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH at 20°C	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.

Test Methods

SOP	Title	Parameters included	Method summary
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

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SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
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I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 23-31128-1

Initial Date of Issue: 26-Sep-2023

Re-Issue Details:

Client Soiltechnics Limited

Client Address: Cedar Barn
White Lodge
Walgrave
Northampton
Northamptonshire
NN6 9PY

Contact(s): Admin

Project STV5997 Manchester Communications
Academy

Quotation No.: **Date Received:** 14-Sep-2023

Order No.: POR016427 **Date Instructed:** 18-Sep-2023

No. of Samples: 1

Turnaround (Wkdays): 7 **Results Due:** 26-Sep-2023

Date Approved: 26-Sep-2023

Approved By:

Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: STV5997 Manchester Communications Academy

Client: Soiltechnics Limited	Chemtest Job No.:				23-31128
Quotation No.:	Chemtest Sample ID.:				1703473
Order No.: POR016427	Client Sample Ref.:				1
	Client Sample ID.:				WAC020.001
	Sample Location:				WAC02
	Sample Type:				SOIL
	Date Sampled:				07-Sep-2023
	Asbestos Lab:				DURHAM
Determinand	Accred.	SOP	Units	LOD	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	13
Soil Colour	N	2040		N/A	Brown
Other Material	N	2040		N/A	Stones and Roots
Soil Texture	N	2040		N/A	Sand
pH	M	2010		4.0	7.7
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.78
Cyanide (Complex)	M	2300	mg/kg	0.50	1.5
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	1.5
Arsenic	M	2455	mg/kg	0.5	14
Beryllium	U	2455	mg/kg	0.5	0.7
Cadmium	M	2455	mg/kg	0.10	0.68
Chromium	M	2455	mg/kg	0.5	62
Copper	M	2455	mg/kg	0.50	83
Mercury	M	2455	mg/kg	0.05	0.37
Nickel	M	2455	mg/kg	0.50	17
Lead	M	2455	mg/kg	0.50	250
Selenium	M	2455	mg/kg	0.25	0.53
Vanadium	U	2455	mg/kg	0.5	20
Zinc	M	2455	mg/kg	0.50	170
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
LOI	M	2610	%	0.10	6.8
Organic Matter	M	2625	%	0.40	10
TPH >C5-C6	N	2670	mg/kg	1.0	< 1.0
TPH >C6-C7	N	2670	mg/kg	1.0	< 1.0
TPH >C7-C8	N	2670	mg/kg	1.0	< 1.0
TPH >C8-C10	N	2670	mg/kg	1.0	< 1.0
TPH >C10-C12	N	2670	mg/kg	1.0	2.7
TPH >C12-C16	N	2670	mg/kg	1.0	18
TPH >C16-C21	N	2670	mg/kg	1.0	68
TPH >C21-C35	N	2670	mg/kg	1.0	270
Total TPH >C5-C35	N	2670	mg/kg	10	360
Naphthalene	M	2800	mg/kg	0.10	0.87

Results - Soil

Project: STV5997 Manchester Communications Academy

Client: Soiltechnics Limited	Chemtest Job No.:		23-31128		
Quotation No.:	Chemtest Sample ID.:		1703473		
Order No.: POR016427	Client Sample Ref.:		1		
	Client Sample ID.:		WAC020.001		
	Sample Location:		WAC02		
	Sample Type:		SOIL		
	Date Sampled:		07-Sep-2023		
	Asbestos Lab:		DURHAM		
Determinand	Accred.	SOP	Units	LOD	
Acenaphthylene	N	2800	mg/kg	0.10	0.21
Acenaphthene	M	2800	mg/kg	0.10	1.3
Fluorene	M	2800	mg/kg	0.10	1.0
Phenanthrene	M	2800	mg/kg	0.10	11
Anthracene	M	2800	mg/kg	0.10	2.3
Fluoranthene	M	2800	mg/kg	0.10	14
Pyrene	M	2800	mg/kg	0.10	13
Benzo[a]anthracene	M	2800	mg/kg	0.10	5.9
Chrysene	M	2800	mg/kg	0.10	6.7
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	8.0
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	2.7
Benzo[a]pyrene	M	2800	mg/kg	0.10	7.2
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	4.5
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.89
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	4.3
Total Of 16 PAH's	N	2800	mg/kg	2.0	84
Total Phenols	M	2920	mg/kg	0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

