



Main Investigation Report

at

**Padnell Grange, Padnell Road, Cowplain, Waterlooville,
Hampshire PO8 8ED**

for

**Stonebond Properties (Guildford) Limited and the Borrow
Foundation**

Reference: 22035/MIR Rev I.2

September 2025

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Project

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This is not a valid document for use in the design of the project unless it is titled Final in the document status box.

Current regulations and good practice were used in the preparation of this report. The recommendations given in this report must be reviewed by an appropriately qualified person at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.



Commission

This document comprises the Main Investigation Report (MIR) and incorporates the results, discussion, and conclusions to this intrusive works. General site data is recorded below:

Commission Record	
Client	Stonebond Properties (Guildford) Limited and the Borrow Foundation
Site Name	Padnell Grange, Padnell Road, Cowplain, Waterlooville, Hampshire PO8 8ED
Grid Reference	SU 699 111
Soils Limited Quotation Ref	Q29811 rev2 dated 4 th June 2025
Clients Purchase Order	ST0186-1560439 version 4, dated 10 th July 2025

The record of revision to this document is presented below:

Record Of Revisions		
Revision	Date	Reason
1.0	September 2025	First Issue to Client
1.1	November 2025	Updated with groundwater and ground gas monitoring data
1.2	March 2026	Updated

Note(s): The latest revised document supersedes all previous revisions of the MIR produced by Soils Limited.

Documents associated with this development that must be referred to are given below.

Record Of Associated Documents			
Reference	Type	Date	Creator
22035/DS Rev1.0	Desk Study	August 2025	Soils Limited
16362/SGRA	Ground Gas Risk Assessment Letter Report	October 2017	Soils Limited
16362/GIR	Phase II Ground Investigation Report	August 2017	Soils Limited
24143/C101	Coloured Site Layout	March 2026	OSP Architecture

Limitations and Disclaimers

The report was prepared solely for the brief described in our quotation and Section 1.1 of this report. We disclaim any responsibility to the Client and others in respect of any matters outside the scope of our engagement.

We have exercised all reasonable skill, care and diligence within the terms of the Contract with the Client, incorporation of our General Conditions of Contract of Business and taking into account the resources devoted to us by agreement with the Client.

This report is a snapshot of the site and conditions taken only at the time of our investigation works and described in our reporting. The ground is a product of continuing natural and artificial processes, and has variation by depth and location that cannot be determined absolutely. While a ground investigation will aim to understand and mitigate, risk cannot be eliminated.

Current regulations and good practice were used in the preparation of this report. Consideration of any subsequent changes to regulations or practice that may have occurred following issue of this report is the responsibility of the user.

If the term “competent person” is used in this report or any Soils Limited document, it means an engineering geologist or civil engineer with a minimum of three years post graduate experience in the understanding and application of the appropriate codes of practice.

Unless the site investigation works have been designed and specified in accordance with EC7, this report is not a Ground Investigation Report as defined by Eurocode 7.

Any reference to ground level relates to the site level at the time of the investigation, unless otherwise stated. Ground elevations and coordinates are only provided when this forms part of our engagement.

A survey of the possible presence or absence of invasive species including Japanese Knotweed is outside the scope of this investigation.

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Section I Introduction

1.1 Objective of Investigation

The Client commissioned Soils Limited to undertake an intrusive ground investigation and to prepare a Main Investigation Report to supply the Client and their designers with information regarding ground conditions, to assist in preparing a foundation scheme for development that was appropriate to the settings present on the site.

The investigation was to be made by means of in-situ testing and geotechnical laboratory testing undertaken on soil samples taken from the exploratory holes.

Soil samples were to be taken for chemical laboratory testing to enable recommendations for the safe redevelopment of the site and the protection of site workers, end-users and the public from any contamination identified as dictated by the Conceptual Site Model (CSM) in the Preliminary Investigation Report undertaken for the site by Soils Limited (Report ref: 22035/PIR, August 2025) and/or the Revised Conceptual Site Model presented in Appendix E.1.

1.2 Site Description

At the time of investigation, the site comprised the former residential property, Padnell Grange, set within extensive gardens. To the rear (south) was a disused courtyard, partly enclosed by dilapidated buildings, and a series of converted farm buildings currently occupied by an office of a charitable trust.

The site was characterised by predominantly open grassed land interspersed with mature trees and bounded by hedgerows and soft landscaping around the former house. Hardstanding included a tarmac access road and paved areas around the house and farm buildings, with a gravelled area located in the northwest.

Topography was gently undulating, sloping downwards towards the southeast by approximately 2–3°. The wider surroundings featured mature trees, shrubs, and extensive green vegetation, including landscaped gardens, public open space, and a golf course.

The site location plan is given in Figure 1.

An aerial photograph of the site and its close environs has been included in Figure 2.

1.3 Proposed Development

The proposal comprised demolition of the existing dilapidated farm buildings and ancillary buildings pertaining to the former house of Padnell Grange, and the erection of multiple buildings to create a housing estate with 90No. total residential dwellings, the majority of which to be semi-detached and short terrace blocks.

In compiling this report reliance was placed on drawing 24143/C101 dated March 2026, produced by OSP Architecture. The recommendations provided within this report are

made exclusively in relation to the scheme outlined above and must not be applied to any other scheme without further consultation with Soils Limited. Soils Limited must be notified about any change or deviation from the scheme outlined. Development plans provided by the Client are presented in Appendix H.

1.4 Anticipated Geology

The 1:50,000 BGS Geology map showed the main part of the site to be situated on the London Clay Formation bedrock, and on the northwest corner the site was situated on the Lambeth Group, which underlies the London Clay Formation. There was anticipated to be some Made Ground overlying part of the site as noted in the Landmark Report due to the previous site used as brick and tile works, clay mills, clay pit and kiln.

1.4.1 Made Ground

Made Ground comprises material that has been placed by man or spread by man. It can comprise demolition material from former structures on the site or imported material placed to raise levels. Its composition can be very variable both laterally and with depth and may contain putrescible matter and voids.

1.4.2 London Clay Formation

The London Clay Formation in the Hampshire region comprises silty and sandy clay, clayey and sandy silt, silty sand; sporadic claystones and thin beds of flint pebbles. The formation includes the Bognor Sand, Whitecliff Sand, Durley Sand, Portsmouth Sand and Nursling Sand Members. Crystals of gypsum (Selenite) are often found within the weathered part of the London Clay, and precautions against sulphate attack to concrete are sometimes required.

The lowest part of the London Clay Formation rests on the Reading Formation (Lambeth Group).

1.4.3 Lambeth Group

The Lambeth Group (formerly the Woolwich and Reading Beds) occurs in the London and Hampshire Basins, where it directly overlies the Chalk or Thanet Sand Formation, and is succeeded by the Harwich and London Clay Formations. The Lambeth Group comprises vertically and laterally variable sequences mainly of clay, some silty or sandy, with some sands and gravels, minor limestones and lignites and occasional sandstone and conglomerate.

The top of the Lambeth Group is marked by the eroded or interburrowed surface at the base of the overlying Thames Group. The uppermost part of the Lambeth Group can be the Reading Formation or the Woolwich Formation, depending on the local succession, or the Upnor Formation, depending on the depth of pre-Thames Group erosion. The Lambeth Group is overlain by sands, silts, clays or gravel beds of the Harwich Formation, depending on the local sequences, or gravelly sandy clays at the base of the London Clay Formation.

The base of the Lambeth Group is taken at the base of the Upnor Formation. In the Hampshire Basin and the west of the London Basin, the Lambeth Group overlies the

Chalk Group. In the centre and east of the London Basin it overlies the Thanet Formation, and in Suffolk the Ormesby Clay Member of the Lista Formation.

Section 2 Site Works

2.1 Proposed Project Works

The proposed intrusive investigation was designed to provide information on the ground conditions and to aid the design of foundations for the proposed residential development. The intended investigation, as outlined within the Soils Limited quotation (Q29811Rev2 dated 4th June 2025), was to comprise the following items:

The intrusive site investigation will comprise:

- CAT and genny scan of all exploratory holes prior to work
- 8No (up to) 5m deep windowless sampler boreholes
- 8No (up to) 5m deep dynamic probe DPSH
- 2No (up to) 20m deep cable percussion boreholes
- 4No ground gas monitoring wells in windowless sampler boreholes
- Geotechnical laboratory testing
- Chemical laboratory testing
- Groundwater and gas monitoring

2.1.1 Actual Project Works

The actual project works were undertaken on 10th July to 18th July 2025, with subsequent sample logging, laboratory testing, monitoring, and reporting. The actual works comprised:

- CAT and genny scan of all exploratory holes prior to work
- 8No 5m deep windowless sampler boreholes (WS101 to WS108)
- 8No 5m deep dynamic probe DPSH (DP101 to DP108)
- 2No 20m deep cable percussion boreholes (BH101 and BH102)
- 4No ground gas monitoring wells in windowless sampler boreholes (WS101, WS103, WS105 and WS108)
- Geotechnical laboratory testing
- Chemical laboratory testing
- Groundwater and gas monitoring (August to November 2025)

Four windowless sampler boreholes (WS101, WS103, WS105 and WS108) were backfilled with gravel and bentonite following the installation of monitoring wells.

Two cable percussion boreholes (BH101 and BH102) were backfilled with arisings and four windowless sampler boreholes (WS102, WS104, WS106 and WS107) were backfilled with gravel.

All exploratory hole locations have been presented in Figure 3.

Following completion of site works, soil samples were logged, sub-sampled and sent to

the laboratory for both contamination and geotechnical testing.

2.2 Ground Conditions

On 10th July to 18th July 2025, eight windowless sampler boreholes (WS101 to WS108) were drilled, using a Premier Compact 110 Series windowless sampler rig, to a depth of 5.00m below ground level (bgl) at locations selected by Soils Limited using a development plan provided by the Client.

A standpipe was installed within each of four windowless sampler boreholes (WS101, WS103, WS105 and WS108) to allow for continued monitoring of both groundwater and ground gas.

Eight super heavy dynamic probes, (DP101 to DP108) were driven prior and adjacent to their corresponding windowless sampler borehole to a depth of 5.00m bgl.

Two cable percussion boreholes (BH101 and BH102) were drilled, using a Dando rig, to a depth of 20.00m bgl at locations selected by Soils Limited using a development plan provided by the Client.

The maximum depths of exploratory holes have been included in Table 2.1.

Table 2.1 Final Depth of Exploratory Holes

Exploratory Hole	Depth (m bgl)	Exploratory Hole	Depth (m bgl)
WS/DPI01 ^w	5.00/5.00	WS/DPI06	5.00/5.00
WS/DPI02	5.00/5.00	WS/DPI07	5.00/5.00
WS/DPI03 ^w	5.00/5.00	WS/DPI08 ^w	5.00/5.00
WS/DPI04	5.00/5.00	BH101	20.00
WS/DPI05 ^w	5.00/5.00	BH102	20.00

Note(s): ^w - well installation. The depths given taken from the ground level adjacent to the exploratory hole at the time of investigation.

The soil conditions encountered were recorded and soil sampling commensurate with the purposes of the investigation was carried out. The depths given on the exploratory hole logs and quoted in this report were measured from ground level.

The soils encountered from immediately below ground surface have been described in the following manner. Where the soil incorporated an organic content such as either decomposing leaf litter or roots or has been identified as part of the in-situ weathering profile, it has been described as Topsoil both on the logs and within this report. Where man has clearly either placed the soil, or the composition altered, with say greater than an estimated 5% of a non-natural constituent, it has been referred to as Made Ground both on the log and within this report.

For more complete information about the soils encountered within the general area of the site reference must be made to the detailed records given within Appendix B, but for the

purposes of discussion, the succession of conditions encountered in the exploratory holes in descending order can be summarised as:

Made Ground/Topsoil (MG/TS)
Lambeth Group (LMBE)
London Clay Formation (Not Encountered)

The ground conditions encountered in the exploratory holes are summarised in Table 2.2.

Table 2.2 Ground Conditions

Strata	Depth Encountered (m bgl)		Typical Thickness (m)	Typical Description
	Top	Bottom		
TS	G.L.	0.15-1.00	0.50	Soft reddish brown mottled light grey slightly sandy, slightly silty CLAY. Sand is fine. Occasional rootlets and roots.
MG	G.L.	0.10-1.00	0.50	Soft dark brown slightly sandy, slightly gravelly SILT. Sand is fine to medium. Gravel is angular to subangular, fine to coarse flint with fragments of chalk, brick, ceramic and clinker.
LMBE	0.10-1.00	5.00 ^{1,2} – 20.00 ^{1,2}	Not Proven ³	Interbedded cohesive and granular soils: Cohesive soils: Firm to very stiff, red, grey, and yellowish brown mottled sandy silty fissured/desiccated CLAY. Sand is fine to medium and features in frequent lenses and inclusions. Gravel is angular to well-rounded, fine to coarse flint. Occasional to frequent rootlets Granular soils: Light yellowish brown, brown slightly gravelly silty/ clayey fine to coarse SAND. Occasional clay lenses.

Note(s): ¹ Final depth of exploratory hole. ² Base of strata not encountered. The depths given in this table are taken from the ground level on-site at the time of investigation.

2.3 Ground Conditions Encountered in Exploratory Holes

The ground conditions encountered in exploratory holes have been described below in descending order. The engineering logs are presented in Appendix B.1.

2.3.1 Made Ground and Topsoil

Soils described as Made Ground were encountered in nine out of the ten exploratory holes from ground level to depths ranging between 0.10m (BH102) and 1.00m bgl (BH101).

The Made Ground typically comprised soft dark brown slightly sandy, slightly gravelly SILT. Sand is fine to medium. Gravel is angular to subangular, fine to coarse flint with fragments of chalk, brick, ceramic and clinker.

Soils described as Topsoil were encountered in one exploratory hole (WS107) from ground level to a depth of 0.15m bgl.

The Topsoil comprised soft reddish brown mottled light grey slightly sandy, slightly silty CLAY. Sand is fine. Occasional rootlets and roots.

The established depth of Made Ground and Topsoil found at each exploratory hole location has been included in Table 2.3.

Table 2.3 Established Depth of Made Ground/Topsoil

Exploratory Hole	Strata	Depth (m bgl)	Exploratory Hole	Strata	Depth (m bgl)
WS/DPI01	MG	0.30	WS/DPI06	MG	0.20
WS/DPI02	MG	0.45	WS/DPI07	TS	0.15
WS/DPI03	MG	0.50	WS/DPI08	MG	0.30
WS/DPI04	MG	1.00	BH101	TS	1.00
WS/DPI05	MG	0.40	BH102	MG	0.10

2.3.2 Lambeth Group

Soils described as Lambeth Group were encountered in all exploratory holes from underneath the Made Ground/Topsoil to a maximum depth of 20.00m bgl.

The Lambeth Group was found in both cohesive and granular forms and varied in composition across the site with layers of cohesive and granular material found to be inconsistent in their order and thickness.

The cohesive soils typically comprised firm to very stiff, red, grey, and yellowish brown mottled sandy silty fissured/desiccated CLAY. Sand is fine to medium and features in frequent lenses and inclusions. Gravel is angular to well-rounded, fine to coarse flint. Occasional to frequent rootlets.

The granular soils typically comprised light yellowish brown, brown slightly gravelly silty/clayey fine to coarse SAND. Sand is fine to medium. Occasional clay lenses.

The established depth of Lambeth Group found at each exploratory hole location has been included in Table 2.4.

Table 2.4 Established Depth of Lambeth Group

Exploratory Hole	Depth (m bgl)	Exploratory Hole	Depth (m bgl)
WS/DPI01	5.00/5.00	WS/DPI06	5.00/5.00
WS/DPI02	5.00/5.00	WS/DPI07	5.00/5.00
WS/DPI03	5.00/5.00	WS/DPI08	5.00/5.00
WS/DPI04	5.00/5.00	BH101	20.00
WS/DPI05	5.00/5.00	BH102	20.00

Note(s): ¹ Final depth of exploratory hole.

2.4 Roots

Roots and traces of relict roots were encountered in all exploratory holes at depths

ranging between 0.50m and 4.70m bgl, as detailed in Table 2.5.

Table 2.5 Established Depth of Root Penetration

Exploratory Hole	Depth (m bgl)	Exploratory Hole	Depth (m bgl)
WS/DPI01	2.50 ¹	WS/DPI06	1.00
WS/DPI02	1.70	WS/DPI07	2.20
WS/DPI03	1.70	WS/DPI08	0.50
WS/DPI04	1.00	BH101	1.90
WS/DPI05	4.00 ²	BH102	0.70

Note(s): ¹ Traces of relict root patterns only observed to 4.00m bgl. ² Traces of root patterns to 4.70m bgl

Roots may be found to greater depth at other locations on the site particularly close to trees and/or trees that have been removed both within the site and its close environs.

It must be emphasised that the probability of determining the maximum depth of roots from a narrow diameter borehole is low. A direct observation such as from within a trial pit is necessary to gain a better indication of the maximum root depth.

A review of Google Earth™ historic images of the site for the last 20 years showed that there was no significant change in vegetation from that noted above.

2.5 Groundwater

No groundwater was encountered within all exploratory holes.

Changes in groundwater level occur for reasons including seasonal effects and variations in drainage. The investigation was conducted in July (2025), when groundwater levels should be falling from their annual maximum (highest) elevation, which typically occurs around March to the annual minimum (lowest) which typically occurs around September.

Further groundwater monitoring was conducted within the standpipes following completion of site works and six occasions (August to November 2025) of groundwater monitoring were completed.

The Lambeth Group was classed as a Secondary Bedrock Aquifer and could support shallow groundwater. Groundwater Source Protection Zones were recorded on site associated with the sub-surface chalk: Inner Zone1c (Inner protection Zone) and Zone III (Total Catchment).

Topography was gently undulating, sloping downwards towards the southeast by approximately 2–3°. The nearest surface water features circa 73m E, which was unnamed stream.

Further groundwater monitoring was conducted within the standpipes following completion of site works and has been presented in Table 2.6.

Table 2.6 Groundwater Monitoring

Exploratory Hole	Well Depth (m bgl)	Depth to Water (m bgl)					
		14/8/25	3/9/25	12/9/25	10/10/25	23/10/25 ¹	6/11/25
WS101	5.00	DRY	DRY	DRY	1.40	0.24	0.20
WS103	5.00	2.48	1.90	1.95	2.30	1.51	1.69
WS105	5.00	3.81	3.90	3.92	4.10	1.56	3.86
WS108	5.00	2.01	2.00	2.00	2.20	2.12	2.00

Note: ¹On October 23, 2025, the UK experienced heavy rain as part of Storm Benjamin, which brought significant rainfall across southern and eastern England and eastern Scotland. The storm resulted in 40mm of rainfall on that day. ² The initial groundwater recorded before bailed out water to 1.1m bgl for gas monitoring

Groundwater monitoring between August and November 2025 indicated an overall rising trend across the site, with notable variability between locations. Generally, the elevation at WS101 estimated from Google Earth TM was at 65m bgl, WS105 was at 60m bgl. WS101 was located at the highest point among all wells and WS105 the lowest point.

Section 3 Geotechnical In-Situ and Laboratory Testing

3.1 Standard Penetration Tests

Standard Penetration Tests (SPTs) were undertaken in BH101 and BH102. The results were interpreted based on the classifications outlined in Appendix C.1, Table C.1.1 to Table C.1.2.

Table 3.1 Hammer Efficiency

SPT Hammer Ref	Energy Ratio Er (%)
SED8	74

Table 3.2 Standard Penetration Tests (SPT) Interpretation

Strata	Depth Range (m bgl)	N60 Range	Soil Classification
LMBE	1.50-20.00	7-50	Low to very high ($C_u = 35 - 250\text{kPa}$)

A full interpretation of the SPT results, are outlined in Appendix C.2, Table C.2.1. The trend of the strength typically increases with depth.

3.2 Dynamic Probe Tests

The results were converted to equivalent SPT “N60” values based on dynamic energy using commercial computer software (Geostru). Interpretation interpreted based on the classifications outlined in Appendix C.1, Table C.1.1 to Table C.1.2.

Table 3.3 Hammer Efficiency

Rig Reference	Energy Ratio Er (%)
Premier 3	65.5

Table 3.4 Inferred SPT Interpretation

Strata	Depth Range (m bgl)	Inferred N60 Range	Soil Classification
LMBE(c)	0.20-5.00	0-56	Extremely low to very high ($C_u = <10 - 280\text{kPa}$)
LMBE(g)		9->50	Loose to very dense

Note(s): c – Cohesive soils; g – granular soils; SPT “N60” values presented have been corrected in accordance with BS EN 22476 Part 3

A full interpretation of the DPSH tests, are outlined in Appendix C.2, Table C.2.2. The trend of the strength and relative density typically increases with depth.

3.3 Atterberg Limit Tests

Atterberg Limit tests were performed on eleven samples from the Lambeth Group. The results were classified in accordance with BRE Digest 240 and NHBC Standards Chapter 4.2.

Table 3.5 Atterberg Limit Results Classification

Strata	Depth (m bgl)	VCP	
		NHBC	BRE 240
LMBE	0.70-9.00	Low to high	Low to high

Details are given in Table C.2.3, Appendix C.2 and the laboratory report in Appendix C.3.

3.4 Particle Size Distribution Tests

Particle Size Distribution (PSD) tests were performed on three samples from the Lambeth Group.

Table 3.6 Particle Size Distribution Classification

Strata	Depth (m bgl)	VCP	
		NHBC	BRE 240
LMBE	1.20-2.40	No	Yes

Note that a cohesive soil is only classified as having a volume change potential if it is also plastic and an Atterberg Limit test can be conducted on the strata.

A full interpretation of the PSD tests, are outlined in Table C.2.4, Appendix C.2 and the laboratory report in Appendix C.3.