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Appendix F Chemical Analysis Assessment

GQRA Screening

Assessments	Status	Date	Created by	Reviewed By
Acute human health risk - Soils	Not undertaken			
Chronic human health risk - Soils	Complete	28.06.23	CB	SCD
Chronic human health risk - Groundwater vapour	Not undertaken			
Controlled waters risk - Surface water	Not undertaken			
Controlled waters risk - Drinking water	Not undertaken			
Controlled waters - Free phase indicator	Not undertaken			
Phytotoxicity	Not undertaken			
Ecotoxicity	Not undertaken			

Key

Assessment	Abbr.	GQRA Source (in order of preference)	Last Update
All	NGA	No guideline value available	-
Acute human health risk - Soils	AGAC	Acute Generic Assessment Criteria (SoBRA)	April 2019
	sat.	Contaminant poses a low acute risk unless the soil saturation limit is exceeded and a free oil phase is present.	April 2019
	C4SL	Category 4 Screening Levels (DEFRA)	May 2021
Chronic human health risk - Soils	S4UL	Suitable 4 Use Levels (LQM)	August 2015
	ATK	Atrisk Soil Screening Values (Atkins)	June 2017
	CL:AIRE	Generic Assessment Criteria (CL:AIRE)	Jan 2010
Chronic human health risk - Groundwater vapour	GAC _{gwvap}	Generic Assessment Criteria for Assessing Vapour Risks from Volatile Contaminants in Groundwater (SoBRA)	April 2019
Controlled waters risk - Surface water	PNEC	Predicted no effect concentration. Derived from the Metals Bioavailability Assessment Tools (M-BAT) (UK TAG)	Nov. 2013 (Cu, Ni, Mn, Zn) March 2015 (Pb)
	AA-EQS	Environmental Quality Standards AA = Annual average (Environment Agency)	August 2021
	EA	Petroleum Hydrocarbons in Groundwater: Supplementary Guidance for Hydrogeological Risk Assessment (Environment Agency)	April 2009
	MAC-EQS	Environmental Quality Standards MAC = Maximum Allowable Concentration (Environment Agency)	August 2021
	UK DWS	National drinking water requirements (The Water Supply (Water Quality) Regulations 2018)	June 2018
Controlled waters risk - Drinking water	Int. DWS	Guidelines for Drinking Water Quality (World Health Organisation)	April 2017
	WHO	Petroleum Products in Drinking Water (World Health Organisation)	June 2008

GQRA Screening

Assessments	Status	Date	Created by	Reviewed By
Acute human health risk - Soils	Not undertaken			
Chronic human health risk - Soils	Complete	28.06.23	CB	SCD
Chronic human health risk - Groundwater vapour	Not undertaken			
Controlled waters risk - Surface water	Not undertaken			
Controlled waters risk - Drinking water	Not undertaken			
Controlled waters - Free phase indicator	Not undertaken			
Phytotoxicity	Not undertaken			
Ecotoxicity	Not undertaken			

Key

Assessment	Abbr.	GQRA Source (in order of preference)	Last Update
Controlled waters - Free phase indicator	USEPA	Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites (US EPA)	June 2015
	ST	Indicative value based on 80% of aqueous solubility limit, to a minimum of 10µg/l. (Soiltechnics)	July 2021
Phytotoxicity	BSI	BS 3882 - Specification for Topsoil (u = upper limit, l = lower limit for multipurpose topsoil) (British Standards Institute)	April 2015
	SSIA	Potentially Toxic Element. Sewage Sludge in Agriculture: Code of Practice (Environment Agency)	May 2018
Ecotoxicity	SSV	Soil Screening Values. Ecological Risk Assessment Framework. (Environment Agency)	Nov. 2017

Chronic human health risk (soils)

Scenario	
End user	Current and proposed site user
Receptor	Residential with homegrown produce
SOM	6.00%
GAC Preference	C4SLs over S4ULs
Unspeciated TPH GAC	Worst-case aliphatic/aromatic

Contaminant	Guideline source	Guideline value (mg/kg)	Max value (mg/kg)	Location	TS01
				Depth (m)	0.00 - 0.15
				Date	20/05/23
Inorganics - Metals					
Arsenic	C4SL	37	6.8		6.8
Beryllium	S4UL	1.7	<LoD		< 0.5
Boron	S4UL	290	<LoD		< 0.40
Cadmium	C4SL	22	0.2		0.2
Chromium (III)	S4UL	910	12		12
Chromium (VI)	C4SL	21	<LoD		< 0.50
Copper	S4UL	2400	42		42
Cyanide - Free	ATK	34	<LoD		< 0.50
Lead	C4SL	200	130		130
Mercury	S4UL	40	0.19		0.19
Nickel	S4UL	130	10		10
Selenium	S4UL	250	0.38		0.38
Vanadium	S4UL	410	10		10
Zinc	S4UL	3700	93		93
Inorganics - Asbestos					
Asbestos Type		N/A			-
Asbestos Screen		N/A			No Asbestos Detected
Inorganics - Soil Parameters					
Organic matter		N/A			9.1
Organics - PAH & Phenol					
Acenaphthene	S4UL	1100	0.15		0.15
Acenaphthylene	S4UL	920	<LoD		< 0.10
Anthracene	S4UL	11000	0.3		0.3
Benzo(a)anthracene	S4UL	13	1.1		1.1
Benzo(a)pyrene	C4SL	5	1.3		1.3
Benzo(b)fluoranthene	S4UL	3.7	1.7		1.7
Benzo(ghi)perylene	S4UL	350	0.89		0.89
Benzo(k)fluoranthene	S4UL	100	0.59		0.59
Chrysene	S4UL	27	1.3		1.3
Dibenz(a,h)anthracene	S4UL	0.3	0.19	0.19	
Fluoranthene	S4UL	890	2.2	2.2	
Fluorene	S4UL	860	0.12	0.12	
Indeno(1,2,3-cd)pyrene	S4UL	41	0.99	0.99	
Naphthalene	S4UL	13	0.17	0.17	
Phenanthrene	S4UL	440	1.1	1.1	

Chronic human health risk (soils)

Scenario	
End user	Current and proposed site user
Receptor	Residential with homegrown produce
SOM	6.00%
GAC Preference	C4SLs over S4ULs
Unspeciated TPH GAC	Worst-case aliphatic/aromatic

Contaminant	Guideline source	Guideline value	Max value	Location	TS01
				Depth (m)	0.00 - 0.15
Phenol	S4UL	380	<LoD		< 0.10
Pyrene	S4UL	2000	2		2
Organics - Banded TPH (unspeciated)					
EC >6-EC10 (unspeciated)	S4UL	150	<LoD		< 1.0
EC >10-EC21 (unspeciated)	S4UL	380	27		27
EC >21-EC40 (unspeciated)	S4UL	1700	95		95

Appendix G Waste Classification and WAC Assessments

Waste Classification Assessment Summary

Waste population	Made Ground
Hazard assessment	Non-hazardous waste
List of waste code	17-05-04
List of waste description	Soil and stones other than those mentioned in 17-05-03