3.5 Sulphate and pH Tests

Eight samples from the Lambeth Group underwent Water soluble sulphate (2:1) and pH testing in accordance with Building Research Establishment Special Digest 1, 2005, 'Concrete in Aggressive Ground'.

Table 3.7 Sulphate and pH Test Results

Strata	Depth (m bgl)	Sulphate Concentration (mg/l)	pH
LMBE	0.70-14.00	<10-17	7.0-8.0

The significance of the sulphate and pH Test results are discussed in Section 5.2 and the laboratory report in Appendix C.3.

Section 4 Engineering Appraisal

4.1 Established Ground Conditions

An engineering appraisal of the soil types encountered during the site investigation and likely to be encountered during the redevelopment of this site is presented. Soil descriptions are based on analysis of disturbed samples taken from the exploratory holes.

4.1.1 Made Ground and Topsoil

Soils described as Made Ground were encountered in nine out of the ten exploratory holes from ground level to depths ranging between 0.10m (BH102) and 1.00m bgl (BH101).

Soils described as Topsoil were encountered in one exploratory hole (WS107) from ground level to a depth of 0.15m bgl.

Foundations must not be placed on non-engineered fill unless such use can be justified based on a thorough ground investigation and detailed design. Foundations must be taken through any Topsoil and/or Made Ground and either into, or onto a suitable underlying natural stratum of adequate bearing characteristics.

4.1.2 Lambeth Group

Soils described as Lambeth Group were encountered underlying the Made Ground / Topsoil to a maximum depth of 20.00m bgl.

The Lambeth Group was found in both cohesive and granular forms and varied in composition across the site with layers of cohesive and granular material found to be inconsistent in their order and thickness.

The cohesive soils typically comprised firm to very stiff, red, grey, and yellowish brown mottled sandy silty fissured CLAY. Sand is fine to medium and features in frequent lenses and inclusions. Gravel is angular to well-rounded, fine to coarse flint. Occasional to frequent rootlets.

The granular soils typically comprised light yellowish brown, brown slightly gravelly silty/clayey fine to coarse SAND. Sand is fine to medium. Occasional clay lenses.

Soils of the Lambeth Group are granular soils and overconsolidated cohesive soils and as such are expected to display moderate bearing capacities with moderate settlement characteristics. The soils of the Lambeth Group were considered a suitable founding stratum for the proposed development.

4.1.3 Guidance on Shrinkable Soils

The ground conditions were established as cohesive soils of the bedrock of the Lambeth Group.

The volume change potential was established and presented in Table 4.1.

Table 4.1 Established Volume Change Potential by Strata

Strata	Volume Change Potential		Established Lower Boundary (m bgl)
	BRE	NHBC	
LMBE (c)	High	High	Not Proven
LMBE (g)	Yes	No	Not Proven

The Lambeth soil mass is predominantly cohesive and therefore, must be considered to have **high** volume change potential with foundations designed accordingly.

4.1.4 Groundwater

No groundwater was encountered within all exploratory holes. With 6No of groundwater monitoring visits to collect data from 4No of boreholes showed that the groundwater trend was generally increasing from August to November 2025.

Section 5 Foundation Scheme

5.1 Foundation Recommendations

Foundations **must not** be constructed within any Made Ground/Topsoil due to the likely variability and potential for large load induced settlements both total and differential.

Roots and traces of relict roots were encountered in all exploratory holes at depths ranging between 0.50m and 4.70m bgl. If roots are encountered during the construction phase foundations **must not be placed within any live root penetrated or desiccated cohesive soils or those with a volume change potential**. Should the foundation excavations reveal such materials, the excavations **must** be extended to greater depth to bypass these unsuitable soils. Excavations must be checked by a suitable person prior to concrete being poured.

Shallow foundations were identified as suitable for the proposed low-rise semi-detached and short-terrace blocks, based on the structural and geotechnical requirements. However, due to the high volume-change potential of the natural soils and the presence of live roots to a depth of 4.7 m bgl, piled foundations are recommended for the apartment buildings to accommodate the anticipated loads and ground conditions. If significant deep roots are encountered, foundations should be deepened accordingly, and piled solutions adopted.

5.1.1 Shallow Foundations into the Lambeth Group

Based on a 5.00 by 0.75m strip foundation, using commercial software Table 5.1 shows the calculated bearing values and anticipated settlement characteristics. There were 3 No of visits at WS101 recorded groundwater level between 0.20 and 1.40m bgl, which could impact the use of shallow foundation. Consideration should be given to undertaking the development during summer months and/or pre-construction check by trial pits nearby to determine the groundwater levels at the time.

Table 5.1 Allowable Bearing Capacities in the Lambeth Group

Depth (m bgl)	Size (m)	Bearing Capacity (kPa)	Anticipated Settlement (mm)
1.20 ¹	5.00 x 0.75	75	25
1.50		100	25

Note(s): ¹ locally deepened, there was a zero-blow counted noted at WS102 at 1.10m bgl and if any deep roots are identified during site formation

All foundation formations must be examined, recorded, and signed off by a competent person.

Care must be exercised where foundations pass over soils of different engineering properties or different soil types to minimise the potential effects of differential settlements. Reinforced foundations are recommended due to the interbedded and variable nature of the soils.

For the allowable bearing value given above, settlements should not exceed the

presented values, provided that excavation bases are carefully bottomed out and any soft spots removed, and blinded or concreted as soon after excavation as possible and kept dry.

Foundations must not be constructed over former structures and other hard spots. The foundations design must be suitable for the conditions present at the site.

The anticipated settlement includes both elastic settlement and long-term drained settlement (in the case of cohesive soils).

Anticipated settlements may be taken as proportional to the bearing capacity adopted (for the same configuration of foundation), therefore if the bearing value is halved the anticipated settlement will halve.

All loose material, soft spots and Made Ground must be removed from the base of the excavations. Failure to do so could result in increased settlements.

It has been assumed that the foundations to any existing structures have been grubbed out. Where foundations have been grubbed out the new foundation must be taken through any backfill material into suitable natural ground as outlined in this report.

5.1.2 Piled Foundations

Piled foundations must be taken through any Made Ground into suitable strength soils of the Lambeth Group.

The construction of a piled foundation is a specialist job with the actual pile working load depending on the pile type and installation method. Prior to finalising the foundation design the advice from a reputable contractor who is familiar with the ground and groundwater conditions present at the site must be sought.

The vertical load capacities are provided for varying diameters and lengths of bored piles taken into the Lambeth Group, based on in-situ tests and must only be used for preliminary design purposes.

A factor of safety of 3 was applied to the characteristic line derived from testing undertaken, for both the shaft and base load capacities.

The bearing values given in Appendix D.1., are applicable to single vertically loaded piles. Where piles are to be constructed in groups the bearing value of each individual pile should be reduced by a factor of about 0.8 and a calculation made to check the factor of safety against block failure.

From ground level the upper 3m of the pile shaft has been ignored in the preliminary pile design given.

To prevent necking of the green concrete, temporary casing may be required where the pile passes through the Made Ground or Lambeth Group and below the groundwater table. To achieve the full bearing value a pile should penetrate the bearing stratum by at least five times the pile diameter.

No allowance has been made for negative skin friction that could be generated where piles pass through Made Ground and any very soft cohesive and / or organic soils deposits underlying the site. The negative skin friction must be applied to the pile working load and must not be factored.

5.2 Subsurface Concrete

The sulphate and pH tests carried out in accordance with BRE Special Digest 1, 2005, 'Concrete in Aggressive Ground', established the site concrete classifications for each stratum as presented in Table 5.2.

Table 5.2 Concrete Classification

Stratum	Design Sulphate Class	ACEC Class
LMBE	DS-I	AC-Is

Concrete to be placed in contact with soil or groundwater must be designed in accordance with the recommendations of Building Research Establishment Special Digest 1 2005, '*Concrete in Aggressive Ground*' taking into account any possible exposure of potentially pyrite bearing natural ground and the pH of the soils.

5.3 Excavations

Shallow excavations in the Made Ground/Topsoil are likely to be marginally stable in the short term at best.

Deeper excavations taken into the Lambeth Group are likely to be unstable and require support. Unsupported earth faces formed during excavation may be liable to collapse without warning and suitable safety precautions must therefore be taken to ensure that such earth faces are adequately supported or battered back to a safe angle of repose.

Excavations beneath the groundwater table are likely to be unstable and dewatering of foundation trenches may be necessary.

Section 6 Determination of Chemical Analysis

6.1 Site Characterisation and Revised Conceptual Site Model

The Preliminary Investigation Report undertaken by Soils Limited (report ref: 22035/PIR dated August 2025) identified a very low to moderate/low risk of ground contamination from previous usage of the site and offsite sources.

Soils described as Made Ground were encountered in nine out of the ten exploratory holes from ground level to depths ranging between 0.10m (BH102) and 1.00m bgl (BH101).

The Made Ground typically comprised soft dark brown slightly sandy, slightly gravelly SILT. Sand is fine to medium. Gravel is angular to subangular, fine to coarse flint with fragments of chalk, brick, ceramic and clinker.

Potential hydrocarbon odours were identified in WS103 at depth of 1.30-2.80m bgl, this findings

6.2 Soil Sampling

Exploratory hole locations were established to provide an overview of ground conditions across the site in relation to the proposed construction, together with enabling the collection of samples to enable chemical characterisation of the underlying strata.

Representative samples for potential environmental testing were obtained from the exploratory holes at depths of between 0.10m to 2.40m allow appropriate representation of the materials encountered, with additional samples to be obtained, if necessary, where there was visual or olfactory evidence of contamination.

Unless otherwise stated, analytical testing was based initially on a screening suite of commonly identified inorganic and organic contaminants, taking into account the prevailing site conditions and the findings of the initial conceptual site model.

6.3 Determination of Chemical Analysis

The driver for determination of the analysis suite was the information obtained from the Preliminary Investigation Report and this intrusive investigation.

The chemical analyses were carried out on four samples of Made Ground and three samples of the Lambeth Group. The nature of the analyses is detailed in Table 6.1.

Table 6.1 Chemical Analyses Suites - Soil

No. of Tests		Determinants
MG	LMBE	
4	3	Metal suites: Arsenic, Boron (Water Soluble), Cadmium, Chromium (total & hexavalent), Copper, Lead, Mercury, Nickel, Selenium, Vanadium, Zinc
4	3	Organic Matter

No. of Tests		Determinants
MG	LMBE	
4	3	pH
4	3	Polycyclic aromatic hydrocarbons (PAH) – (EPA 16)
4	3	Phenols – total monohydric
2	3	Total petroleum hydrocarbons (TPH) – CWG banding
2	2	BTEX and MTBE
2	2	Cyanide total & free
2	2	Polychlorinated biphenyls (PCB) – 7 Congeners
1	0	Waste acceptance criteria (WAC)
4	3	Asbestos screening

The soil testing was carried out in compliance with the MCERTS performance standard, and the results are shown in Appendix E.2, test report 25-07148.1.

Section 7 Qualitative Risk Assessment

7.1 Assessment Criteria

The assessment criteria used to determine risks to human health are derived and explained within Appendix E.3.

7.2 Representative Contamination Criteria - Soil

In compiling this report reliance was placed on drawing SK03 / SK05 dated Feb 2025, produced by OSP Architecture. The recommendations provided within this report are made exclusively in relation to the scheme outlined above and must not be applied to any other scheme without further consultation with Soils Limited. Soils Limited must be notified about any change or deviation from the scheme outlined Development plans provided by the Client are presented in Appendix H.

Based on the proposed development, the results of the chemical analysis have been compared against generic assessment criteria (GAC) for a '**Residential with home grown produce**' end use, as presented in SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination December 2014 (C4SL), derived for the protection of human health. Where this document has not published screening values for determinants, GACs derived for the same end use have been adopted from the following published guidance; DEFRA Soil Guideline Values (SGV) and LQM/CIEH/Suitable 4 Use Level (S4UL).

To assess the potential toxicity of organic determinants (Petroleum Hydrocarbons and Polyaromatic Hydrocarbons) to the human health, soils samples were analysed for Soil Organic Matter (SOM). The selected samples analysed recorded, SOM values of between 0.7% and 5.4%. For each soil sample tested, the resultant SOM allowed for the correct comparison to be made with the appropriate guideline value for each organic determinant analysed.

7.2.1 Risk Assessment – Made Ground

Table 7.1 outlines the samples that have exceeded their relevant assessment criteria. The full laboratory report is presented in Appendix E.2.

Table 7.1 Summary of GAC Exceedances – Made Ground

Location	Depth (m bgl)	Contaminant	Concentration	Guidance Level
WS108	0.20	Lead	376	210
WS102	0.10	Benzo(a)anthracene	18.9	11
		Benzo(b)fluoranthene	18.3	3.3
		Benzo(a)pyrene	15.3	5
		Di-benzo(a,h)anthracene	1.81	0.28
WS103	0.20	Benzo(a)anthracene	53.6	11
		Chrysene	51.3	22
		Benzo(b)fluoranthene	55.9	3.3
		Benzo(a)pyrene	49.6	5
		Di-benzo(a,h)anthracene	4.69	0.28

Note(s): Units mg/kg

The risk assessment has established potential pollutant linkage in relation to human health from elevated Lead and PAH concentrations within the near surface of the Made Ground across the site.

7.2.2 Risk Assessment – Lambeth Group

Table 7.2 outlines the sample that has exceeded its relevant assessment criteria. The full laboratory report is presented in Appendix E.2.

Table 7.2 Summary of GAC Exceedances – Lambeth Group

Location	Depth (m bgl)	Contaminant	Concentration	Guidance Level
WS101	0.35	Arsenic	43	37

Note(s): Units mg/kg

The risk assessment has established a potential pollutant linkage in relation to human health from a single elevated arsenic concentration within the Lambeth Group.

7.3 Asbestos

The test certificate for each sample submitted for contamination analysis during this investigation includes the results of an Asbestos Screen.

In each case 'Not detected' was reported.

This finding does not obviate the risk of asbestos being present on the site and the Client must seek advice from qualified and competent asbestos specialist during and prior to undertaking works to ensure compliance with appropriate legislation and guidance.

7.4 Risk to Controlled Waters

Groundwater was encountered between 0.20m and 4.10m bgl during 6No of groundwater monitoring period (August to November 2025).

The Lambeth Group was classed as a Secondary Bedrock Aquifer and could support shallow groundwater. The London Clay Formation bedrock underneath Lambeth Group was classified as Unproductive Strata designation. Groundwater Source Protection Zones were recorded on site associated with the Lambeth Group and the sub-surface chalk: Inner Zone1c (Inner protection Zone) and Zone III (Total Catchment).

Topography was gently undulating, sloping downwards towards the southeast by approximately 2–3°. The nearest surface water features circa 73m E, which was unnamed river stream.

Local topography dictates that any surface water and shallow groundwater will flow down to the southeast – away from the Lambeth Group and the Secondary A Aquifer. Deep groundwater within the Newhaven Chalk Formation is not at risk as the cohesive layers of the overlying Lambeth Group will act as an aquiclude.

7.5 Risk from Ground Gas Ingression

Potential sources of ground gas within influencing distance of the site identified within the CSM comprise:

- Potentially Infilled Land (multiple, water and non-water, onsite)
- Clay Pit
- Made Ground

Taking into consideration the likely potential sources of ground gases, six monitoring visits were undertaken from August to November 2025 (3-months), in accordance with current guidance, with results provided in Appendix F.

A maximum carbon dioxide concentration of 4.6% has been recorded. No methane concentrations have been recorded above the Level of Detection (LoD) and no flow rate observed. No signs of active generation are present (no Methane, Hydrogen Sulphide, Carbon Monoxide <1) on all occasions. There were two occasions at WS101 where high groundwater in 23rd October and 6th November prevented the readings.

Using the worst-case values, a carbon dioxide Gas Screening Value (GSV) of 0.0076 l/h has been calculated.

Based on the GSVs derived and the method for determining the Characteristic Gas Situation (CS) presented within Table 2 of BS8485:2015, the site has been characterised as CS1, very low risk, where the installation of gas protection measures will not be required. Furthermore, the previous site investigation (report ref: 16362/SGRA, August 2017), included six rounds of monitoring data collected between July and October 2017, which also classified the site as CS1, consistent with the findings of this assessment.

7.5.1 Radon

The site is in a lower probability radon area where less than 1% of homes are estimated to be at or above the Action Level. Therefore, no radon protective measures are necessary in the construction of new dwellings or extensions.

7.6 Generic Quantitative Risk Assessment

Quantitative risk assessments are undertaken for the soil and groundwater. The CSM has been updated to take account of the assessments below and presented in Appendix E.1. The full laboratory chemical report is presented in Appendix E.2.

7.6.1 Soils

Four of the samples tested showed concentrations of Lead, Arsenic and PAHs in excess of the relevant C4SL for a residential with home grown produce land-use scenario. With reference to 16362/GIR dated August 2017, soil chemical analysis recorded one sample with substance levels over their representative residential with plant uptake guideline values for two PAH's show in Table 7.3.

Table 7.3 Summary of Chemical Analysis of Soils Sample Exceedance in 19362/GIR dated August 2025

Substance	Sample locations where SGV, C4SL or S4UL adopted were exceeded for the 'Residential with plant uptake' land-use scenario
Benzo(b)fluoranthene	WSA:0.20 (5.89mg/kg against 4.00mg/kg)
Di-benzo(a,h)anthracene	WSA:0.20 (0.53mg/kg against 0.32mg/kg)

The Tier 1 Quantitative risk assessment therefore established that there was **a risk to the human health receptors** of construction workers or future end-users.

7.6.2 Controlled Waters

The proposed development will require the implementation of a new drainage regime, which will represent an overall betterment of existing site conditions, ensuring that surface water is appropriately managed and does not follow pathways that could adversely impact third-party land or property.

Given the vulnerability of controlled waters on site and the elevated concentrations of contaminants recorded in the shallow soils, there is a low risk to controlled waters. However, as shallow soils will be removed during site clearance works and remediation, a negligible risk will remain, and no further assessment is required.

7.6.3 Ground Gas

The site has been characterised as CS1 in accordance with BS 8485, where the installation of gas protection measures will not be required.

7.7 Recommendations

Soil chemical analysis recorded four samples with elevated levels of Arsenic, Lead and/or PAHs. And, also in 16362/GIR dated August 2017, soil chemical analysis recorded one sample with substance levels over their representative residential with plant uptake guideline values for two PAH's.

Even though in this investigation there was no asbestos detected, in 16362/GIR dated August 2017, Asbestos Containing Material (ACM) was detected within the sample from WS4 at 0.50m bgl. The ACM was determined to comprise Microscopic loose fibrous asbestos (Chrysotile) debris in soil. Consultation with a licensed asbestos specialist must be made to determine a remediation strategy.

Therefore, there was a risk to the Human Health, Building Structures and Services and Groundwater receptor, which would require a remediation strategy.

The remedial objective for the site is to ensure site clean-up removes any unacceptable risk to the identified receptors of Human Health, Building Structures and Services and Groundwater receptor.

In essence the remedial objective must sever any source-pathway-receptor pollutant

linkages that have been established. Once this has been achieved, by whatever means, there can theoretically be no risk.

7.8 Protection of Services

Contamination of the ground may pose a risk to human health by permeating potable water supply pipes. To fulfil their statutory obligations, UK water supply companies require robust evidence from developers to demonstrate either that the ground in which new plastic supply pipes will be laid is free from contaminants specified in UKWIR Report 10/WM/03/21 Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites (UKWIR, 2010), or that the proposed remedial strategy will mitigate any existing risk.

7.9 Duty of Care

Groundworkers must maintain a good standard of personal hygiene including the wearing of overalls, boots, gloves and eye protectors and the use of dust masks during periods of dry weather.

7.10 Excavated Material

Excavated material as waste must be defined or classified prior to any disposal, transport, recycling or re-use at or by an appropriately licensed or exempt carrier and/or off-site disposal facility. The requirements inherent in both Duty of Care and Health and Safety must also be complied with. In order to determine what is to happen, what is suitable, appropriate and most effective in the disposal of wastes, especially those subject to CDM waste management plan requirements, several factors must be considered, and competent advice must always be sought.

7.11 HazWasteOnline

The waste classification tool HazWasteOnline™ followed by WAC analysis was undertaken on six samples to provide a general indication for future waste removal.

All samples were classified as Non-Hazardous, with the HazWasteOnline™ report presented in Appendix G. The WAC certificate is presented in Appendix E.2, within Test Report 25-07148.1.

7.12 Re-use of Excavated Material On-site

The re-use of on-site soils may be undertaken either under the Environmental Permitting Regulations 2007 (EPR), in which case soils other than uncontaminated soils are classed as waste, or under the CL:AIRE Voluntary Code of Practice (CoP) which was published in September 2008 and is accepted as an alternative regime to the EPR.

7.13 Imported Material

Any soil, which is to be imported onto the site, must undergo chemical analysis to permit

classification prior to its importation and placement to ascertain its status with specific regard to contamination, i.e. to prove that it is suitable for the purpose for which it is intended.

7.14 Discovery Strategy

There may be areas of contamination not identified during the investigation. Such occurrences may also be discovered during the demolition and construction phases for the redevelopment of the site.