Hazard property	Assessment
HP1 - Explosive	Not hazardous by HP1
HP2 - Oxidising	Not hazardous by HP2
HP3 - Flammable	Not hazardous by HP3
HP4 - Irritant	Not hazardous by HP4
HP5 - STOT & aspiration toxicity	Not hazardous by HP5
HP6 - Acute toxicity	Not hazardous by HP6
HP7 - Carcinogenic	Not hazardous by HP7
HP8 - Corrosive	Not hazardous by HP8
HP9 - Infectious	Not hazardous by HP9
HP10 - Toxic for reproduction	Not hazardous by HP10
HP11 - Mutagenic	Not hazardous by HP11
HP12 - Release of an acute toxic gas	Not hazardous by HP12
HP13 - Sensitising	Not hazardous by HP13
HP14 - Ecotoxic	Not hazardous by HP14

Waste classification

Overall assessment	
Waste population	Made Ground
Hazard assessment	Non-hazardous waste
List of Waste code	17-05-04
List of waste description	Soil and stones other than those mentioned in 17-05-03
Is the statistical approach non-parametric, method B utilized?	No
Moisture content correction factor	No correction Made

Asbestos assessment		
Query	Value	Assessment
Are bulk ACMs visually identifiable?	No	Non-hazardous
Have free fibres been detected?	No	Non-hazardous
What is the free fibre concentration (%)?	N/A	Non-hazardous

Flammability assessment	
Comment	Assessment
The waste is not considered flammable as it is a solid waste without a free draining liquid phase, and the TPH concentration and composition is not considered to present a likely flammable hazard.	Non-hazardous

Hydrocarbon assessment	
Query	Assessment
Is the origin of the oil contamination known?	Unknown oil
B(a)P : TPH ratio (%)	Not required
B(a)P marker assessment	Not required

pH assessment		
Query	Value	Assessment
Are all substances present in the waste known?	No	See pH assessment below
pH - Min	8.10	Non-hazardous
pH - Max	8.80	Non-hazardous

Oxidising assessment	
Comment	Assessment
Cr (VI) is the only compound with an oxidising hazard statement (H271). On review, the concentration is considered too low to present a viable oxidising hazard in a waste soil	Non-hazardous

Ecotoxic assessment			
Equation	Sum	Criteria	Assessment
WM3, Eq. 2	0.00%	25%	Non-hazardous
WM3 Eq. 3	0.00%	25%	Non-hazardous
WM3 Eq. 4	0.00%	25%	Non-hazardous

Compound hazard assessments

[illegible]

Waste acceptance

Parameter	Inert waste landfill	Stable non-reactive hazardous waste in a non-hazardous landfill cell (SNRHW)	Hazardous waste landfill	Location	WAC01
				Depth (m)	0.15 - 1.00
				Date	19/05/23
Parameters determined on the waste					
Total organic carbon	3	5	6		2.6
Loss on ignition			10		5.4
BTEX	6				< 0.010
PCBs (7 congeners)	1				< 0.10
Mineral oil	500				120
PAH (17 congeners)	100				89
pH		6			8.8
Acid neutralisation capacity (pH 6)		To be evaluated	To be evaluated		0.012
Limit values (mg kg ⁻¹) for compliance test using BN 12457-3 at L/S 10 l					
Arsenic	0.5	2	25		0.042
Barium	20	100	300		0.34
Cadmium	0.04	1	5		< 0.00011
Chromium (III)	0.5	10	70		0.016
Copper	2	50	100		0.0097
Mercury	0.01	0.2	2		0.00007
Molybdenum	0.5	10	30		0.14
Nickel	0.4	10	40		0.001
Lead	0.5	10	50		0.0068
Antimony	0.06	0.7	5		0.041
Selenium	0.1	0.5	7		0.025
Zinc	4	50	200		0.004
Chloride	800	15,000	25,000		< 10
Fluoride	10	150	500		5.7
Sulphate	1,000	20,000	50,000		480
Total dissolved solids	4,000	60,000	100,000		1100
Phenol	1				< 0.50
Dissolved organic carbon	500	800	1000		< 50
Classifications					
Waste classification					Non-hazardous
Landfill type					Inert

- Key Notes:**
- 1) The values for total dissolved solids (TDS) can be used alternatively to the values for sulphate and chloride.
- 2) Soils with TOC values over the limit value may still be accepted provided the DOC value falls are below it's respective limit value.
- 3) In a hazardous waste, either the TOC or LOI must be used.

Waste Classification Assessment Summary

Waste population	Made Ground (clay, sand and gravel) within area of proposed car park
Hazard assessment	Hazardous waste*
List of waste code	17-05-03*
List of waste description	Soil and stones containing hazardous substances

Hazard property	Assessment
HP1 - Explosive	Not hazardous by HP1
HP2 - Oxidising	Not hazardous by HP2
HP3 - Flammable	Not hazardous by HP3
HP4 - Irritant	Not hazardous by HP4
HP5 - STOT & aspiration toxicity	Not hazardous by HP5
HP6 - Acute toxicity	Not hazardous by HP6
HP7 - Carcinogenic	Hazardous by HP7
HP8 - Corrosive	Not hazardous by HP8
HP9 - Infectious	Not hazardous by HP9
HP10 - Toxic for reproduction	Not hazardous by HP10
HP11 - Mutagenic	Hazardous by HP11
HP12 - Release of an acute toxic gas	Not hazardous by HP12
HP13 - Sensitising	Not hazardous by HP13
HP14 - Ecotoxic	Not hazardous by HP14

Waste acceptance

Parameter	Inert waste landfill	Stable non-reactive hazardous waste in a non-hazardous landfill cell (SNRHW)	Hazardous waste landfill	Location	WAC02
				Depth (m)	0.00
				Date	07/09/23
Parameters determined on the waste					
Total organic carbon	3	5	6		4.4
Loss on ignition			10		6.8
BTEX	6				< 0.010
PCBs (7 congeners)	1				< 0.10
Mineral oil	500				1300
PAH (17 congeners)	100				88
pH		6			7.7
Acid neutralisation capacity (pH 6)		To be evaluated	To be evaluated		0.004
Acid neutralisation capacity (pH 4)		To be evaluated	To be evaluated		0.004
Limit values (mg kg ⁻¹) for compliance test using BN 12457-3 at L/S 10 l					
Arsenic	0.5	2	25		0.051
Barium	20	100	300		0.33
Cadmium	0.04	1	5		< 0.00011
Chromium (III)	0.5	10	70		0.0089
Copper	2	50	100		0.011
Mercury	0.01	0.2	2		< 0.00005
Molybdenum	0.5	10	30		0.09
Nickel	0.4	10	40		0.002
Lead	0.5	10	50		< 0.0005
Antimony	0.06	0.7	5		0.072
Selenium	0.1	0.5	7		0.022
Zinc	4	50	200		0.2
Chloride	800	15,000	25,000		350
Fluoride	10	150	500		4.1
Sulphate	1,000	20,000	50,000		570
Total dissolved solids	4,000	60,000	100,000		1800
Phenol	1				3.3
Dissolved organic carbon	500	800	1000		59
Classifications					
Waste classification					Hazardous
Landfill type					SNRHW

- Key Notes:**
- 1) The values for total dissolved solids (TDS) can be used alternatively to the values for sulphate and chloride.
- 2) Soils with TOC values over the limit value may still be accepted provided the DOC value falls are below it's respective limit value.
- 3) In a hazardous waste, either the TOC or LOI must be used.

Appendix H Coal Authority Consultants Report



The Coal
Authority

Consultants Coal Mining Report

Manchester Communication
Academy
2a Silchester Drive
Manchester
M40 8NT

Date of enquiry:	21 April 2023
Date enquiry received:	21 April 2023
Issue date:	21 April 2023

Our reference:	51003351157001
Your reference:	STV5997

Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

Soiltechnics Limited

Enquiry address

Manchester Communication Academy
2a Silchester Drive
Manchester
M40 8NT

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 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

None available.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is in an area where a notice to withdraw support was given in 1963.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