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Appendix H Information Provided by the Client

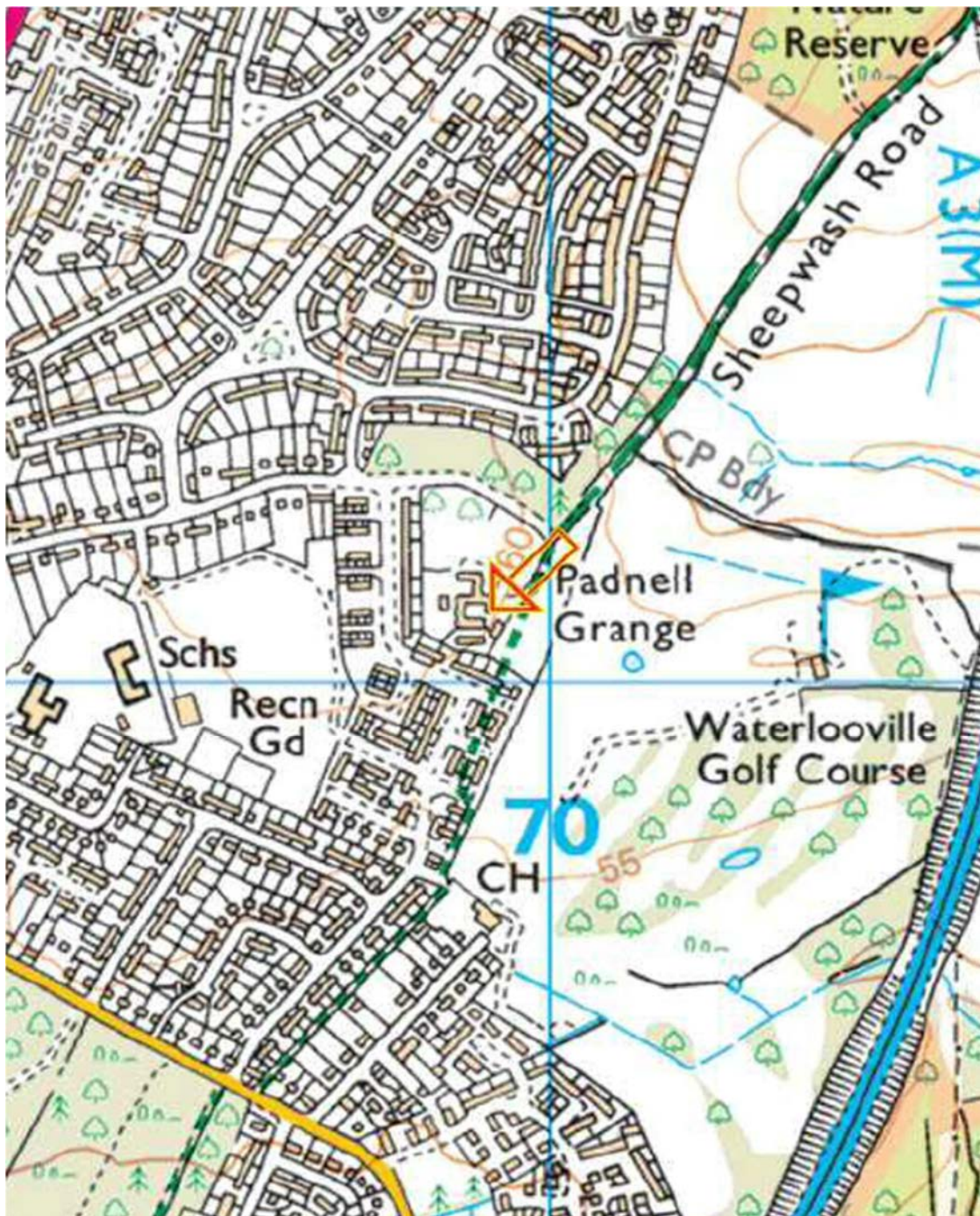


Figure 1 – Site Location Map



Job Number
22035

Project
Padnell Grange, Padnell Road, Cowplain,
Waterlooville, Hampshire, PO8 8ED

Client
Stonebond Properties (Guildford) Limited

Date
September 2025



Figure 2 – Aerial Photograph

Job Number
22035

Project
Padnell Grange, Padnell Road, Cowplain,
Waterlooville, Hampshire, PO8 8ED

Client
Stonebond Properties (Guildford) Limited

Date
September 2025



Figure 3 – Exploratory Hole Plan



Job Number 22035	Project Padnell Grange, Padnell Road, Cowplain, Waterlooville, Hampshire, PO8 8ED
Client Stonebond Properties (Guildford) Limited	Date September 2025



Figure 4 – Exploratory Hole Plan from previous investigation I6362/GIR

Job Number 22035	Project Padnell Grange, Padnell Road, Cowplain, Waterlooville, Hampshire, PO8 8ED
Client Stonebond Properties (Guildford) Limited	Date September 2025

Appendix A Standards and Resources

The site works, soil descriptions and geotechnical testing were undertaken in accordance with the following standards where applicable:

- BS 5930:2015 and BS EN ISO 22476-2&3:2005+A1:2011
- BS EN 1997-1:2004+A1:2013 Eurocode 7. Geotechnical design
- BS EN ISO 14688-1:2018 - Geotechnical investigation and testing - Identification and description
- BS EN ISO 14688-2:2018 - Geotechnical investigation and testing - Principles for a classification
- BS 10175:2011+A2:2017 - Investigation of potentially contaminated sites
- LCRM 2021 Environment Agency
- BS 8004:2015 – Code of practice for foundations
- BS 1377:1990 Parts 1 to 8
- BRE Digest 241 “Low-rise buildings on shrinkable clay soils: Part 2
- BRE Special Digest 1, 2005, ‘Concrete in Aggressive Ground’
- Stroud, M. A. 1974, “The Standard Penetration Test – its application and interpretation”, Proc. ICE Conf. on Penetration Testing in the UK, Birmingham. Thomas Telford, London.
- N.E. Simons, B.K. Menzies, “A Short Course in Foundation Engineering”
- NHBC Standards Chapter 4.2, January 2025.
- SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination December 2014
- CIRIA C733, Asbestos in soil and made ground: a guide to understanding and managing risks and CAR2012 regulations.
- Google Earth accessed in September 2025
- British Geological Survey Website & iGeology App accessed in September 2025

Appendix B Field Work

Appendix B.1 Engineers Logs

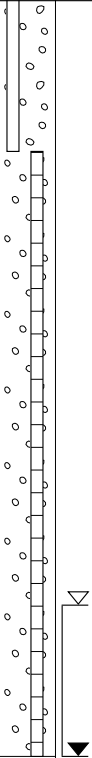
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<table><tr><td rowspan="2">Inst/ Backfill</td><td rowspan="2">Water Levels</td><td colspan="3">Samples and Tests</td><td rowspan="2">Level (m)</td><td rowspan="2">Depth (m)</td><td colspan="2">Strata</td><td rowspan="2"></td></tr><tr><td>Depth (m)</td><td>Type/ Ref</td><td>Results</td><td>Legend</td><td>Description</td></tr><tr><td rowspan="12"><div></div></td><td></td><td>0.50</td><td>B 1</td><td></td><td></td><td>(1.00)</td><td><div></div></td><td></td><td>Soft reddish brown mottled light grey slightly sandy, slightly silty CLAY. Sand is fine. Occasional rootlets and roots. TOPSOIL</td><td>0.5</td></tr><tr><td></td><td>1.00</td><td>D 2</td><td></td><td>19.00</td><td>1.00</td><td><div></div></td><td></td><td>Firm, grey slightly sandy CLAY. Sand is fine. Occasional rootlets. LAMBETH GROUP</td><td>1.0</td></tr><tr><td></td><td>1.50</td><td>SPT</td><td>N=7 (1,1/2,1,2,2)</td><td></td><td>(0.90)</td><td><div></div></td><td></td><td></td><td>1.5</td></tr><tr><td></td><td>2.00</td><td>SPT</td><td>N=16 (1,1/2,2,5,7)</td><td>18.10</td><td>1.90</td><td><div></div></td><td></td><td>Stiff, red, grey, and yellowish brown mottled silty fissured CLAY. Occasional rootlets becoming traces of former rootlets with depth. Occasional inclusions of red weak mudstone lithorelics. Occasionally with fine sand. LAMBETH GROUP</td><td>2.0</td></tr><tr><td></td><td>2.00</td><td>D 3</td><td></td><td></td><td></td><td><div></div></td><td></td><td></td><td>2.5</td></tr><tr><td></td><td>2.50</td><td>B 4</td><td></td><td></td><td></td><td><div></div></td><td></td><td></td><td>3.0</td></tr><tr><td></td><td>3.00</td><td>D 5</td><td></td><td></td><td></td><td><div></div></td><td></td><td></td><td>3.5</td></tr><tr><td></td><td>3.50</td><td>SPT</td><td>N=15 (2,3/3,4,4,4)</td><td></td><td></td><td><div></div></td><td></td><td></td><td>4.0</td></tr><tr><td></td><td>4.00</td><td>D 6</td><td></td><td></td><td>(4.10)</td><td><div></div></td><td></td><td></td><td>4.5</td></tr><tr><td></td><td>4.50</td><td>SPT</td><td>N=25 (3,4/5,7,7,6)</td><td></td><td></td><td><div></div></td><td></td><td></td><td>5.0</td></tr><tr><td></td><td>5.00</td><td>D 7</td><td></td><td></td><td></td><td><div></div></td><td></td><td>Grey SAND. Sand is fine to medium (5.00 - 6.00m)</td><td>5.5</td></tr><tr><td></td><td>6.00</td><td>SPT</td><td>N=29 (4,5/7,7,7,8)</td><td>14.00</td><td>6.00</td><td><div></div></td><td></td><td>Very stiff reddish brown mottled light grey becoming grey mottled reddish brown slightly silty CLAY. LAMBETH GROUP</td><td>6.0</td></tr><tr><td></td><td>6.00</td><td>D 8</td><td></td><td></td><td></td><td><div></div></td><td></td><td></td><td>6.5</td></tr><tr><td></td><td>7.00</td><td>D 9</td><td></td><td></td><td></td><td><div></div></td><td></td><td></td><td>7.0</td></tr><tr><td></td><td>7.50</td><td>U 10</td><td></td><td></td><td></td><td><div></div></td><td></td><td></td><td>7.5</td></tr><tr><td></td><td>8.00</td><td>D 11</td><td></td><td></td><td>(14.00)</td><td><div></div></td><td></td><td></td><td>8.0</td></tr><tr><td></td><td>9.00</td><td>SPT</td><td>N=39 (5,7/7,9,10,13)</td><td></td><td></td><td><div></div></td><td></td><td></td><td>8.5</td></tr><tr><td></td><td>9.00</td><td>D 12</td><td></td><td></td><td></td><td><div></div></td><td></td><td></td><td>9.0</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td><div></div></td><td></td><td></td><td>9.5</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td><div></div></td><td></td><td></td><td>10.0</td></tr></table>										Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata			Depth (m)	Type/ Ref	Results	Legend	Description	<div></div>		0.50	B 1			(1.00)	<div></div>		Soft reddish brown mottled light grey slightly sandy, slightly silty CLAY. Sand is fine. Occasional rootlets and roots. TOPSOIL	0.5		1.00	D 2		19.00	1.00	<div></div>		Firm, grey slightly sandy CLAY. Sand is fine. Occasional rootlets. LAMBETH GROUP	1.0		1.50	SPT	N=7 (1,1/2,1,2,2)		(0.90)	<div></div>			1.5		2.00	SPT	N=16 (1,1/2,2,5,7)	18.10	1.90	<div></div>		Stiff, red, grey, and yellowish brown mottled silty fissured CLAY. Occasional rootlets becoming traces of former rootlets with depth. Occasional inclusions of red weak mudstone lithorelics. Occasionally with fine sand. LAMBETH GROUP	2.0		2.00	D 3				<div></div>			2.5		2.50	B 4				<div></div>			3.0		3.00	D 5				<div></div>			3.5		3.50	SPT	N=15 (2,3/3,4,4,4)			<div></div>			4.0		4.00	D 6			(4.10)	<div></div>			4.5		4.50	SPT	N=25 (3,4/5,7,7,6)			<div></div>			5.0		5.00	D 7				<div></div>		Grey SAND. Sand is fine to medium (5.00 - 6.00m)	5.5		6.00	SPT	N=29 (4,5/7,7,7,8)	14.00	6.00	<div></div>		Very stiff reddish brown mottled light grey becoming grey mottled reddish brown slightly silty CLAY. LAMBETH GROUP	6.0		6.00	D 8				<div></div>			6.5		7.00	D 9				<div></div>			7.0		7.50	U 10				<div></div>			7.5		8.00	D 11			(14.00)	<div></div>			8.0		9.00	SPT	N=39 (5,7/7,9,10,13)			<div></div>			8.5		9.00	D 12				<div></div>			9.0							<div></div>			9.5							<div></div>			10.0
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata																																																																																																																																																																																																																										
		Depth (m)	Type/ Ref	Results			Legend	Description																																																																																																																																																																																																																									
<div></div>		0.50	B 1			(1.00)	<div></div>		Soft reddish brown mottled light grey slightly sandy, slightly silty CLAY. Sand is fine. Occasional rootlets and roots. TOPSOIL	0.5																																																																																																																																																																																																																							
		1.00	D 2		19.00	1.00	<div></div>		Firm, grey slightly sandy CLAY. Sand is fine. Occasional rootlets. LAMBETH GROUP	1.0																																																																																																																																																																																																																							
		1.50	SPT	N=7 (1,1/2,1,2,2)		(0.90)	<div></div>			1.5																																																																																																																																																																																																																							
		2.00	SPT	N=16 (1,1/2,2,5,7)	18.10	1.90	<div></div>		Stiff, red, grey, and yellowish brown mottled silty fissured CLAY. Occasional rootlets becoming traces of former rootlets with depth. Occasional inclusions of red weak mudstone lithorelics. Occasionally with fine sand. LAMBETH GROUP	2.0																																																																																																																																																																																																																							
		2.00	D 3				<div></div>			2.5																																																																																																																																																																																																																							
		2.50	B 4				<div></div>			3.0																																																																																																																																																																																																																							
		3.00	D 5				<div></div>			3.5																																																																																																																																																																																																																							
		3.50	SPT	N=15 (2,3/3,4,4,4)			<div></div>			4.0																																																																																																																																																																																																																							
		4.00	D 6			(4.10)	<div></div>			4.5																																																																																																																																																																																																																							
		4.50	SPT	N=25 (3,4/5,7,7,6)			<div></div>			5.0																																																																																																																																																																																																																							
		5.00	D 7				<div></div>		Grey SAND. Sand is fine to medium (5.00 - 6.00m)	5.5																																																																																																																																																																																																																							
		6.00	SPT	N=29 (4,5/7,7,7,8)	14.00	6.00	<div></div>		Very stiff reddish brown mottled light grey becoming grey mottled reddish brown slightly silty CLAY. LAMBETH GROUP	6.0																																																																																																																																																																																																																							
	6.00	D 8				<div></div>			6.5																																																																																																																																																																																																																								
	7.00	D 9				<div></div>			7.0																																																																																																																																																																																																																								
	7.50	U 10				<div></div>			7.5																																																																																																																																																																																																																								
	8.00	D 11			(14.00)	<div></div>			8.0																																																																																																																																																																																																																								
	9.00	SPT	N=39 (5,7/7,9,10,13)			<div></div>			8.5																																																																																																																																																																																																																								
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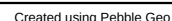
<div>soils</div> <div>L I M I T E D</div>				<div>Cable Percussion Log</div>				<div>BH101</div> <div>Sheet 2 of 2</div>					
				Hole Type CP		Easting		Northing		Ground Level (m) 20.00		Scale 1:50	
				Project Name Padnell Garage				Project No. 22035		Start Date 2025-07-28		End Date 2025-07-28	
Client Stonebond Ltd				Consultant AS				Contractor Soils Limited					
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) <small>(thickness)</small>	Strata						
		Depth (m)	Type/ Ref	Results			Legend	Description					
<div></div>	<div></div>	10.00	D 13	N=42 (5,6/8,10,11,13)	<div></div>	<div></div>	x	x	As previous page.		10.0		
		10.00	B 14				x	x			10.5		
		10.50	SPT				x	x	11.0				
		11.00	D 15				x	x	11.5				
		12.00	SPT D 16	N=45 (5,6/8,10,13,14)			x	x	12.0				
							12.00	x	x	12.5			
		13.00	D 17				x	x	13.0				
							13.50	U 18	x	x	13.5		
		14.00	D 19				x	x	14.0				
							14.50	x	x	14.5			
		15.00	SPT D 20	N=48 (5,7/8,11,13,16)			x	x	15.0				
							15.50	B 21	x	x	15.5		
		16.00	D 22				x	x	16.0				
							16.50	SPT	x	x	16.5		
		17.00	D 23	N=50 (7,9/11,15,18,6)			x	x	17.0				
							17.50	x	x	17.5			
		18.00	SPT D 24	N=50 (7,9/12,16,18,4)			x	x	18.0				
							18.50	x	x	18.5			
		19.00	D 25				x	x	19.0				
							19.50	U 26	x	x	19.5		
19.90	D 27		x	x	20.0								
20.00	D 28												
							End of Borehole at 20.00m						
Remarks							Method, Plant, Stability, Dimensions					Logger	
							0.00 - 20.00m CP Dando 2000					AN	
Checked By: ML Status: FINAL													

<div>soils</div> <div>LIMITED</div>				<div>Cable Percussion Log</div>				<div>BH102</div> <div>Sheet 1 of 2</div>					
				Hole Type CP		Easting		Northing		Ground Level (m) 20.00		Scale 1:50	
				Project Name Padnell Garage				Project No. 22035		Start Date 2025-07-29		End Date 2025-07-29	
Client Stonebond Ltd				Consultant AS				Contractor Soils Limited					
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) <small>(thickness)</small>	Strata						
		Depth (m)	Type/ Ref	Results			Legend	Description					
<div></div>		0.30	B 1		19.90	(0.10) 0.10	<div></div>	Brick and Concrete.					
						(0.60)	<div></div>	Soft greenish grey slightly sandy CLAY. Sand is fine. Occasional rootlets. LAMBETH GROUP	0.5				
		1.00	B 2		19.30	0.70	<div></div>	Firm to stiff, brown mottled grey slightly sandy, slightly silty CLAY. Sand is fine to medium. LAMBETH GROUP	1.0				
		1.50 1.50	SPT B 3	N=11 (1,1/2,4,2,3)		(1.70)	<div></div>		1.5				
		2.00	D 4				<div></div>		2.0				
		2.50	SPT	N=12 (2,2/2,3,3,4)	17.60	2.40	<div></div>	Stiff to very stiff reddish brown mottled light grey slightly sandy CLAY. LAMBETH GROUP	2.5				
		3.00	D 5				<div></div>		3.0				
		3.50	U 6				<div></div>		3.5				
		4.00 4.00 4.00	SPT D 7 B 8	N=28 (4,5/6,7,7,8)			<div></div>		4.0				
							<div></div>		4.5				
		5.00	D 9				<div></div>		5.0				
							<div></div>		5.5				
		6.00 6.00	SPT D 10	N=34 (5,6/8,8,9,9)		(12.60)	<div></div>		6.0				
							<div></div>		6.5				
		7.00	D 11				<div></div>		7.0				
	7.50	SPT	N=42 (5,6/8,10,12,12)			<div></div>		7.5					
	8.00	B 12				<div></div>		8.0					
						<div></div>		8.5					
	9.00 9.00	SPT D 13	N=50 (4,6/10,12,14,14)			<div></div>		9.0					
						<div></div>		9.5					
						<div></div>		10.0					
Continued on next page													
Remarks								Method, Plant, Stability, Dimensions 0.00 - 20.00m CP Dando 2000		Logger AN			
Checked By: ML Status: FINAL													

<div><div>soils</div><div>LIMITED</div></div>				<div>Cable Percussion Log</div>				<div>BH102</div> <div>Sheet 2 of 2</div>					
				Hole Type CP		Easting		Northing		Ground Level (m) 20.00		Scale 1:50	
				Project Name Padnell Garage				Project No. 22035		Start Date 2025-07-29		End Date 2025-07-29	
Client Stonebond Ltd				Consultant AS				Contractor Soils Limited					
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) <small>(thickness)</small>	Strata						
		Depth (m)	Type/ Ref	Results			Legend	Description					
<div></div>	<div></div>	10.00	D 14				<div></div>	As previous page.		<div></div>			
		10.50	U 15								10.5		
		10.95	D 16								11.0		
											11.5		
		12.00	SPT								12.0		
		12.00	D 17								12.5		
											13.0		
		13.00	D 18								13.5		
											14.0		
		13.50	SPT								14.5		
		14.00	D 19								15.0		
											15.5		
		15.00	SPT								16.0		
15.00	D 20	16.5											
15.00	B 21	17.0											
		17.5											
16.00	D 22	18.0											
16.00	U 23	18.5											
		19.0											
17.00	D 24	19.5											
		20.0											
				5.00	15.00	(3.00)	(2.00)	Very stiff grey slightly mottled reddish brown slightly silty CLAY. LAMBETH GROUP					
				2.00	18.00			Very stiff grey slightly mottled reddish brown slightly sandy CLAY. LAMBETH GROUP					
								End of Borehole at 20.00m					
Remarks								Method, Plant, Stability, Dimensions 0.00 - 20.00m CP Dando 2000				Logger AN	
Checked By: ML Status: FINAL													

<div></div>				Window Sampler				WS102			
						Sheet 1 of 1					
				Hole Type WS		Easting		Northing		Ground Level (m)	
Project Name Padnell Grange				Project No. 22035		Start Date 2025-07-28		End Date 2025-07-28			
Client Stonebond Ltd				Consultant AS				Contractor Soils Limited			
Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata				
		Depth (m)	Type/ Ref	Results			Legend	Description			
<div></div>	<div></div>	0.10	ES			(0.45)		Stiff brownish grey mottled brown, slightly gravelly sandy, desiccated CLAY. Gravel is angular to sub-angular, fine to coarse flint, brick, chalk and clinker. Frequent rootlets. Rare angular flint cobble. Underlain by band of broken brick. MADE GROUND.	0.5		
		0.50	ES			0.45		Soft to firm, yellowish brown, brown and light greyish brown mottled, silty CLAY. Sand is fine to medium. Frequent rootlets. LAMBETH GROUP	1.0		
		0.90	ES			(1.25)		Rare well rounded coarse flint gravel. (1.60m)	1.5		
		1.40	D			1.70		Firm to stiff, yellowish brown, mottled brown and light greyish brown, slightly silty, sandy CLAY. Sand is fine to medium and features in frequent lenses and inclusions. Frequent rootlets. LAMBETH GROUP	2.0		
		1.80	D			(0.65)		Firm to stiff, multicoloured silty CLAY interbedded with SAND and sandy CLAY. Sand is fine. Clay is fissured and disturbed. Frequent black organic staining. LAMBETH GROUP	2.5		
		2.40	D			2.35		Loose to medium dense, yellowish brown mottled black, silty SAND. Occasional desiccated root traces. LAMBETH GROUP	3.0		
		2.70	D			(0.30)		Soft to firm yellowish brown mottled brown, slightly silty, sandy laminated CLAY. Sand is fine to medium. LAMBETH GROUP	3.5		
		3.20	D			2.65		Soft to firm, interbedded sandy CLAY and gravelly SAND. Gravel is angular to sub-angular, fine to medium flint and mudstone. Frequent sand inclusions. Frequent clay inclusions. LAMBETH GROUP	4.0		
		3.40	D			(0.70)		Firm to stiff, brown becoming red mottled yellowish brown and light grey, slightly sandy silty CLAY. Sand is fine. LAMBETH GROUP	4.5		
		3.90	D			3.35		End of Borehole at 5.00m	5.0		
		4.20	D			(0.50)				5.5	
		4.80	D			3.85				6.0	
						(0.15)				6.5	
						4.00				7.0	
						(1.00)				7.5	
				5.00				8.0			
Remarks Rootlets observed to 1.70m bgl.							Method, Plant, Stability, Dimensions 0.00 - 5.00m WS Premier 3		Logger DEE		
Checked By: ML Status: FINAL											

<div></div>				Window Sampler				WS103 Sheet 1 of 1					
				Hole Type WS		Easting		Northing		Ground Level (m)		Scale 1:50	
				Project Name Padnell Grange		Project No. 22035		Start Date 2025-07-28		End Date 2025-07-28			
Client Stonebond Ltd				Consultant AS				Contractor Soils Limited					
Inst/ Backfill		Water Levels		Samples and Tests		Level		Depth (thickness)		Strata			
				Depth (m) Type/Ref Results		(m)		(m)		Legend Description			
		0.20		ACM			(0.15)			Dark brown becoming reddish brown, slightly gravelly, silty SAND. Gravel is angular to sub-rounded, fine to coarse flint, brick and clinker. Frequent rootlets. MADE GROUND.			
		0.40		ES			(0.15)			Grey and dark grey mottled, slightly silty, sandy GRAVEL. Gravel is angular to sub-angular, fine to medium flint, clinker, brick. Frequent fine ash. Occasional rootlets. Potential cemented ACM fragment. MADE GROUND.		0.5	
		0.60		ES			(0.30)			Stiff multicoloured, slightly sandy, very gravelly desiccated CLAY. Gravel is angular to well rounded, fine to coarse flint, and chalk. Occasional rootlets. MADE GROUND.		1.0	
		0.60		D			(0.50)			Soft to firm, yellowish brown, brown and light greyish brown mottled, slightly gravelly slightly sandy CLAY. Gravel is angular to well rounded, fine to coarse flint. Occasional rootlets. Sand is fine to medium. Frequent rootlets. LAMBETH GROUP.		1.5	
		1.10		D			(0.60)			Soft to firm, light grey mottled brown and orange, slightly sandy, silty CLAY. Sand is fine to medium. Occasional rootlets. LAMBETH GROUP.		2.0	
		1.70		D			(0.70)			Firm, yellowish brown, mottled brown and light greyish brown, slightly silty, sandy CLAY. Sand is fine to medium and features in frequent lenses and inclusions. Frequent rootlets. LAMBETH GROUP.		2.5	
		2.20		D			(0.80)			Soft to firm, yellowish brown, mottled light blue and brown sandy silty CLAY. Sand is fine to medium and features in frequent lenses and inclusions. Frequent rootlets. Very strong fuel/diesel odour. LAMBETH GROUP.		3.0	
		2.40		ES			(0.20)			Firm to stiff, yellowish brown, mottled brown and light greyish brown, slightly silty, sandy CLAY. Sand is fine to medium and features in frequent lenses and inclusions. Frequent rootlets. LAMBETH GROUP.		3.5	
		2.65		ES			(1.20)			Soft to stiff, yellowish brown mottled brown, slightly silty, sandy laminated CLAY. Sand is fine to medium and features in fine inclusions. Occasional fine black organic mottling. Underlain by thin multicoloured band with mudstone and fine flint gravel. LAMBETH GROUP		4.0	
		2.70		D						Band of multicoloured slightly sandy, slightly gravelly CLAY. With frequent sub-angular weak mudstone lithorelics and fine flint gravel. (3.75 - 3.80m)		4.5	
		2.90		D						Firm to stiff, red mottled grey and yellowish brown mottled silty CLAY. Occasionally with fine sand. LAMBETH GROUP		5.0	
		3.10		D						End of Borehole at 5.00m		5.5	
		3.60		D								6.0	
		3.90		D								6.5	
		4.40		D								7.0	
4.90		D								7.5			
										8.0			
										8.5			
										9.0			
										9.5			
										10.0			
Remarks Rootlets observed to 1.70m bgl.										Method, Plant, Stability, Dimensions 0.00 - 5.00m WS Premier 3		Logger DEE	
Checked By: ML Status: FINAL													

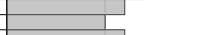
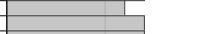
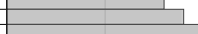
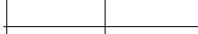
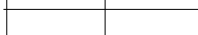
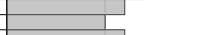
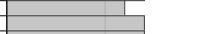
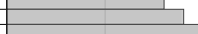
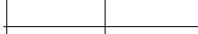
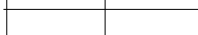
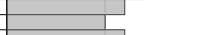
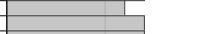
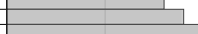
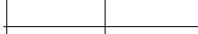
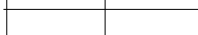


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2.5										2.5	
3.0										3.0	
3.5										3.5	
4.0										4.0	
4.5										4.5	
5.0										5.0	
5.5										5.5	
6.0										6.0	
6.5										6.5	
7.0										7.0	
7.5										7.5	
8.0										8.0	
8.5										8.5	
9.0										9.0	
9.5										9.5	
10.0										10.0	
Remarks Depth Achieved				Method, Plant				Logger			
				Hammer Weight (kg) Hammer Drop (mm) Cone Diameter (mm) Cone Angle Rod Diameter (mm) Damper				65.5			
Checked By: ML Status: FINAL											

<div>soils</div> <div>LIMITED</div>		Dynamic Probe								DP108																																																																																																																																																																																																																																																																																																																																			
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Appendix C Geotechnical In-Situ and Laboratory Testing

Appendix C.1 Classification

Classification based on SPT “N” values:

The inferred undrained strength of the cohesive soils was based on the SPT “N” blow counts, derived from the relationship suggested by Stroud (1974) and classified using Table C.1.1. (Ref: Stroud, M. A. 1974, “The Standard Penetration Test – its application and interpretation”, Proc. ICE Conf. on Penetration Testing in the UK, Birmingham. Thomas Telford, London.).

Table C.1.1 SPT “N” Blow Count Cohesive Classification

Classification	Undrained Cohesive Strength C_u (kPa)
Extremely low	<10
Very low	10 – 20
Low	20 – 40
Medium	40 – 75
High	75 – 150
Very high	150 – 300
Extremely high	> 300
Note(s): (Ref: BS EN ISO 14688-2:2004+A1:2013 Clause 5.3.)	

The relative density of granular soils was classified based of the relationship given in Table C.1.2.

The *UK National Annex to Eurocode 7: Geotechnical design – Part 2: Ground investigation and testing, NA 3.7 SPT test, BS EN 1997-2:2007, Annex F* states “Relative density descriptions on borehole records should also be based on uncorrected SPT N values, unless significantly disturbed, using the density classification in BS 5930:2015, Table 7.

Table C.1.2 SPT “N” Blow Count Granular Classification

Classification	SPT “N” blow count (blows/300mm)
Very loose	0 to 4
Loose	4 to 10
Medium dense	10 to 30
Dense	30 to 50
Very dense	Greater than 50
Note(s): (Ref: The Standard Penetration Test (SPT): Methods and Use, CIRIA Report 143, 1995)	

Appendix C.2 Interpretation**Table C.2.1 Interpretation of SPT Tests**

BH	Strata	SPT N60 Blow Counts	Inferred Cohesive Strength
BH101	LMBE 1.50-20.00 Slight sandy silty CLAY	7-50	Low to very high ($C_u = 35 - 250\text{kPa}$)
BH102	LMBE 1.50-20.00 Slight sandy silty CLAY	11-50	Medium to very high ($C_u = 55 - 250\text{kPa}$)

Table C.2.2 Interpretation of DPSH Blow Counts

DP	Strata	Equivalent SPT N60 Blow Counts	Inferred Cohesive Strength/Granular Density
DPI01	LMBE 0.30-1.40 Slightly sandy CLAY	13-26	Medium to high ($C_u = 65 - 130\text{kPa}$)
	LMBE 1.40-5.00 Slightly sandy CLAY	4-17	Low to high ($C_u = 20 - 85\text{kPa}$)
DPI02	LMBE 0.50-2.65 Slightly sandy CLAY	0-17	Extremely low to high ($C_u = <10 - 85\text{kPa}$)
	LMBE 2.65-3.35 SAND	9-30	Loose to medium dense
	LMBE 3.20-3.60 Slightly sandy CLAY	4-9	Low to medium ($C_u = 20 - 45\text{kPa}$)
	LMBE 3.70-5.00 Slightly sandy CLAY	13-17	Medium to high ($C_u = 65 - 85\text{kPa}$)
DPI03	LMBE 0.50-5.00 Slightly sandy CLAY	4-17	Low to high ($C_u = 20 - 85\text{kPa}$)
DPI04	LMBE 0.30-2.00 Slightly sandy CLAY	4-26	Low to high ($C_u = 20 - 130\text{kPa}$)
	LMBE 2.00-5.00 SAND	26-52	Medium to very dense
DPI05	LMBE 0.40-3.10 Slightly sandy CLAY	9-30	Medium to high ($C_u = 45 - 150\text{kPa}$)
	LMBE 3.10-4.00 Slightly sandy CLAY	39-56	Very high ($C_u = 195 - 280\text{kPa}$)

DP	Strata	Equivalent SPT N60 Blow Counts	Inferred Cohesive Strength/Granular Density
DPI06	LMBE 4.00-5.00 Slightly sandy CLAY	13-26	Medium to high ($C_u = 65 - 130\text{kPa}$)
	LMBE 0.20-1.00 Slightly sandy CLAY	17-26	High ($C_u = 85 - 130\text{kPa}$)
	LMBE 1.00-2.00 SAND	13-26	Medium dense
	LMBE 2.00-3.30 Slightly sandy CLAY	9-39	Medium to very high ($C_u = 45 - 195\text{kPa}$)
	LMBE 3.30-4.60 SAND	17->50	Medium dense to very dense
DPI07	LMBE 4.60-5.00 Slightly sandy CLAY	26-56	High to very high ($C_u = 130 - 280\text{kPa}$)
	LMBE 0.20-2.75 Slightly sandy CLAY	9-35	Medium to very high ($C_u = 45 - 175\text{kPa}$)
	LMBE 2.75-5.00 SAND	22 - >50	Medium dense to very dense
DPI08	LMBE 0.30-0.70 Sandy CLAY	13-22	Medium to high ($C_u = 65 - 110\text{kPa}$)
	LMBE 0.70-4.60 SAND	9-35	Loose to dense
	LMBE 4.60-5.00 CLAY	13-17	Medium to high ($C_u = 65 - 85\text{kPa}$)

Table C.2.3 Interpretation of Atterberg Limit Tests

Stratum	M/C (%)	PI (%)	>425 μm (%)	Mod PI (%)	Class	VCP BRE	NHBC
LMBE	12.7- 28.8	15-58	72-100	15-58	CI to CV	Low to high	Low to high

Note(s): BRE Volume Change Potential refers to BRE Digest 240 (based on Atterberg results). VCP=Volume Change Potential
 NHBC Volume Change Potential refers to NHBC Standards Chapter 4.2
 Soils Classification based on British Soil Classification System
 The Atterberg Limit Tests were undertaken in accordance with BS 1377:Part 2:1990 Clauses 3.2, 4.3 and 5

Table C.2.4 Interpretation of PSD Tests

Location	Depth (m bgl)	Soil Description	VCP		>63µm Sieve (%)
			BRE	NHBC	
WS104	2.40	Brown slightly gravelly silty/ clayey fine to coarse SAND	Yes	No	25
WS106	1.70	Brown silty/ clayey fine to coarse SAND	Yes	No	25
WS108	1.20	Brown slightly gravelly silty/ clayey fine to coarse SAND	No	No	15
Note(s): (The Particle Size Distribution Tests were undertaken in accordance with BS 1377: Part 2: 1990 Clause 9). VCP=Volume Change Potential					

Appendix C.3 Geotechnical In-Situ and Laboratory Results



Laboratory Report



Contract Number: 80245

Client Ref: **22035**

Client PO: **22035/AS**

Date Received: **08-08-2025**

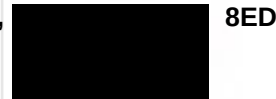
Date Completed: **28-08-2025**

Report Date: **28-08-2025**

Client: **Soils Limited**

This report has been checked and approved by:

Contract Title: **Padnell Grange, Padnell Road, Cowplain,**
For the attention of: **Alex Stratford**



8ED

Brendan Evans
Senior Office Administrator

Description	Qty
Determination of water content BS EN ISO 17892-1:2014 - @ Non Accredited Test	5
1 point Liquid & Plastic Limit.. BS EN ISO 17892-12 - * UKAS	5
Particle Size Distribution BS EN ISO 17892-4 : 5.1 - * UKAS	3

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

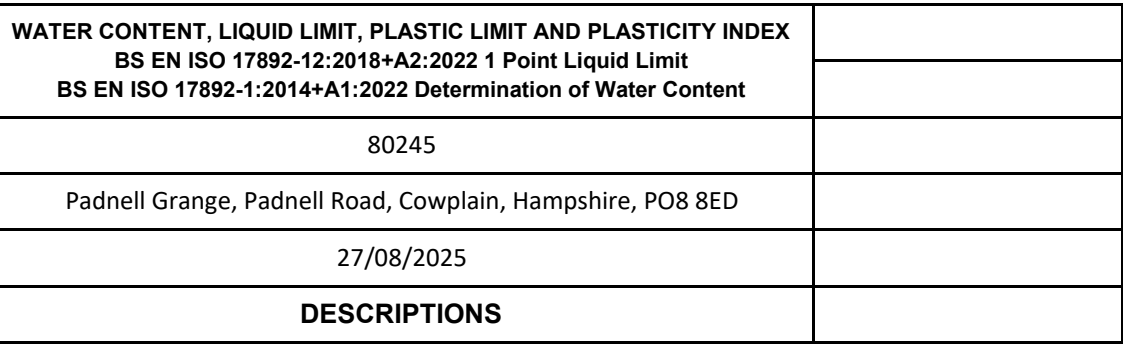
This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Senior Office Administrator) - Brendan Evans (Business Support Co-ordinator) - Darren Bourne (Quality Senior Technician)

Paul Evans (Director) - Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager)

Shaun Thomas (Site Manager) - Wayne Honey (HR & HSE Manager)

[illegible]

Operator
Aaron Hodge



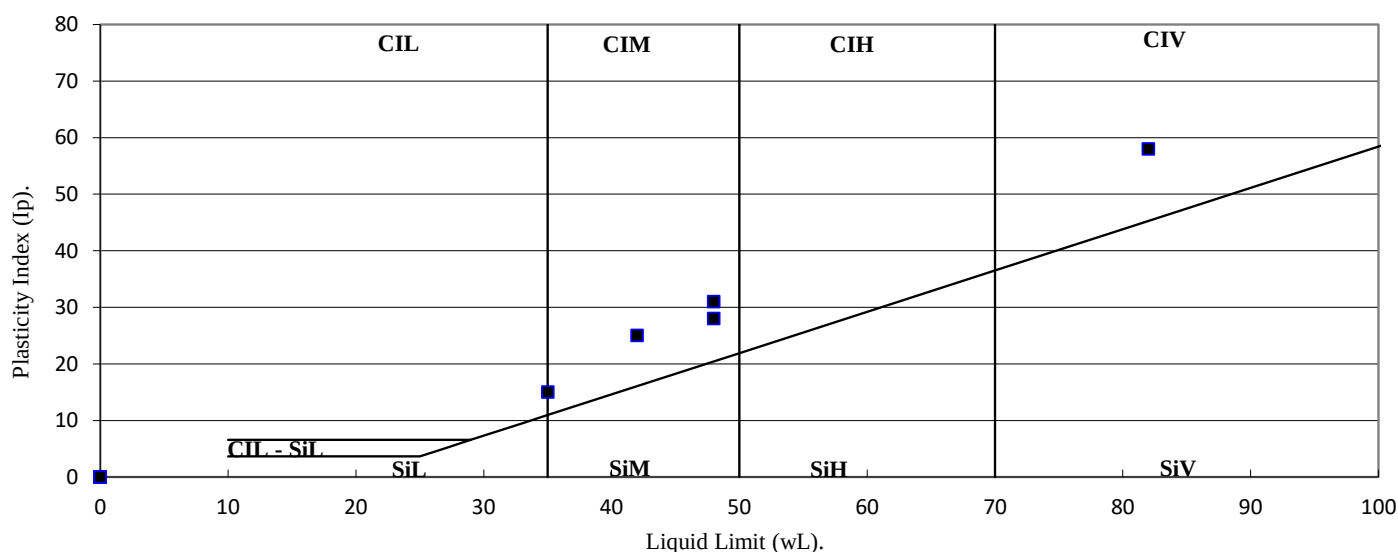
Contract Number	80245	
Project Name	Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	
Date Tested	27/08/2025	
Test Comments	80g/30° Fall cone used	

[illegible]

SYMBOLS : NP = Non Plastic

PLASTICITY CHART

BS EN ISO 14688-2:2018 Clause 4.4



*For sample descriptions please see sample descriptions sheet

Operator
Aaron Hodge

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

Contract Number

80245

Borehole/Pit No.

WS104

Project Name

Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED

Sample No.

Sample Description

Brown slightly gravelly silty/ clayey fine to coarse SAND

Depth Top

2.40

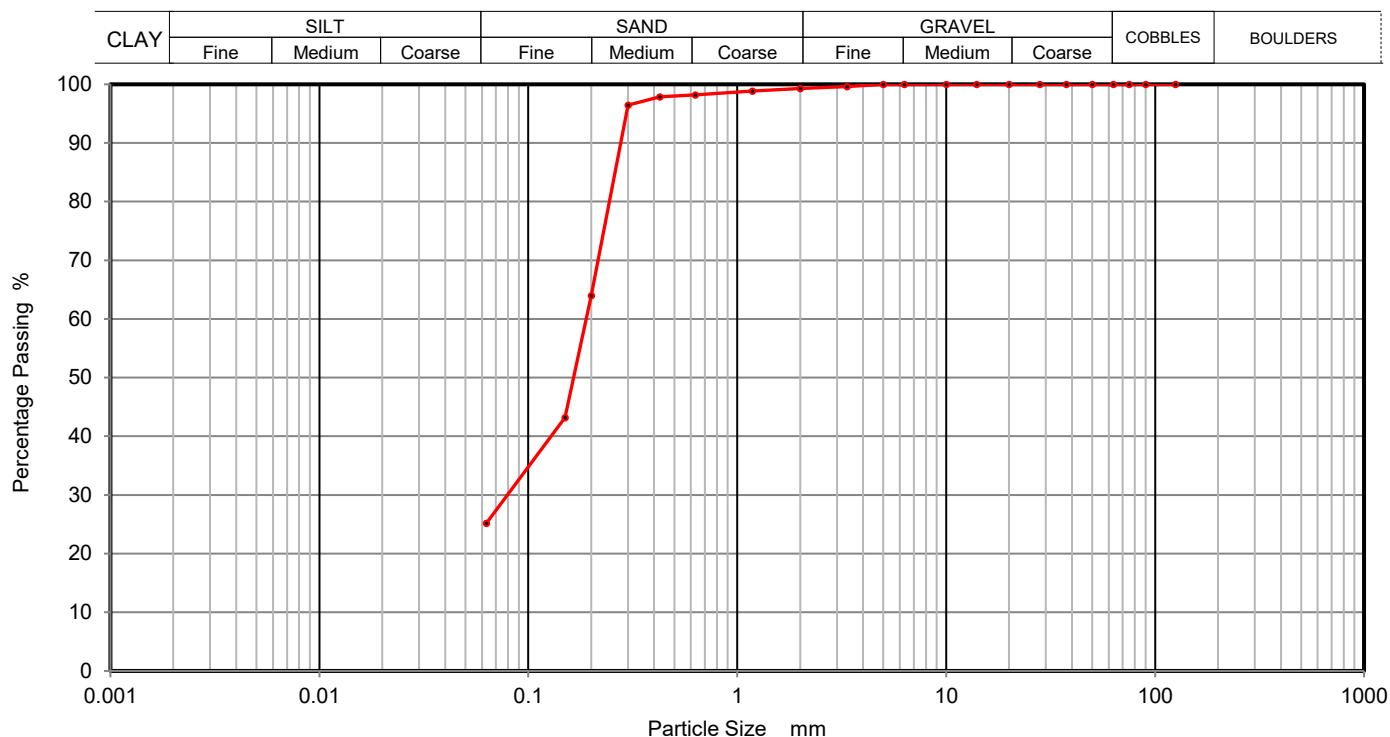
Depth Base

Date Tested

15/08/2025

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	99		
0.63	98		
0.425	98		
0.30	96		
0.20	64		
0.15	43		
0.063	25		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	74
Silt and Clay	25

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Ben. J

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

Contract Number

80245

Borehole/Pit No.