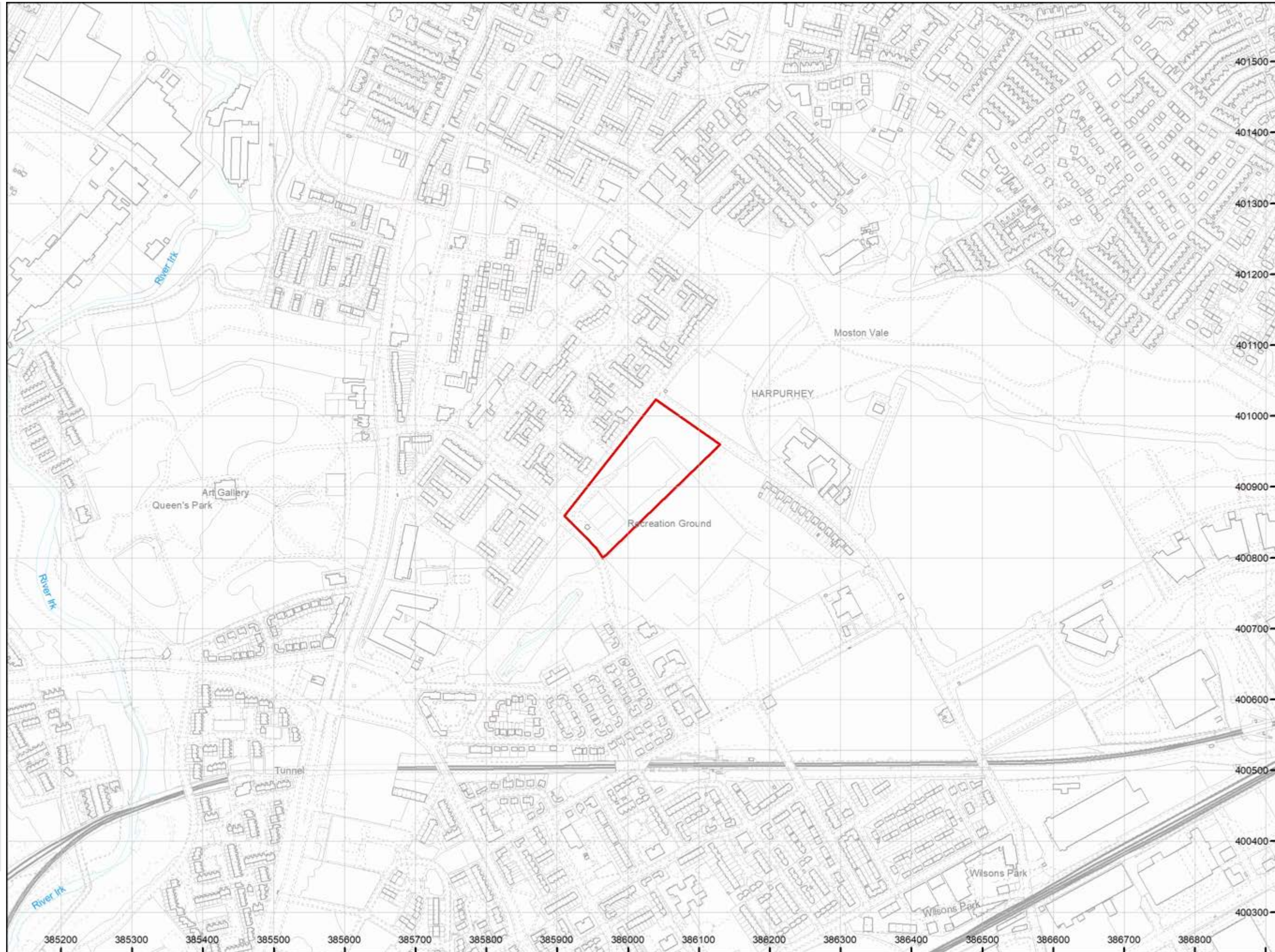
Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry
boundary shown 



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