WS106

Project Name

Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED

Sample No.

Sample Description

Brown silty/ clayey fine to coarse SAND

Depth Top

1.70

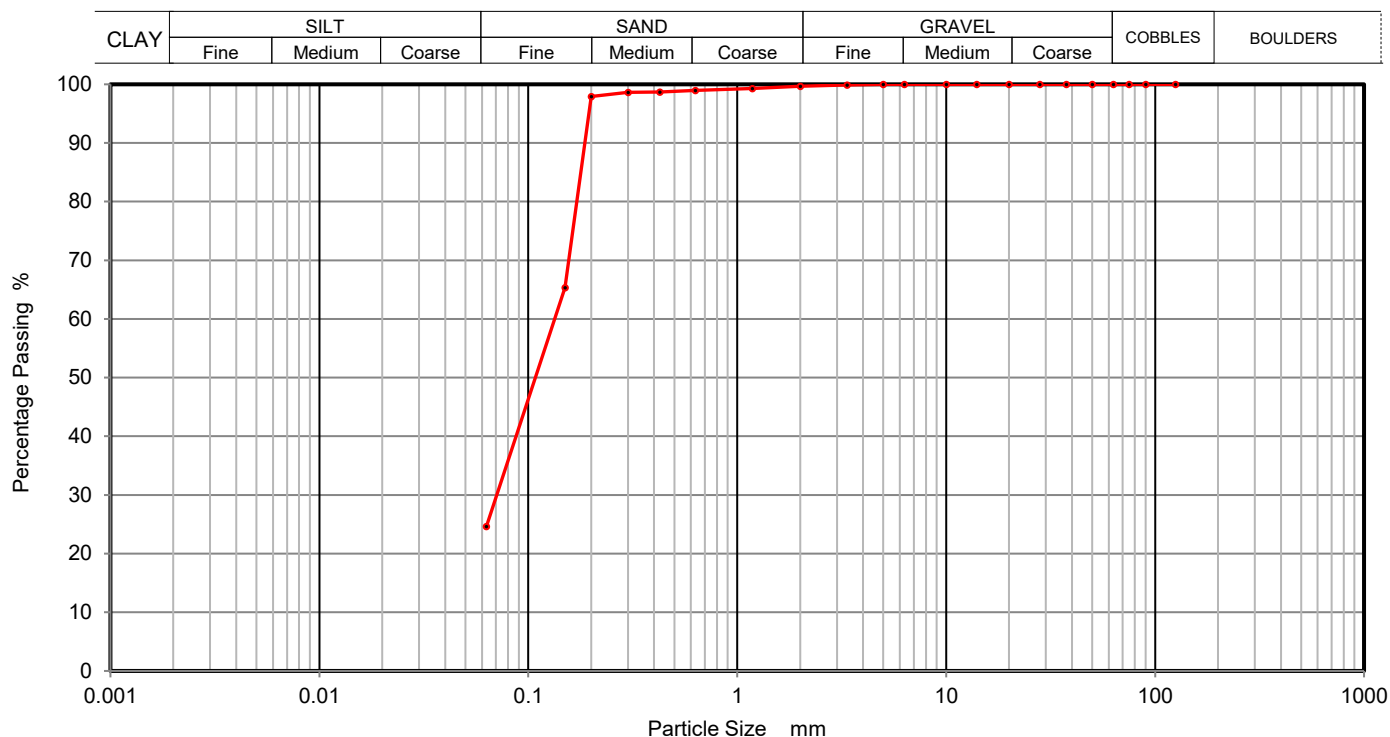
Depth Base

Date Tested

15/08/2025

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.63	99		
0.425	99		
0.30	99		
0.20	98		
0.15	65		
0.063	25		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	75
Silt and Clay	25

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Ben. J

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

Contract Number

80245

Borehole/Pit No.

WS108

Project Name

Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED

Sample No.

Sample Description

Brown slightly gravelly silty/ clayey fine to coarse SAND

Depth Top

1.20

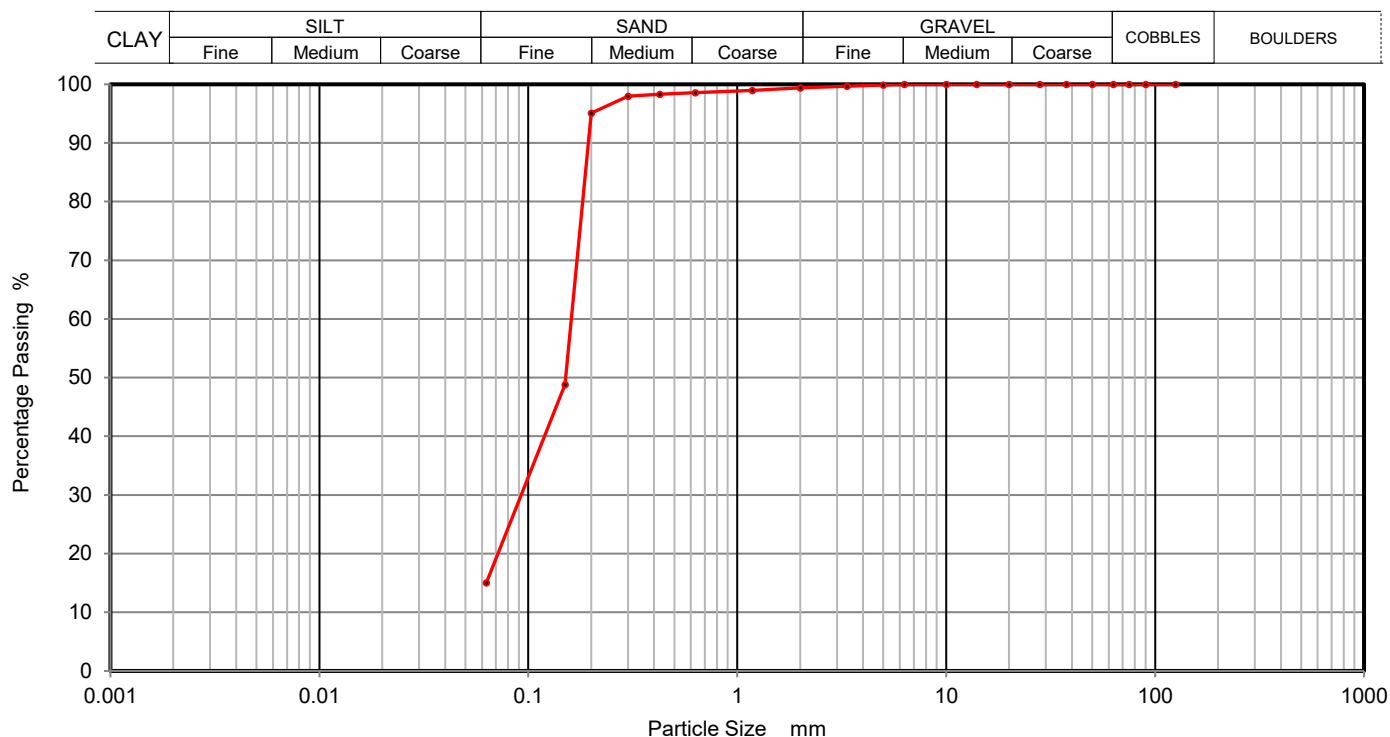
Depth Base

Date Tested

15/08/2025

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	99		
0.63	99		
0.425	98		
0.30	98		
0.20	95		
0.15	49		
0.063	15		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	84
Silt and Clay	15

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Ben. J



Laboratory Report



Contract Number: 80409

Client Ref: **22035**

Client PO: **22035/AS**

Date Received: **19-08-2025**

Date Completed: **04-09-2025**

Report Date: **04-09-2025**

Client: **Soils Limited**

This report has been checked and approved by:

Contract Title: **Padnell Grange, Radnell Road, Cowplain, H** **D8 8ED**

For the attention of: **Alex Stratford**

Shaun Jones
Laboratory manager

Description	Qty
Determination of water content BS EN ISO 17892-1:2014 - @ Non Accredited Test	6
1 point Liquid & Plastic Limit.. BS EN ISO 17892-12 - * UKAS	6

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Senior Office Administrator) - Brendan Evans (Business Support Co-ordinator) - Darren Bourne (Quality Senior Technician)

Paul Evans (Director) - Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager)

Shaun Thomas (Site Manager) - Wayne Honey (HR & HSE Manager)



Contract Number	80409	
Project Name	Padnell Grange, Radnell Road, Cowplain, Hampshire, PO8 8ED	
Date Tested	02/09/2025	
	DESCRIPTIONS	

[illegible]

Operator
Clayton. J



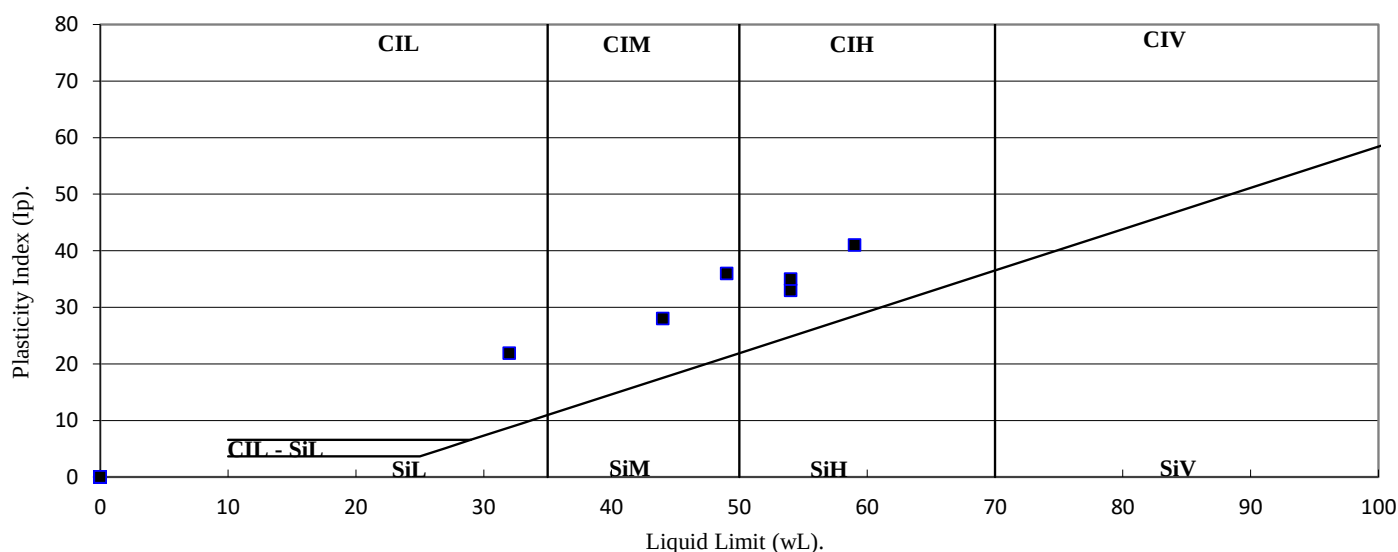
Contract Number	80409	
Project Name	Padnell Grange, Radnell Road, Cowplain, Hampshire, PO8 8ED	
Date Tested	02/09/2025	
Test Comments	80g/30° Fall cone used	

[illegible]

SYMBOLS : NP = Non Plastic

PLASTICITY CHART

BS EN ISO 14688-2:2018 Clause 4.4



***For sample descriptions please see sample descriptions sheet**

Operator
Clayton. J

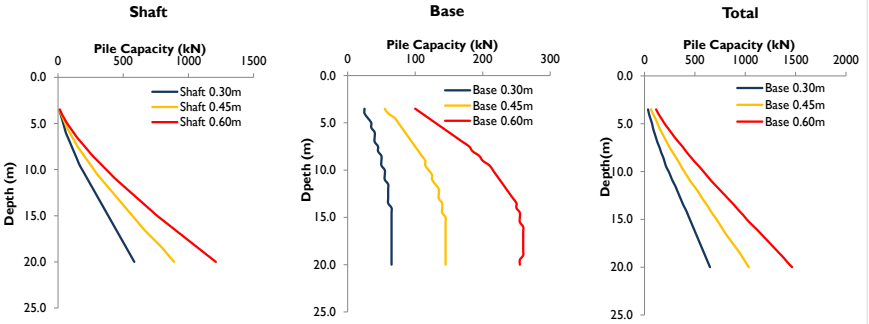
Appendix D Foundation Design

Appendix D.1 Preliminary Pile Design

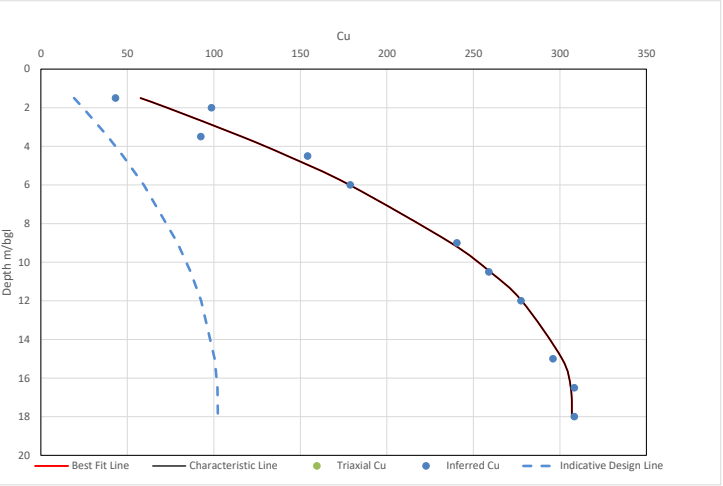
Preliminary Pile Working Loads

Single Vertically Loaded Pile (kN)

Name:	ML	N _c value	9	Pile Start Depth:	3	FOS	
Job No:	22035	α value:	0.45	Pile Final Depth:	20	Shaft	Base
Date:	12.9.25			Pile Increment:	0.5	3	3



Pile Diameter (m):									
Pile Depths (m bgl)	0.30			0.45			0.60		
	Shaft	Base	Total	Shaft	Base	Total	Shaft	Base	Total
3.0									
3.5	10	25	35	10	55	65	15	100	115
4.0	20	25	45	25	60	85	30	110	140
4.5	30	30	60	40	70	110	50	120	170
5.0	40	35	75	55	75	130	70	130	200
5.5	50	35	85	70	80	150	95	140	235
6.0	60	40	100	90	85	175	120	150	270
6.5	75	40	115	110	90	200	145	160	305
7.0	90	40	130	130	95	225	175	170	345
7.5	105	45	150	150	100	250	205	180	385
8.0	120	45	165	175	105	280	235	185	420
8.5	135	50	185	200	110	310	265	195	460
9.0	150	50	200	225	115	340	300	200	500
9.5	165	50	215	250	115	365	335	210	545
10.0	185	55	240	275	120	395	370	215	585
10.5	205	55	260	300	125	425	405	220	625
11.0	225	55	280	330	125	455	440	225	665
11.5	245	60	305	360	130	490	480	230	710
12.0	265	60	325	390	135	525	520	235	755
12.5	285	60	345	420	135	555	560	240	800
13.0	305	60	365	450	135	585	600	245	845
13.5	325	60	385	480	140	620	640	250	890
14.0	345	65	410	510	140	650	680	250	930
14.5	365	65	430	540	140	680	720	255	975
15.0	385	65	450	570	145	715	760	255	1015
15.5	405	65	470	600	145	745	805	255	1060
16.0	425	65	490	630	145	775	850	260	1110
16.5	445	65	510	660	145	805	895	260	1155
17.0	465	65	530	695	145	840	940	260	1200
17.5	485	65	550	730	145	875	985	260	1245
18.0	505	65	570	765	145	910	1030	260	1290
18.5	525	65	590	800	145	945	1075	260	1335
19.0	545	65	610	830	145	975	1120	260	1380
19.5	565	65	630	860	145	1005	1165	255	1420
20.0	585	65	650	890	145	1035	1210	255	1465



Appendix E Chemical Laboratory Analyses

Appendix E.1 Conceptual Site Model

Table E.1.1 CSM Revised Pre-Chemical Analyses

Source	Potential Contaminant	Exposure Pathway	Receptor	Initial Assessment from Preliminary Investigation Report Information			Comments	Proposed Investigation
				Severity	Probability	Risk		
Potential ACM on dilapidated buildings Padnell Brick and Tile Works; Clay Mill (and workings) Potentially Infilled Land (multiple, water and non-water, onsite)/ Clay Pit – Potential Made Ground Onsite Kiln On-site historic and current site usage.	Metals, Semi-metals and non-metals, PAHs, Asbestos	Inhalation of dust	Site Workers/Site Maintenance	Medium	Low	Moderate/Low	Lambeth Group which was classed as a Secondary Bedrock Aquifer and could support shallow groundwater.	Phase II ground investigation to confirm the ground conditions present and chemical testing prior to undertaking a generic quantitative risk assessment.
			End Users	Medium	Low	Moderate/Low		
			Off-site Users	Medium	Unlikely	Low		
	PAHs, TPHs, Ground Gas	Inhalation of vapour/gases	Site Workers/Site Maintenance	Mild	Unlikely	Very low		
			End Users					
			Off-site Users	Minor	Unlikely	Very low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Ingestion and absorption via direct contact	Site Workers/Site Maintenance	Medium	Low	Moderate/Low		
			End Users	Medium	Unlikely	Low		
			Surface Water	Minor	Unlikely	Very low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Migration via surface runoff	Surface Water	Minor	Unlikely	Very low		
			Shallow Aquifer	Medium	Unlikely	Low		
			Deep Aquifer	Minor	Unlikely	Very low		
			Buried Structures	Mild	Low	Low		
			Buried Services					
	PAHs, TPHs, Ground Gas	Migration of gases via permeable soils	Site Workers/Site Maintenance	Mild	Low	Low		
			End Users					
			Off-site Users	Minor	Unlikely	Very low		
			Building and Confined Spaces					
Made Ground/ Potentially Infilled Land (multiple, water and non-water, offsite)/ Old Clay Pits/Ponds offsite Kiln Off-site sources from which potential contamination would have migrated onto the site.	Metals, Semi-metals and non-metals, PAHs, Asbestos	Inhalation of dust	Site Workers/Site Maintenance	Medium	Low	Moderate/Low	Following on the site investigation, potential hydrocarbon odours were identified in WS103 at depth of 1.30-2.80m bgl.	Phase II ground investigation to confirm the ground conditions present and chemical testing prior to undertaking a generic quantitative risk assessment.
			End Users	Medium	Low	Moderate/Low		
			Off-site Users	-	-	-		
	PAHs, TPHs, Ground Gas	Inhalation of Vapour/gases (including Radon)	Site Workers/Site Maintenance	Mild	Low	Low		
			End Users	Minor	Unlikely	Very low		
			Off-site Users	-	-	-		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Ingestion and absorption via direct contact	Site Workers/Site Maintenance	Mild	Unlikely	Very low		
			End Users	Mild	Unlikely	Very low		
			Surface Water	Minor	Unlikely	Very low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Migration via surface runoff	Surface Water	Minor	Unlikely	Very low		
			Surface Water	Minor	Unlikely	Very low		
			Shallow Aquifer	Mild	Low	Low		
			Deep Aquifer	Minor	Unlikely	Very low		
			Buried structures	Minor	Unlikely	Very low		
	PAHs, TPHs, Ground Gas	Migration in solution via groundwater	Buried Services	Minor	Unlikely	Very low		
			Site Workers/Site Maintenance	Medium	Unlikely	Low		
			End Users	Medium	Unlikely	Low		
			Off-site Users	-	-	-		
			Building and confined spaces	Mild	Low	Low		

Table E.1.2 CSM Revised Post-Chemical Analyses

Source	Potential Contaminant	Exposure Pathway	Receptor	Initial Assessment from Preliminary Investigation Report Information			Comments	Further Works
				Severity	Probability	Risk		
Potential ACM on dilapidated buildings Padnell Brick and Tile Works; Clay Mill (and workings) Potentially Infilled Land (multiple, water and non-water, onsite)/ Clay Pit – Potential Made Ground Onsite Kiln On-site historic and current site usage.	Metals, Semi-metals and non-metals, PAHs, Asbestos	Inhalation of dust	Site Workers/Site Maintenance	Medium	Low	Moderate/Low	Four soil samples were found to have elevated levels of Lead, Arsenic and/or PAHs in this investigation. And with reference to 16362/GIR dated August 2017, soil chemical analysis recorded one sample with substance levels over their representative residential with plant uptake guideline values.	Remediation strategy will be required to address shallow soil contamination recorded.
			End Users	Medium	Low	Moderate/Low		
			Off-site Users	Medium	Unlikely	Low		
	PAHs, TPHs, Ground Gas	Inhalation of vapour/gases	Site Workers/Site Maintenance	Mild	Unlikely	Very low	Even though in this investigation there was no asbestos detected, however in 16362/GIR dated August 2017, Asbestos Containing Material (ACM) was detected within the sample from WS4 at 0.50m bgl. The ACM was determined to comprise Microscopic loose fibrous asbestos (Chrysotile) debris in soil.	Consultation with a licensed asbestos specialist is recommended to determine a remediation strategy.
			End Users	Minor	Unlikely	Very low		
			Off-site Users	Minor	Unlikely	Very low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Ingestion and absorption via direct contact	Site Workers/Site Maintenance	Medium	Low	Moderate/Low	Groundwater and gas monitoring is still on-going, the gas risk will be updated once all visits are completed.	H&S precautions required for site workers.
			End Users	Medium	Unlikely	Low		
			Off-site Users	Minor	Unlikely	Very low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Migration via surface runoff	Surface Water	Minor	Unlikely	Very low		Discovery Strategy to address any unexpected contamination.
			Surface Water	Minor	Unlikely	Very low		
		Migration in solution via groundwater	Shallow Aquifer	Medium	Unlikely	Low		
			Deep Aquifer	Minor	Unlikely	Very low		
		Direct contact with construction material	Buried Structures	Mild	Low	Low		
			Buried Services					
	PAHs, TPHs, Ground Gas	Migration of gases via permeable soils	Site Workers/Site Maintenance	Mild	Low	Low		
			End Users					
			Off-site Users	Minor	Unlikely	Very low		
			Building and Confined Spaces					
Made Ground/ Potentially Infilled Land (multiple, water and non-water, offsite)/ Old Clay Pits/Ponds offsite Kiln Off-site sources from which potential contamination would have migrated onto the site.	Metals, Semi-metals and non-metals, PAHs, Asbestos	Inhalation of dust	Site Workers/Site Maintenance	Medium	Low	Moderate/Low		
			End Users	Medium	Low	Moderate/Low		
			Off-site Users	-	-	-		
	PAHs, TPHs, Ground Gas	Inhalation of Vapour/gases (including Radon)	Site Workers/Site Maintenance	Mild	Low	Low		
			End Users	Minor	Unlikely	Very low		
			Off-site Users	-	-	-		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Ingestion and absorption via direct contact	Site Workers/Site Maintenance	Mild	Unlikely	Very low		
			End Users	Mild	Unlikely	Very low		
			Off-site Users					
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Migration via surface runoff	Surface Water	Minor	Unlikely	Very low		
			Surface Water	Minor	Unlikely	Very low		
		Migration in solution via groundwater	Shallow Aquifer	Mild	Low	Low		
			Deep Aquifer	Minor	Unlikely	Very low		
		Direct contact with construction material	Buried structures	Minor	Unlikely	Very low		
			Buried Services	Minor	Unlikely	Very low		
	PAHs, TPHs, Ground Gas	Migration of gases via permeable soils	Site Workers/Site Maintenance	Medium	Unlikely	Low		
			End Users	Medium	Unlikely	Low		
			Off-site Users	-	-	-		
			Building and confined spaces	Mild	Low	Low		

Appendix E.2 Chemical Laboratory Results

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Normec DETS Limited
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DETS Report No: 25-07147

Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED

Project / Job Ref: 22035

Order No: 22035/AS

Sample Receipt Date: 07/08/2025

Sample Scheduled Date: 07/08/2025

Report Issue Number: 1

Reporting Date: 13/08/2025



Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

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Soil Analysis Certificate						
DETS Report No: 25-07147	~Date Sampled	28/07/25	29/07/25	29/07/25		
Soils Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied		
~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~TP / BH No	WS103	WS105	WS108		
~Project / Job Ref: 22035	~Additional Refs	None Supplied	None Supplied	None Supplied		
~Order No: 22035/AS	~Depth (m)	1.10	0.70	2.20		
Reporting Date: 13/08/2025	DETS Sample No	785372	785373	785374		

Determinand	Unit	RL	Accreditation				
pH	pH Units	N/a	MCERTS	8.0	7.3	7.2	
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	< 200	< 200	< 200	
Total Sulphate as SO ₄	%	< 0.02	MCERTS	< 0.02	< 0.02	< 0.02	
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	13	< 10	< 10	
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.01	< 0.01	< 0.01	
Total Sulphur	%	< 0.02	NONE	< 0.02	< 0.02	< 0.02	
Ammonium as NH ₄	mg/kg	< 0.5	MCERTS	< 0.5	< 0.5	< 0.5	
Ammonium as NH ₄	mg/l	< 0.05	MCERTS	< 0.05	< 0.05	< 0.05	
W/S Chloride (2:1)	mg/kg	< 1	MCERTS	20	11	4	
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS	9.9	5.7	2.2	
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS	5	6	6	
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS	2.4	2.9	2.9	
W/S Magnesium	mg/l	< 0.1	NONE	1	0.4	0.2	

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 25-07147	
Soils Ltd	
~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	
~Project / Job Ref: 22035	
~Order No: 22035/AS	
Reporting Date: 13/08/2025	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
785372	WS103	None Supplied	1.10	16.1	Light brown clay
785373	WS105	None Supplied	0.70	16.6	Orange clay
785374	WS108	None Supplied	2.20	16.5	Beige sandy clay

Moisture content is part of procedure E003 & is not an accredited test

Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 25-07147

Soils Ltd

~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED

~Project / Job Ref: 22035

~Order No: 22035/AS

Reporting Date: 13/08/2025

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazine followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

List of HWOL Acronyms and Operators
DETS Report No: 25-07147
Soils Ltd
~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED
~Project / Job Ref: 22035
~Order No: 22035/AS
Reporting Date: 13/08/2025

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH 2D Total but with humics mathematically subtracted
#2	EH 2D Total but with fatty acids mathematically subtracted
	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS Total or EH CU+HS Total
~	Sample details provided by customer and can affect the validity of results

Det - Acronym

Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Certificate Key

Symbol	Description
F	Filtered sample
UF	Unfiltered sample
D	Dried sample
AR	As received sample
RL	Reporting limit
~	Sample details provided by customer and can affect the validity of results
M/S	Missing Sample
*	The Dutch 10 PAH compounds consist of Naphthalene, Anthracene, Phenanthrene, Fluoranthene, Benz(a)anthracene, Chrysene, Benzo(k)fluoranthene, Benzo(a)pyrene, Benzo(g,h,i)perylene, and Indeno(1,2,3-cd)pyrene
**	Total EPA-16 PAHs consist of the following polycyclic aromatic hydrocarbons: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, and Benzo(ghi)perylene.
***	Total WAC-17 PAHs consist of the following polycyclic aromatic hydrocarbons: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz (a,h)anthracene, Benzo(ghi)perylene and Coronene.
^	No sampling date provided; unable to confirm if samples are within acceptable holding times
M	MCERTS accredited test
U	UKAS accredited test

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ME17 2JN
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DETS Report No: 25-07148

Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED

Project / Job Ref: 22035

Order No: 22035/AS

Sample Receipt Date: 06/08/2025

Sample Scheduled Date: 07/08/2025

Report Issue Number: 1

Reporting Date: 15/08/2025



Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

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Soil Analysis Certificate						
DETS Report No: 25-07148	~Date Sampled	28/07/25	28/07/25	28/07/25	28/07/25	29/07/25
Soils Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~TP / BH No	WS101	WS102	WS103	WS104	WS106
~Project / Job Ref: 22035	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 22035/AS	~Depth (m)	0.35	0.10	0.20	0.20	0.50
Reporting Date: 15/08/2025	DETS Sample No	785375	785376	785377	785378	785379

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)	(n)	(n)
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.2	7.0	7.6	6.5	6.9
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1		
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1		
Organic Matter (SOM)	%	< 0.1	MCERTS	1	4.6	5.4	3.1	1.2
Arsenic (As)	mg/kg	< 2	MCERTS	43	6	3	7	5
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.2	0.3	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	22	11	17	16	14
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	36	8	8	10	11
Lead (Pb)	mg/kg	< 3	MCERTS	33	47	32	19	9
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	93	17	26	7	6
Selenium (Se)	mg/kg	< 2	MCERTS	2.2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	96	19	18	36	27
Zinc (Zn)	mg/kg	< 3	MCERTS	65	104	47	31	190
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Soil Analysis Certificate						
DETS Report No: 25-07148	~Date Sampled	29/07/25	29/07/25			
Soils Ltd	~Time Sampled	None Supplied	None Supplied			
~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~TP / BH No	WS103	WS108			
~Project / Job Ref: 22035	~Additional Refs	None Supplied	None Supplied			
~Order No: 22035/AS	~Depth (m)	2.40	0.20			
Reporting Date: 15/08/2025	DETS Sample No	785380	785381			

Determinand	Unit	RL	Accreditation	(n)		
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	
pH	pH Units	N/a	MCERTS	6.4	7.2	
Total Cyanide	mg/kg	< 1	NONE	< 1		
Free Cyanide	mg/kg	< 1	NONE	< 1		
Organic Matter (SOM)	%	< 0.1	MCERTS	0.7	3	
Arsenic (As)	mg/kg	< 2	MCERTS	23	9	
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.2	0.4	
Chromium (Cr)	mg/kg	< 2	MCERTS	22	15	
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	
Copper (Cu)	mg/kg	< 4	MCERTS	21	29	
Lead (Pb)	mg/kg	< 3	MCERTS	14	376	
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS	45	9	
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	
Vanadium (V)	mg/kg	< 1	MCERTS	45	28	
Zinc (Zn)	mg/kg	< 3	MCERTS	61	144	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	

Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 25-07148	~ Date Sampled	28/07/25	28/07/25	28/07/25	28/07/25	29/07/25
Soils Ltd	~ Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~ Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~ TP / BH No	WS101	WS102	WS103	WS104	WS106
~ Project / Job Ref: 22035	~ Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~ Order No: 22035/AS	~ Depth (m)	0.35	0.10	0.20	0.20	0.50
Reporting Date: 15/08/2025	DETS Sample No	785375	785376	785377	785378	785379

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)	(n)	(n)
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	3.17	1.91	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	5.51	8.68	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	5.38	8.87	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	70.70	120	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	5.86	16.80	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	68.80	160	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	56.70	124	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	18.90	53.60	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	20.20	51.30	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	18.30	55.90	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	6	20.30	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	15.30	49.60	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	7.78	26	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	1.81	4.69	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	6.80	24.60	< 0.1	< 0.1
**Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	311	726	< 1.6	< 1.6

Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 25-07148	~ Date Sampled	29/07/25	29/07/25			
Soils Ltd	~ Time Sampled	None Supplied	None Supplied			
~ Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~ TP / BH No	WS103	WS108			
~ Project / Job Ref: 22035	~ Additional Refs	None Supplied	None Supplied			
~ Order No: 22035/AS	~ Depth (m)	2.40	0.20			
Reporting Date: 15/08/2025	DETS Sample No	785380	785381			

Determinand	Unit	RL	Accreditation	(n)		
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	
Fluorene	mg/kg	< 0.1	MCERTS	0.18	< 0.1	
Phenanthrene	mg/kg	< 0.1	MCERTS	0.41	0.35	
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	
Fluoranthene	mg/kg	< 0.1	MCERTS	0.40	0.75	
Pyrene	mg/kg	< 0.1	MCERTS	0.32	0.71	
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.33	
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.42	
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.52	
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.18	
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.53	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.43	
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	0.41	
**Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	4.6	

Soil Analysis Certificate - EPH Texas Banded						
DETS Report No: 25-07148	~ Date Sampled	28/07/25	28/07/25	28/07/25	28/07/25	29/07/25
Soils Ltd	~ Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~ Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~ TP / BH No	WS101	WS102	WS103	WS104	WS106
~ Project / Job Ref: 22035	~ Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~ Order No: 22035/AS	~ Depth (m)	0.35	0.10	0.20	0.20	0.50
Reporting Date: 15/08/2025	DETS Sample No	785375	785376	785377	785378	785379

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)	(n)	(n)
EPH Texas (C6 - C8) : HS 1D MS Total	mg/kg	< 0.05	NONE				< 0.05	< 0.05
EPH Texas (>C8 - C10) : EH 1D Total	mg/kg	< 1	MCERTS				< 1	< 1
EPH Texas (>C10 - C12) : EH 1D Total	mg/kg	< 1	MCERTS				< 1	< 1
EPH Texas (>C12 - C16) : EH 1D Total	mg/kg	< 1	MCERTS				< 1	< 1
EPH Texas (>C16 - C21) : EH 1D Total	mg/kg	< 1	MCERTS				< 1	< 1
EPH Texas (>C21 - C40) : EH 1D Total	mg/kg	< 6	MCERTS				< 6	< 6
EPH Texas (C6 - C40) : HS 1D MS+EH 1D Total	mg/kg	< 6	NONE				< 6	< 6

Soil Analysis Certificate - EPH Texas Banded						
DETS Report No: 25-07148	~ Date Sampled	29/07/25	29/07/25			
Soils Ltd	~ Time Sampled	None Supplied	None Supplied			
~ Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~ TP / BH No	WS103	WS108			
~ Project / Job Ref: 22035	~ Additional Refs	None Supplied	None Supplied			
~ Order No: 22035/AS	~ Depth (m)	2.40	0.20			
Reporting Date: 15/08/2025	DETS Sample No	785380	785381			

Determinand	Unit	RL	Accreditation	(n)			
EPH Texas (C6 - C8) : HS 1D MS Total	mg/kg	< 0.05	NONE		< 0.05		
EPH Texas (>C8 - C10) : EH 1D Total	mg/kg	< 1	MCERTS		< 1		
EPH Texas (>C10 - C12) : EH 1D Total	mg/kg	< 1	MCERTS		< 1		
EPH Texas (>C12 - C16) : EH 1D Total	mg/kg	< 1	MCERTS		< 1		
EPH Texas (>C16 - C21) : EH 1D Total	mg/kg	< 1	MCERTS		2		
EPH Texas (>C21 - C40) : EH 1D Total	mg/kg	< 6	MCERTS		13		
EPH Texas (C6 - C40) : HS 1D MS+EH 1D Total	mg/kg	< 6	NONE		14		

Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 25-07148	~ Date Sampled	28/07/25	28/07/25	28/07/25	29/07/25
Soils Ltd	~ Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
~ Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~ TP / BH No	WS101	WS102	WS103	WS103
~ Project / Job Ref: 22035	~ Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
~ Order No: 22035/AS	~ Depth (m)	0.35	0.10	0.20	2.40
Reporting Date: 15/08/2025	DETS Sample No	785375	785376	785377	785380

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)	(n)
Aliphatic >C5 - C6 : HS 1D MS AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS 1D MS AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH CU 1D AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	63
Aliphatic >C10 - C12 : EH CU 1D AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	71
Aliphatic >C12 - C16 : EH CU 1D AL	mg/kg	< 3	MCERTS	< 3	< 3	10	96
Aliphatic >C16 - C21 : EH CU 1D AL	mg/kg	< 3	MCERTS	< 3	< 3	9	< 3
Aliphatic >C21 - C34 : EH CU 1D AL	mg/kg	< 10	MCERTS	< 10	< 10	70	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	88	230
Aromatic >C5 - C7 : HS 1D MS AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS 1D MS AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	8
Aromatic >C10 - C12 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	5	3	63
Aromatic >C12 - C16 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	43	77	143
Aromatic >C16 - C21 : EH CU 1D AR	mg/kg	< 3	MCERTS	< 3	181	579	6
Aromatic >C21 - C35 : EH CU 1D AR	mg/kg	< 10	MCERTS	< 10	180	994	15
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	408	1653	235
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42	408	1741	465

Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 25-07148	~ Date Sampled	28/07/25	28/07/25	28/07/25	29/07/25	
Soils Ltd	~ Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
~ Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~ TP / BH No	WS101	WS102	WS103	WS103	
~ Project / Job Ref: 22035	~ Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
~ Order No: 22035/AS	~ Depth (m)	0.35	0.10	0.20	2.40	
Reporting Date: 15/08/2025	DETS Sample No	785375	785376	785377	785380	

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)	
Benzene : HS 1D MS	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Toluene : HS 1D MS	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Ethylbenzene : HS 1D MS	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
p & m-xylene : HS 1D MS	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
o-xylene : HS 1D MS	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
MTBE : HS 1D MS	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5

Soil Analysis Certificate - PCB (7 Congeners)						
DETS Report No: 25-07148	~ Date Sampled	28/07/25	28/07/25	28/07/25	29/07/25	
Soils Ltd	~ Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
~ Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~ TP / BH No	WS101	WS102	WS103	WS103	
~ Project / Job Ref: 22035	~ Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
~ Order No: 22035/AS	~ Depth (m)	0.35	0.10	0.20	2.40	
Reporting Date: 15/08/2025	DETS Sample No	785375	785376	785377	785380	

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)	
PCB Congener 28	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 52	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 101	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 118	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 138	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 153	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 180	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008
Total PCB (7 Congeners)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1

Soil Analysis Certificate - Sample Descriptions

DETS Report No: 25-07148	
Soils Ltd	
~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	
~Project / Job Ref: 22035	
~Order No: 22035/AS	
Reporting Date: 15/08/2025	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
785375	WS101	None Supplied	0.35	12.1	Light brown sandy gravel with stones
785376	WS102	None Supplied	0.10	5.5	Light brown sandy gravel with stones and vegetation
785377	WS103	None Supplied	0.20	2.3	Grey sandy gravel with stones
785378	WS104	None Supplied	0.20	7.7	Light brown sandy gravel with stones and vegetation
785379	WS106	None Supplied	0.50	7.3	Light brown sandy gravel with stones
785380	WS103	None Supplied	2.40	21.7	Light brown sandy clay with stones
785381	WS108	None Supplied	0.20	4.4	Light brown sandy gravel with stones and brick

Moisture content is part of procedure E003 & is not an accredited test

Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 25-07148

Soils Ltd

~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED

~Project / Job Ref: 22035

~Order No: 22035/AS

Reporting Date: 15/08/2025

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazine followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

List of HWOL Acronyms and Operators

DETS Report No: 25-07148

Soils Ltd

~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED

~Project / Job Ref: 22035

~Order No: 22035/AS

Reporting Date: 15/08/2025

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH 2D Total but with humics mathematically subtracted
#2	EH 2D Total but with fatty acids mathematically subtracted
	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS Total or EH CU+HS Total
~	Sample details provided by customer and can affect the validity of results

Benzene - HS 1D MS
EPH Texas (C10 - C12) - EH 1D Total
EPH Texas (C12 - C16) - EH 1D Total
EPH Texas (C16 - C21) - EH 1D Total
EPH Texas (C21 - C40) - EH 1D Total
EPH Texas (C6 - C40) - HS 1D MS+EH 1D Total
EPH Texas (C6 - C8) - HS 1D MS Total
EPH Texas (C8 - C10) - EH 1D Total
Ethylbenzene - HS 1D MS
MTBE - HS 1D MS
TPH CWG - Aliphatic >C10 - C12 - EH CU 1D AL
TPH CWG - Aliphatic >C12 - C16 - EH CU 1D AL
TPH CWG - Aliphatic >C16 - C21 - EH CU 1D AL
TPH CWG - Aliphatic >C21 - C34 - EH CU 1D AL
TPH CWG - Aliphatic >C5 - C6 - HS 1D MS AL
TPH CWG - Aliphatic >C6 - C8 - HS 1D MS AL
TPH CWG - Aliphatic >C8 - C10 - EH CU 1D AL
TPH CWG - Aliphatic C5 - C34 - HS 1D MS+EH CU 1D AL
TPH CWG - Aromatic >C10 - C12 - EH CU 1D AR
TPH CWG - Aromatic >C12 - C16 - EH CU 1D AR
TPH CWG - Aromatic >C16 - C21 - EH CU 1D AR
TPH CWG - Aromatic >C21 - C35 - EH CU 1D AR
TPH CWG - Aromatic >C5 - C35 - HS 1D MS+EH CU 1D AR
TPH CWG - Aromatic >C5 - C7 - HS 1D MS AR
TPH CWG - Aromatic >C7 - C8 - HS 1D MS AR
TPH CWG - Aromatic >C8 - C10 - EH CU 1D AR
TPH CWG - Total >C5 - C35 - HS 1D MS+EH CU 1D Total
Toluene - HS 1D MS
m & p-xylene - HS 1D MS
o-Xylene - HS 1D MS

Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Certificate Key

Symbol	Description
F	Filtered sample
UF	Unfiltered sample
D	Dried sample
AR	As received sample
RL	Reporting limit
~	Sample details provided by customer and can affect the validity of results
M/S	Missing Sample
*	The Dutch 10 PAH compounds consist of Naphthalene, Anthracene, Phenanthrene, Fluoranthene, Benz(a)anthracene, Chrysene, Benzo(k)fluoranthene, Benzo(a)pyrene, Benzo(g,h,i)perylene, and Indeno(1,2,3-cd)pyrene
**	Total EPA-16 PAHs consist of the following polycyclic aromatic hydrocarbons: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, and Benzo(ghi)perylene.
***	Total WAC-17 PAHs consist of the following polycyclic aromatic hydrocarbons: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(ghi)perylene and Coronene.
^	No sampling date provided; unable to confirm if samples are within acceptable holding times
n	Please note that we are MCERTS soil accredited (UK soils only) for sand, loam, and clay, and UKAS accredited for groundwater, tap water, surface water, and generated leachates. Other matrices are outside our scope of accreditation.
S	Subcontracted analysis
M	MCERTS accredited test
U	UKAS accredited test

Alex Stratford
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Thomas Telford House - Unit 11
Sun Valley Business Park
Winnall Close
Winchester
SO23 0LB

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DETS Report No: 25-07364

Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED

Project / Job Ref: 22035

Order No: 22035/AS

Sample Receipt Date: 14/08/2025

Sample Scheduled Date: 14/08/2025

Report Issue Number: 1

Reporting Date: 20/08/2025


Ela Mysiara
Quality Manager

Dates of laboratory activities for each tested analyte are available upon request.

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

Soil Analysis Certificate						
DETS Report No: 25-07364	~Date Sampled	28/07/25	28/07/25	28/07/25	28/07/25	29/07/25
Soils Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~TP / BH No	BH1	BH1	BH1	BH1	BH1
~Project / Job Ref: 22035	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 22035/AS	~Depth (m)	1.00	5.00	8.00	11.00	14.00
Reporting Date: 20/08/2025	DETS Sample No	786289	786290	786291	786292	786293

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	MCERTS	7.0	7.0	7.3	7.4	7.9
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	< 200	< 200	< 200	< 200	< 200
Total Sulphate as SO ₄	%	< 0.02	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	17	< 10	10	13	13
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.02	< 0.01	0.01	0.01	0.01
Total Sulphur	%	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ammonium as NH ₄	mg/kg	< 0.5	MCERTS	64.1	< 0.5	1.1	1.3	5.5
Ammonium as NH ₄	mg/l	< 0.05	MCERTS	6.41	< 0.05	0.11	0.13	0.55
W/S Chloride (2:1)	mg/kg	< 1	MCERTS	16	15	24	26	19
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS	7.8	7.6	12.2	12.9	9.5
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS	4	< 3	< 3	5	3
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS	1.8	< 1.5	< 1.5	2.3	1.6
W/S Magnesium	mg/l	< 0.1	NONE	0.2	0.3	3.3	3.2	3

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Analysis carried out on the dried sample is corrected for the stone content

Soil Analysis Certificate						
DETS Report No: 25-07364	~Date Sampled	29/07/25	29/07/25	29/07/25	30/07/25	30/07/25
Soils Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	~TP / BH No	BH2	BH2	BH2	BH2	BH2
~Project / Job Ref: 22035	~Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Order No: 22035/AS	~Depth (m)	1.50	4.00	7.00	10.00	13.00
Reporting Date: 20/08/2025	DETS Sample No	786294	786295	786296	786297	786298

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	MCERTS	7.0	7.4	8.1	8.0	7.9
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	317	< 200	< 200	< 200	< 200
Total Sulphate as SO ₄	%	< 0.02	MCERTS	0.03	< 0.02	< 0.02	< 0.02	< 0.02
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	52	12	15	16	15
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.05	0.01	0.02	0.02	0.02
Total Sulphur	%	< 0.02	NONE	0.02	< 0.02	< 0.02	< 0.02	0.03
Ammonium as NH ₄	mg/kg	< 0.5	MCERTS	32.9	< 0.5	2.6	6.1	1.7
Ammonium as NH ₄	mg/l	< 0.05	MCERTS	3.29	< 0.05	0.26	0.61	0.17
W/S Chloride (2:1)	mg/kg	< 1	MCERTS	17	16	22	27	27
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS	8.6	7.8	11.2	13.6	13.7
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS	5	< 3	< 3	< 3	< 3
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS	2.3	< 1.5	< 1.5	< 1.5	< 1.5
W/S Magnesium	mg/l	< 0.1	NONE	5	1.7	2.1	2.4	2.9

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Analysis carried out on the dried sample is corrected for the stone content

Soil Analysis Certificate - Sample Descriptions

DETS Report No: 25-07364	
Soils Ltd	
~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED	
~Project / Job Ref: 22035	
~Order No: 22035/AS	
Reporting Date: 20/08/2025	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
\$ 786289	BH1	None Supplied	1.00	18.8	Grey clay
\$ 786290	BH1	None Supplied	5.00	12.9	Light grey sandy clay
\$ 786291	BH1	None Supplied	8.00	11.3	Light brown clay
\$ 786292	BH1	None Supplied	11.00	11.5	Light grey clay
\$ 786293	BH1	None Supplied	14.00	12.7	Light grey clay
\$ 786294	BH2	None Supplied	1.50	18.4	Brown clay
\$ 786295	BH2	None Supplied	4.00	9.6	Red clay
\$ 786296	BH2	None Supplied	7.00	12	Light grey clay
\$ 786297	BH2	None Supplied	10.00	13.1	Light grey clay
\$ 786298	BH2	None Supplied	13.00	9.8	Light grey clay

Moisture content is part of procedure E003 & is not an accredited test

Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 25-07364

Soils Ltd

~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED

~Project / Job Ref: 22035

~Order No: 22035/AS

Reporting Date: 20/08/2025

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazine followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

List of HWOL Acronyms and Operators
DETS Report No: 25-07364
Soils Ltd
~Site Reference: Padnell Grange, Padnell Road, Cowplain, Hampshire, PO8 8ED
~Project / Job Ref: 22035
~Order No: 22035/AS
Reporting Date: 20/08/2025

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH 2D Total but with humics mathematically subtracted
#2	EH 2D Total but with fatty acids mathematically subtracted
	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS Total or EH CU+HS Total
~	Sample details provided by customer and can affect the validity of results

Det - Acronym

Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Certificate Key

Symbol	Description
F	Filtered sample
UF	Unfiltered sample
D	Dried sample
AR	As received sample
RL	Reporting limit
~	Sample details provided by customer and can affect the validity of results
M/S	Missing Sample
*	The Dutch 10 PAH compounds consist of Naphthalene, Anthracene, Phenanthrene, Fluoranthene, Benz(a)anthracene, Chrysene, Benzo(k)fluoranthene, Benzo(a)pyrene, Benzo(g,h,i)perylene, and Indeno(1,2,3-cd)pyrene
**	Total EPA-16 PAHs consist of the following polycyclic aromatic hydrocarbons: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, and Benzo(ghi)perylene.
***	Total WAC-17 PAHs consist of the following polycyclic aromatic hydrocarbons: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(ghi)perylene and Coronene.
^	No sampling date provided; unable to confirm if samples are within acceptable holding times
M	MCERTS accredited test
U	UKAS accredited test

Appendix E.3 General Assessment Criteria

HUMAN HEALTH RISK ASSESSMENT

Introduction

The statutory definition of contaminated land was initially defined in the Environmental Protection Act 1990, ref. 1.1, which was introduced by the Environment Act 1995, ref. 1.2, and retained in the Environment Act 2021, ref 1.3, as;

‘Land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that –

- (a) significant harm is being caused or there is a significant possibility of such harm being caused; or
- (b) pollution of controlled waters is being, or is likely to be, caused.’

The UK guidance on the assessment of contaminated land has developed as a direct result of the introduction of these Acts. The technical guidance supporting the original legislation was summarised in a number of key documents collectively known as the Contaminated Land Reports (CLRs). These have since been replaced or superseded by Land Contamination Risk Management (LCRM) 2021, ref 1.4 produced and administrated by the Environment Agency online through the .GOV.uk website <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm> .

However, the basic definitions, methodology and guidance remain essentially the same utilizing the UK Contaminated Land Exposure Assessment Models (CLEA) as within the original CLR and planning guidance it replaces or supersedes.

In establishing whether a site fulfils the statutory definition of ‘contaminated land’ it remains necessary to identify, whether a pollutant linkage exists in respect of the land in question and whether the pollutant linkage:

- is resulting in significant harm being caused to the identified receptor in the pollutant linkage,
- presents a significant possibility of significant harm being caused to that receptor,
- is resulting in the pollution of the controlled waters which constitute the receptor, or
- is likely to result in such pollution.

A ‘pollutant linkage’ may therefore be defined as the confirmation of a link between a contaminant ‘source’ and a vulnerable at risk ‘receptor’ by means of a ‘pathway’ and that the risk is potentially significant. If there is no complete linkage, risk defaults to low to negligible and can never be potentially significant.

Assessment Methodology

A four-stage assessment process is followed for identifying potential pollutant linkages on a site. These stages are summarised in the table below:

No.	Process	Description
1	Hazard Identification	Establishing contaminant sources, pathways and receptors (the conceptual model).
2	Hazard Assessment	Analysing the potential for unacceptable risks (what linkages could be present, what could be the effects).
3	Risk Estimation	Trying to establish the magnitude and probability of the possible consequences (what degree of harm might result and to what receptors, and how likely is it).
4	Risk Evaluation	Deciding whether the risk is unacceptable in the context of existing and future proposals.

Stages 1 and 2 develop an initial '*conceptual model*' based upon information collated from desk-based available and existing site information and a walkover of the site as recommended in BS10175 and LCRM. The formation of any conceptual model is an iterative process and as such it should be updated and refined throughout each phase of the project to reflect any additional information obtained and unknowns being resolved and identify the potential contaminants of concern at the site, i.e. those with the potential to cause significant harm to identified receptors.

The extent of the desk studies and enquiries to be conducted should be in general accordance with BS10175 and other UK guidance to produce an initial conceptual model highlighting the known potential risks, remaining unknowns and contaminants of concern. The information from these enquiries is presented in a desk study or preliminary report with recommendations, if necessary, for further work based upon the conceptual model findings and any identified or unresolved unknowns.

If potential pollutant linkages or potentially significant unknowns are identified within the initial conceptual model, further site investigation and report will be recommended and usually required under planning. Such investigation should be based on and driven by the findings of the initial conceptual model and planned in general accordance with BS10175, LCRM and other current UK guidance where relevant. The number of exploratory holes and samples collected for analysis should be consistent with the size, extent and nature of the site, the identified contaminants of concern and the level of initial risk identified in the initial conceptual model. This will enable a contamination risk assessment to be conducted in accordance with current UK requirements, at which point the conceptual model can be updated and any relevant pollutant linkages can be further quantified and any remaining unknowns resolved. As previously this is an iterative process that may highlight or require additional investigation to resolve to the satisfaction of the regulator.

A two-stage investigation process may therefore be more appropriate where time constraints are less of an issue with the first intrusive investigation being conducted as an initial or screening assessment to confirm or validate the presence of potential sources on site identified in the initial conceptual model and to investigate if additional unknown sources not previously identified are present. This helps to define the scope, extent and requirements of a second more refined and targeted investigation to delineate wherever possible the extent of the identified contamination, contaminants of concern and/or remaining unknowns.

All site works should be undertaken in general accordance with the British Standards BS 10175, ref. 5, for environmental only investigations and BS 5930:2015, ref. 1.6, in the case of combined Geoenvironmental and/or Geotechnical investigations.

The results of analysis are compared initially against generic guidance values which are dependent on the proposed end-use of the development and which must ultimately be based on traceable, scientifically valid and justified exposure and chemical data using the UKCLEA methodology.

The end-use and therefore potential exposure pathways may be defined as one of the following under current UK guidance;

- Residential with homegrown produce i.e. typical low rise and low-density housing with gardens where vegetables and fruits may be grown for home consumption.
- Residential without homegrown produce i.e. low-density housing where no gardens are present where vegetables and fruits could be grown for home consumption.
- Allotments – i.e. areas where vegetables and fruits are grown for home consumption but are not specifically associated with a residential property.
- Public open space residential – i.e. grassed areas adjacent and/or directly related to high density housing and other common or communal open areas on which underlying soils could be exposed but on which vegetables and fruits are not grown for consumption.
- Public open space – i.e. areas such as parks, playing fields and other recreational areas to which public access is possible but otherwise to which there is no direct residential linkage.
- Commercial – i.e. industrial premises where there is limited exposure to soil and residents are not present on site.

Standard Land-use Scenarios

The standard land-use scenarios used to develop exposure models are further detailed in the following sections:

Residential with homegrown produce

Generic scenario assumes a house built on a ground bearing slab with a private garden having a lawn, flowerbeds and a small fruit and vegetable patch.

-
- Critical receptor is assumed to be a young female child (zero to six years old)
 - Exposure pathways include direct soil and indoor dust ingestion, consumption of home-grown produce and any adhering soil, skin contact with soils and indoor dust and inhalation of indoor and outdoor dust and vapours.
-

A sub-set of the Residential land-use is **Residential without Homegrown produce**. The generic scenario assumes low density housing with communal landscaped gardens where the consumption of homegrown vegetables will not occur and the pathways of direct ingestion and produce inputs are suitably moderated.

Allotments

Areas of open space commonly made available to local users but remote from residential properties, but on which tenants may grow fruit and vegetables for their own consumption. Typically, there are a number of plots to a site which may have a total area of up to 1 hectare. The tenants are assumed to be adults and that young children make only occasional accompanied visits.

Although some allotment holders may choose to keep animals on allotments, potential exposure to animal products is not currently considered within the CLEA model.

-
- Critical receptor is a young female child (zero to six years old)
 - Exposure pathways include direct soil ingestion, consumption of homegrown produce and any adhering soil, skin contact with soils and inhalation of outdoor dust and vapours but at reduced exposure levels reflecting non-residential status.
-

Commercial

This generic scenario assumes a typical commercial or light industrial property at which employees spend most time indoors and are involved in office-based or relatively light physical work.

-
- Critical receptor is a working female adult (aged 16 to 65 years old).
 - Exposure duration is over working lifetime
 - Exposure pathways include direct soil and indoor dust ingestion, skin contact with soils and dusts and inhalation of dust and vapours but exposure reduced to reflect non-residential nature and general lack of open spaces.
-

Public Open Space within Residential Area

This generic scenario refers to any grassed area up to 0.05 ha that is associated with residential properties but is not for their exclusive use and on which no fruit or vegetables are grown for home consumption.

-
- Grassed area of up to 0.05 ha and a considerable proportion of this (up to 50%) may be bare soil which can be interacted with directly
 - Predominantly used by children for play and/or access
 - Sufficiently close proximity to home for tracking back of soil to occur, thus indoor exposure pathways apply
-

-
- older children chosen as the critical receptor on basis that they will use site most frequently (age class 4-9 years)
-
- ingestion rate assumed to be 75 mg.day⁻¹
-

Public Open Space Park

This generic scenario refers to any public park or grassed space that is more than 0.5ha in area:

-
- Public park (>0.5 ha), predominantly grassed and may also contain children's play equipment and border areas of soil containing flowers or shrubs (75% assumed cover)
-
- Female child age classes 1-6
-
- Soil ingestion rate of 50 mg.day⁻¹
-
- Occupancy period outdoors = 2 hours.day⁻¹
-
- Exposure frequency of 170 days.year⁻¹ for age classes 2-18 and 85 days.year⁻¹ for age class 1
-
- Outdoor exposure pathways only (no tracking back of soils).
-

Human Health Generic Quantitative Risk Assessment (GQRA) involves the comparison of contaminant concentrations measured in soil at the site with Generic Assessment Criteria (GAC) generated using the CLEA model based on the exposure and land use scenario assumptions noted above.

GAC's are deliberately conservative values adopted to ensure that they are applicable to the majority of possible contaminated sites and below which there is considered a low to negligible risk to identified human health receptors, i.e. there can be no harm. These values may be published Contaminated Land Exposure Assessment Model (CLEA) derived GAC's derived by a competent third party or the Environment Agency / DEFRA. It is imperative to the risk assessor to understand the uncertainties and limitations associated with these GAC's to ensure that they are used appropriately.

Where the adoption of a GAC is not appropriate, for instance when the intended land-use is at variance the CLEA standard land-uses or the contaminant is susceptible to wide variation depending on factors such as form and bioavailability, then a Detailed Quantitative Risk Assessment (DQRA) may be undertaken to develop site specific or remediation values for relevant soil contaminants based on site and contaminant specific conditions.

In 2014, the publication of Category 4 Screening Levels (C4SL), refs 1.8 and 1.9, as part of the Defra-funded research project SP1010, included modifications to certain exposure assumptions documented within EA Science Report SC050221/SR3 (herein after referred to as SR3) ref 1.7 used in the generation of SGVs. C4SL were published for six substances (cadmium, arsenic, benzene, benzo(a)pyrene, chromium VI and lead) for a sandy loam soil type with 6% soil organic matter, based on a low level of toxicological concern. Where a C4SL has been published, Soils Limited has adopted them as GAC for these six substances.

For all other substances the soils will be compared to Suitable For Use Levels (S4ULs) published by LQM, ref. 1.10, which were developed for around 85 substances and are

intended to enable a screening assessment of the risks posed by soil quality on development sites. The updated LQM/CIEH GAC publication was developed to accommodate recent developments in the understanding of chemical, toxicological and routine exposure to soil-based contaminants.

Where no S4UL or C4SL is available, assessment criteria may be generated using the Contaminated Land Exposure Assessment (CLEA) Software Version 1.07, ref. 1.11, Toxicological and physico-chemical/fate and transport data used to generate the criteria has been derived from a hierarchy of data sources as follows:

1. Environment Agency or Department of Environment Food and Rural Affairs (DEFRA) documents;
2. Other documents produced by UK Government or state organisations;
3. European institution documents;
4. International organisation documents;
5. Foreign government institutions.

In the case of the majority of contaminants considered, the toxicological data has been drawn originally from the relevant CLR 9 TOX report, or updated toxicological data published by the Environment Agency (2009), where available. Where no TOX report is available reference has been made to appropriately determined health criteria values, derived from the above-noted hierarchy, as this is considered to represent appropriate peer reviewed data sources. Similarly, fate and transport data should also be determined by reference to appropriate sources and the CLEA model assumptions.

Chemical laboratory test results are processed as follows. A statistical analysis of the results is conducted, as detailed in CIEH and CL:AIRE 'Guidance on Comparing Soil Contamination Data with a Critical Concentration', ref. 1.12. Individual concentrations are then compared to the selected guideline values to identify and isolate concentrations of contaminants that are in excess of the selected screening low or no risk criteria.

Where the risk estimation identifies significant concentrations of one or more contaminants, further risk evaluation needs to be undertaken often as a site specific DQRA in line with current guidance to determine and confirm if the identified exceedances are significant in the context of the proposed development or activity.

References

- 1.1 The Environmental Protection Act, Part IIA, Section 78, DoE 1990.
- 1.2 Environment Act 1995, Section 57, DoE 1995.
- 1.3 Environment Act 2021 OEP 2021.
- 1.4 Land Contamination Risk Management Gov.UK (EA) 2021
- 1.5 BS 10175: 2011+A2:2017 '*Investigation of potentially contaminated sites. Code of practice*', British Standards Institute, 2017
- 1.6 BS 5930: 2015+A1:2020 '*Code of practice for ground investigations*', British Standards Institute, 2015
- 1.7 Science Report SC050021/SR3 '*Updated technical background to the CLEA model*', Environment Agency, 2008
- 1.8 DEFRA SP1010: Development of Category 4 Screening Levels for the Assessment of Land Affected by Contamination, published March 2014.
- 1.9 Contaminated Land: Applications in Real Environment (CL:AIRE) (2014). '*Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination*', Revision 2, DEFRA research project SP1010.
- 1.10 The LQM/S4ULs for Human Health Risk Assessment, Nathanail P, McCaffery C, Gillett A, Ogden R, and Nathanail J, Land Quality Press, Nottingham, published 2015.
- 1.11 CLEA '*Software Version 1.071*' (downloaded from the CL:AIRE website , <https://www.claire.co.uk/home/news/44-risk-assessment/178-soil-guideline-values>)
- 1.12 CIEH '*Guidance on Comparing Soil Contamination Data with a Critical Concentration*', Chartered Institute of Environmental Health (CIEH) and Contaminated Land: Applications in Real Environments (CL:AIRE), May 2008.

Land Use			Residential With or Without Plant Uptake									Public Open Space (POS)											Name	Authority	Date
			With			Without			Allotments			Commercial			Residential			Park							
			SOM	1.0	2.5	6	1	2.5							6	1	2.5	6	1	2.5	6	1			
Type	Contaminants	Species	Year																						
Metals	Antimony		2010					550						7500								EIC/AGS/ CL:AIRE	EIC/AGS/ CL:AIRE	2010	
	Arsenic		2014			37		40			49			640		79		168				C4SL	DEFRA	2014	
			2015			37		40			40			640		79		170				S4UL	LQM/CIEH	2015	
	Barium		2010					1300						22000								EIC/AGS/ CL:AIRE	EIC/AGS/ CL:AIRE	2010	
	Beryllium		2015			1.7		1.7			35			12		2.2		63				S4UL	LQM/CIEH	2015	
	Boron		2015			290		11000			45			240000		21000		46000				S4UL	LQM/CIEH	2015	
	Cadmium		2015			11		85			1.9			190		120		532				S4UL	LQM/CIEH	2015	
	Chromium	III	2014			26		149			4.9			410		220		880				C4SL	DEFRA	2014	
			2015			910		910		18000		8600		1500		33000		S4UL	LQM/CIEH	2015					
			VI	2014			21		21			170			49		23		250				C4SL	DEFRA	2014
		VI	2015			6		6			1.8			33		7.7		220				S4UL	LQM/CIEH	2015	
	Copper		2015			2400		7100			520			68000		12000		44000				S4UL	LQM/CIEH	2015	
	Lead		2014*			82-210		130-310			30-84			1100-6000		270-760		580-1400				C4SL	DEFRA	2014	
	Mercury	Elemental	2012			1.0		1.0			26			26				210				DEFRA	2012		
			2015			1.2		1.2			21			58		16		30				S4UL	LQM/CIEH	2015	
		Inorganic	2012			170		170			80			36000				SGV				DEFRA	2012		
			2015			40		56			19			1100		120		240				S4UL	LQM/CIEH	2015	
		Methyl	2012			11		11			8			410				SGV				DEFRA	2012		
			2015			11		15			6			320		40		68				S4UL	LQM/CIEH	2015	
	Molybdenum		2010					670						17000				EIC/AGS/ CL:AIRE	EIC/AGS/ CL:AIRE			2010			
	Nickel		2012			130		130			230			1800				SGV				DEFRA	2012		
			2015			130		180			53			980		230		800				S4UL	LQM/CIEH	2015	
	Selenium		2012			350		595			120			13000				SGV				DEFRA	2012		
			2015			250		430			88			12000		1100		1800				S4UL	LQM/CIEH	2015	
	Vanadium		2015			410		1200			91			9000		2000		5000				S4UL	LQM/CIEH	2015	
	Zinc		2015			3700		40000			620			730000		81000		170000				S4UL	LQM/CIEH	2015	
BTEx & MTBE	Benzene		2012			0.33		0.33			0.07			95				SGV				DEFRA	2012		
			2014			0.87		3.3			0.18			98		140		230				C4SL	DEFRA	2014	
			2015	0.087	0.17	0.37	0.38	0.7	1.4	0.017	0.034	0.075	27	47	90	72	72	73	90	100	110	S4UL	LQM/CIEH	2015	
	Toluene		2012			610		610			120			4400				SGV				DEFRA	2012		
			2015	130	290	660	880	1900	3900	22	51	120	56000	110000	180000	56000	56000	56000	87000	95000	100000	S4UL	LQM/CIEH	2015	
	Ethylbenzene		2012			350		350			90			2800				SGV				DEFRA	2012		
			2015	47	110	260	83	190	440	16	39	91	5700	13000	27000	24000	24000	25000	17000	22000	27000	S4UL	LQM/CIEH	2015	
	Xylenes	o-xylene	2012			250		250			160			2600				SGV				DEFRA	2012		
			2015	60	140	330	88	210	480	28	67	160	6600	15000	33000	41000	42000	43000	17000	24000	33000	S4UL	LQM/CIEH	2015	
		m-xylene	2012			240		240			180			3500				SGV				DEFRA	2012		
			2015	59	140	320	82	190	450	31	74	170	6200	14000	31000	41000	42000	43000	17000	24000	32000	S4UL	LQM/CIEH	2015	
		p-xylene	2012			230		230			160			3200				SGV				DEFRA	2012		
			2015	56	130	310	79	180	430	29	69	160	5900	14000	30000	41000	42000	43000	17000	23000	31000	S4UL	LQM/CIEH	2015	
Petroleum Hydrocarbons Fractions	Aliphatic >C5 - C6		2015	42	78	160	42	78	160	730	1700	3900	3200	5900	12000	570000	590000	600000	95000	5900	12000	S4UL	LQM/CIEH	2015	
	Aliphatic >C6 - C8		2015	100	230	530	100	230	530	2300	5600	13000	7800	17000	40000	600000	610000	620000	150000	17000	40000	S4UL	LQM/CIEH	2015	
	Aliphatic >C8 - C10		2015	27	65	150	27	65	150	320	770	1700	2000	4800	11000	13000	13000	13000	14000	4800	11000	S4UL	LQM/CIEH	2015	
	Aliphatic >C10 - C12		2015	130	330	760	130	330	770	2200	4400	7300	9700	23000	47000	13000	13000	13000	21000	23000	47000	S4UL	LQM/CIEH	2015	
	Aliphatic >C12 - C16		2015	1100	2400	4300	1100	2400	4400	11000	13000	13000	59000	82000	90000	13000	13000	13000	25000	82000	90000	S4UL	LQM/CIEH	2015	
	Aliphatic >C16 - C35		2015	65000	92000	110000	65000	92000	110000	260000	270000	270000	1600000	1700000	1800000	250000	250000	250000	450000	170000	180000	S4UL	LQM/CIEH	2015	
	Aliphatic >C35 - C44		2015	65000	92000	140000	65000	92000	110000	260000	270000	270000	1600000	1700000	1800000	250000	250000	250000	450000	170000	180000	S4UL	LQM/CIEH	2015	
	Aromatic >C5 - C7		2015	70	140	300	370	690	1400	13	27	57	26000	46000	86000	56000	56000	56000	76000	84000	92000	S4UL	LQM/CIEH	2015	
	Aromatic >C7 - C8		2015	130	290	660	860	1800	3900	22	51	120	56000	110000	180000	56000	56000	56000	87000	95000	100000	S4UL	LQM/CIEH	2015	

Land Use			Residential With or Without Plant Uptake									Public Open Space (POS)									Name	Authority	Date	
			With			Without			Allotments			Commercial			Residential			Park						
			SOM	1.0	2.5	6	1	2.5							6	1	2.5	6	1	2.5				6
Type	Contaminants	Species	Year																					
	Aromatic >C8 - C10		2015	34	83	190	47	110	270	8.6	21	51	3500	8100	17000	5000	5000	5000	7200	8500	9200	S4UL	LQM/CIEH	2015
	Aromatic >C10 - C12		2015	74	180	380	250	590	1200	13	31	74	16000	28000	34000	5000	5000	5000	9200	9700	10000	S4UL	LQM/CIEH	2015
	Aromatic >C12 - C16		2015	140	330	660	1800	2300	2500	23	57	130	36000	37000	38000	5100	5100	5000	10000	10000	10000	S4UL	LQM/CIEH	2015
	Aromatic >C16 - C21		2015	260	540	930	1900	1900	1900	46	110	260	28000	28000	28000	3800	3800	3800	7600	7700	7800	S4UL	LQM/CIEH	2015
	Aromatic >C21 - C35		2015	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000	3800	3800	3800	7800	7800	7900	S4UL	LQM/CIEH	2015
	Aromatic >C34 - C44		2015	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000	3800	3800	3800	7800	7800	7900	S4UL	LQM/CIEH	2015
	Aliphatic + Aromatic >C44 - C70			1600	1800	1900	1900	1900	1900	1200	2100	3000	28000	28000	28000	3800	28000	28000	7800	7800	7900	S4UL	LQM/CIEH	2015
Polycyclic Aromatic Hydrocarbons (PAH' s) (mg/kg)	Acenaphthene		2015	210	510	1100	3000	4700	6000	34	85	200	84000	97000	100000	15000	15000	15000	29000	29000	29000	S4UL	LQM/CIEH	2015
	Acenaphthylene		2015	170	420	920	2900	4600	6000	28	69	160	83000	97000	100000	15000	15000	15000	29000	29000	29000	S4UL	LQM/CIEH	2015
	Anthracene		2015	2400	5400	11000	31000	35000	37000	380	950	2200	520000	54000	540000	74000	74000	74000	150000	150000	150000	S4UL	LQM/CIEH	2015
	Benzo(a)anthracene		2015	7.2	11	13	11	14	15	2.9	6.5	13	170	170	180	29	29	29	49	56	62	S4UL	LQM/CIEH	2015
	Benzo(a)pyrene		2014			5		5.3			5.7		76		10		21	C4SL	DEFRA	2014				
			2015	2.2	2.7	3	3.2	3.2	3.2	0.79	2	3.5	35	35	36	5.7	5.7	5.7	11	12	13	S4UL	LQM/CIEH	2015
	Benzo(b)fluoranthene		2015	2.6	3.3	3.7	3.9	4.0	4.0	0.99	2.1	3.9	44	44	45	7.1	7.2	7.2	13	15	16	S4UL	LQM/CIEH	2015
	Benzo(ghi)perylene		2015	320	340	350	360	360	360	290	470	640	3900	4000	4000	640	640	640	1400	1500	1600	S4UL	LQM/CIEH	2015
	Benzo(k)fluoranthene		2015	77	93	100	110	110	110	37	75	130	1200	1200	1200	190	190	190	370	410	440	S4UL	LQM/CIEH	2015
	Chrysene		2015	15	22	27	30	31	32	4.1	9.4	19	350	350	350	57	57	57	93	110	120	S4UL	LQM/CIEH	2015
	Dibenz(a,h)anthracene		2015	0.24	0.28	0.3	0.31	0.32	0.32	0.14	0.27	0.43	3.5	3.6	3.6	0.57	0.57	0.58	1.1	1.3	1.4	S4UL	LQM/CIEH	2015
	Fluoranthene		2015	280	560	890	1500	1600	1600	52	130	290	23000	23000	23000	3100	3100	3100	6300	6300	6400	S4UL	LQM/CIEH	2015
	Fluorene		2015	170	400	860	2800	3800	4500	27	67	160	63000	68000	71000	9900	9900	9900	20000	20000	20000	S4UL	LQM/CIEH	2015
	Indeno(1,2,3-cd)pyrene		2015	27	36	41	45	46	46	9.5	21	39	500	510	510	82	82	82	150	170	180	S4UL	LQM/CIEH	2015
	Naphthalene		2015	2.3	5.6	13	2.3	5.6	13	4.1	10	24	190	460	1100	4900	4900	4900	1200	1900	3000	S4UL	LQM/CIEH	2015
	Phenanthrene		2015	95	220	440	1300	1500	1500	15	38	90	22000	22000	23000	3100	3100	3100	6200	6200	6300	S4UL	LQM/CIEH	2015
	Pyrene		2015	620	1200	2000	3700	3800	3800	110	270	620	54000	54000	54000	7400	7400	7400	15000	15000	15000	S4UL	LQM/CIEH	2015
	Coal Tar (Bap as surrogate matter)		2015	0.79	0.98	1.1	1.2	1.2	1.2	0.32	0.67	1.2	15	15	15	2.2	2.2	2.2	4.4	4.7	4.8	S4UL	LQM/CIEH	2015
Chloroalkanes & alkenes	1,2 Dichloroethane		2015	0.0071	0.011	0.019	0.0092	0.013	0.023	0.0046	0.0083	0.016	0.67	0.97	1.7	29	29	29	21	24	28	S4UL	LQM/CIEH	2015
	1,1,1 Trichloroethane		2015	8.8	18	39	9	18	40	48	110	240	660	1300	3000	140000	140000	140000	57000	76000	100000	S4UL	LQM/CIEH	2015
	1,1,2,2 Tetrachloroethane		2015	1.6	3.4	7.5	3.9	8	17	0.41	0.89	2	270	550	1100	1400	1400	1400	1800	2100	2300	S4UL	LQM/CIEH	2015
	1,1,1,2 Tetrachloroethane		2015	1.2	2.8	6.4	1.5	3.5	8.2	0.79	1.9	4.4	110	250	560	1400	1400	1400	1500	1800	2100	S4UL	LQM/CIEH	2015
	Tetrachloroethene (PCE)		2015	0.18	0.39	0.9	0.18	0.4	0.92	0.65	1.5	3.6	19	42	95	1400	1400	1400	810	1100	1500	S4UL	LQM/CIEH	2015
			2021	0.31	0.7	1.6	0.32	0.71	1.6	2	4.8	11	24	55	130	3200	3300	3400	1400	1900	2500	C4SL	CLAIRE	2021
	Tetrachloromethane (Carbon Tetrachloride)		2015	0.026	0.056	0.13	0.026	0.056	0.13	0.45	1	2.4	2.9	6.3	14	890	920	950	190	270	400	S4UL	LQM/CIEH	2015
	Trichloroethene (TCE)		2015	0.016	0.034	0.075	0.017	0.036	0.08	0.041	0.091	0.21	1.2	2.6	5.7	120	120	120	70	91	120	S4UL	LQM/CIEH	2015
			2021	0.0093	0.02	0.043	0.0097	0.02	0.045	0.032	0.072	0.16	0.73	1.5	3.4	76	78	79	41	54	69	C4SL	CLAIRE	2021
	Trichloromethane (Chloroform)		2015	0.91	1.7	3.4	1.2	2.1	4.2	0.42	0.83	1.7	99	170	350	2500	2500	2500	2600	2800	3100	S4UL	LQM/CIEH	2015
	Vinyl Chloride (Cloroethene)		2015	0.00064	0.00087	0.0014	0.00077	0.001	0.0015	0.00055	0.001	0.0018	0.059	0.077	0.12	3.5	3.5	3.5	4.8	5	5.4	S4UL	LQM/CIEH	2015
			2021	0.0064	0.01	0.017	0.015	0.019	0.029	0.0017	0.0031	0.0058	1.1	1.4	2.2	7.8	7.8	7.8	18	19	19	C4SL	CLAIRE	2021
Explosives	2,4,6 Trinitrotoluene		2015	1.6	3.7	8.1	65	66	66	0.24	0.58	1.4	1000	1000	1000	130	130	130	260	270	270	S4UL	LQM/CIEH	2015
	RDX (Hexogen/Cyclonite/1,3,5-trinitro-1,3,5-triazacyclohexane)		2015	120	250	540	13000	13000	13000	17	38	85	210000	210000	210000	26000	26000	27000	49000	51000	53000	S4UL	LQM/CIEH	2015
	HMX (Octogen/1,3,5,7-tetrenitro-1,3,5,7-tetrazacyclo-octane)		2015	5.7	13	26	6700	6700	6700	0.86	1.9	3.9	110000	110000	110000	13000	13000	13000	23000	23000	24000	S4UL	LQM/CIEH	2015
Pesticides	Aldrin		2015	5.7	6.6	7.1	7.3	7.4	7.5	3.2	6.1	9.6	170	170	170	18	18	18	30	31	31	S4UL	LQM/CIEH	2015
	Dieldrin		2015	0.97	2	3.5	7	7.3	7.4	0.17	0.41	0.96	170	170	170	18	18	18	30	30	31	S4UL	LQM/CIEH	

Land Use			Residential With or Without Plant Uptake									Public Open Space (POS)											Name	Authority	Date	
			With			Without			Allotments			Commercial			Residential						Park					
			home-grown produce			home-grown produce									1			2.5			6					1
Type	Contaminants	Species	Year	SOM	1.0	2.5	6	1	2.5	6	1	2.5	6	1	2.5	6	1	2.5	6	1	2.5	6				
Chlorobenzenes	Chlorobenzene		2015	0.46	1	2.4	0.46	1	2.4	5.9	14	32	56	130	290	11000	13000	14000	1300	2000	2900	S4UL	LQM/CIEH	2015		
	1,2-Dichlorobenzene		2015	23	55	130	24	57	130	94	230	540	2000	4800	11000	90000	95000	98000	24000	36000	51000	S4UL	LQM/CIEH	2015		
	1,3-Dichlorobenzene		2015	0.4	1	2.3	0.44	1.1	2.5	0.25	0.6	1.5	30	73	170	300	300	300	390	440	470	S4UL	LQM/CIEH	2015		
	1,4-Dichlorobenzene		2015	61	150	350	61	150	350	15	37	88	4400	10000	25000	17000	17000	1700	36000	36000	36000	S4UL	LQM/CIEH	2015		
	1,2,3,-Trichlorobenzene		2015	1.5	3.6	8.6	1.5	3.7	8.8	4.7	12	28	102	250	590	1800	1800	1800	770	1100	1600	S4UL	LQM/CIEH	2015		
	1,2,4,-Trichlorobenzene		2015	2.6	6.4	15	2.6	6.4	15	55	140	320	220	530	1300	15000	17000	19000	1700	2600	4000	S4UL	LQM/CIEH	2015		
	1,3,5,-Trichlorobenzene		2015	0.33	0.81	1.9	0.33	0.81	1.9	4.7	12	28	23	55	130	1700	1700	1800	380	580	860	S4UL	LQM/CIEH	2015		
	1,2,3,4,-Tetrachlorobenzene		2015	15	36	78	24	56	120	4.4	11	26	1700	3080	4400	830	830	830	1500	1600	1600	S4UL	LQM/CIEH	2015		
	1,2,3,5,- Tetrachlobenzene		2015	0.66	1.6	3.7	0.75	1.9	4.3	0.38	0.9	2.2	49	120	240	78	79	79	110	120	130	S4UL	LQM/CIEH	2015		
	1,2,4, 5,- Tetrachlobenzene		2015	0.33	0.77	1.6	0.73	1.7	3.5	0.06	0.16	0.37	42	72	96	13	13	13	25	26	26	S4UL	LQM/CIEH	2015		
	Pentachlrobenzene		2015	5.8	12	22	19	30	38	1.2	3.1	7	640	770	830	100	100	100	190	190	190	S4UL	LQM/CIEH	2015		
	Hexachlorobenzene		2015	1.8	3.3	4.9	4.1	5.7	6.7	0.47	1.1	2.5	110	120	120	16	16	16	30	30	30	S4UL	LQM/CIEH	2015		
Phenols & Chlorophenols	Phenols		2012	420			420			280			3200			SGV					DEFRA		2012			
			2015	120	200	380	440	690	1200	23	42	83	440	690	1300	440	690	1300	440	690	1300	S4UL	LQM/CIEH	2015		
	Chlorophenols (4 Congeners)		2015	0.87	2	4.5	94	150	210	0.13	0.3	0.7	3500	4000	4300	620	620	620	1100	1100	1100	S4UL	LQM/CIEH	2015		
	Pentachlorophenols		2015	0.22	0.52	1.2	27	29	31	0.03	0.08	0.19	400	400	400	60	60	60	110	120	120	S4UL	LQM/CIEH	2015		
Others	Carbon Disulphide		2015	0.14	0.29	0.62	0.14	0.29	0.62	4.8	10	23	11	22	47	11000	11000	12000	1300	1900	2700	S4UL	LQM/CIEH	2015		
	Hexachloro-1,3-Butadiene		2015	0.29	0.7	1.6	0.32	0.78	1.8	0.25	0.61	1.4	31	66	120	25	25	25	48	50	51	S4UL	LQM/CIEH	2015		
	Sum of PCDDs, PCDFs and dioxin-like PCB's.		2012	8			8			8			240			SGV					DEFRA		2012			
NOTE																										
	Priority	Guideline (mg kg ⁻¹)																								
	1	Site Specific Assessment Criteria (SSAC) (Soils Limited)																								
	2	2014: Category 4 Screening Level (C4SL) (Contaminated Land: Application in Real Environment (CL:ARE), 2014 and 2021) * Use upper range value for Lead unless otherwise indicated																								
	3	2012: Soil Guideline Value (SGV) (Environment Agency, 2009)																								
	4	2015: Suitable 4 Use Level (S4UL) (Nathanail et al, 2015)																								
For Generic Risk Assessment, the values in Bold should have priority unless site specific, Client or regulatory requirements dictate otherwise – which must be justified																										
Table reviewed January 2024																										

Appendix F Gas Monitoring

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS101			Cloud Cover			Overcast
Date:	3.9.25			Precipitation		Slight	
Start Time:	3:38:00 PM			Ground Conditions		Moist	

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3	
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)	Base of Hole (m bgl)
Dip meter:*		or	Single Phase	DRY	4.95M.

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							987			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	1.3	19.8	<2	<1	<1		<0.1	19*
	00:01:00	<0.1	<1		00:00:30	<0.1	1.8	19.0	<2	<1	<1		<0.1	
	00:02:00	<0.1	<1		00:01:00	<0.1	1.9	18.9	<2	<1	<1		<0.1	
	00:03:00	<0.1	<1		00:02:00	<0.1	1.8	18.9	<2	<1	<1		<0.1	
	00:04:00	<0.1	<1		00:03:00	<0.1	1.7	18.9	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	1.6	18.9	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	1.6	18.9	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS103			Cloud Cover			Overcast
Date:	3.9.25			Precipitation		Slight	
Start Time:	3:05:00 PM			Ground Conditions		Moist	

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	1.9M.		4.8m.	

Step 1				Step 2											
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)		
mea	00:00:05	<0.1	<1		Atmosphere							987			
	00:00:30	<0.1	<1		mea	00:00:05	<0.1	1.7	19.3	<2	<1	<1		1.0	19*
	00:01:00	<0.1	<1			00:00:30	<0.1	2.0	19.1	<2	<1	<1		1.0	
	00:02:00	<0.1	<1			00:01:00	<0.1	2.0	19.1	<2	<1	<1		0.7	
	00:03:00	<0.1	<1			00:02:00	<0.1	1.9	19.1	<2	<1	<1		0.2	
	00:04:00	<0.1	<1			00:03:00	<0.1	1.7	19.3	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1			00:04:00	<0.1	1.2	19.8	<2	<1	<1		<0.1	
	00:06:00					00:05:00	<0.1	1.1	19.8	<2	<1	<1		<0.1	
	00:07:00					00:06:00									
	00:08:00					00:07:00									
	00:09:00					00:08:00									
	00:10:00					00:09:00									
00:11:00				00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS105			Cloud Cover			Overcast
Date:	3.9.25			Precipitation		Slight	
Start Time:	3:15:00 PM			Ground Conditions		Moist	

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3	
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)	Base of Hole (m bgl)
Dip meter:*		or	Single Phase	3.9M.	4.95m.

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							987			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	1.2	19.9	<2	<1	<1		<0.1	19*
	00:01:00	<0.1	<1		00:00:30	<0.1	1.9	17.4	<2	<1	<1		<0.1	
	00:02:00	<0.1	<1		00:01:00	<0.1	1.8	16.9	<2	<1	<1		<0.1	
	00:03:00	<0.1	<1		00:02:00	<0.1	1.6	16.6	<2	<1	<1		<0.1	
	00:04:00	<0.1	<1		00:03:00	<0.1	1.7	16.9	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	1.7	17.2	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	1.6	17.4	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS108			Cloud Cover			Overcast
Date:	3.9.25			Precipitation		Slight	
Start Time:	3:25:00 PM			Ground Conditions		Moist	

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3	
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)	Base of Hole (m bgl)
Dip meter:*		or	Single Phase	2.0m.	3.25m.

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							987			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	1.5	18.4	<2	<1	<1		<0.1	19*
	00:01:00	<0.1	<1		00:00:30	<0.1	1.0	19.3	<2	<1	<1		<0.1	
	00:02:00	<0.1	<1		00:01:00	<0.1	1.4	19.4	<2	<1	<1		<0.1	
	00:03:00	<0.1	<1		00:02:00	<0.1	1.5	19.4	<2	<1	<1		<0.1	
	00:04:00	<0.1	<1		00:03:00	<0.1	1.4	19.2	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	1.3	19.4	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	1.3	19.4	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS101			Cloud Cover			Overcast
Date:	3.9.25			Precipitation		Slight	
Start Time:	3:38:00 PM			Ground Conditions		Moist	

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3	
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)	Base of Hole (m bgl)
Dip meter:*		or	Single Phase	DRY	4.95M.

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							987			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	1.3	19.8	<2	<1	<1		<0.1	19*
	00:01:00	<0.1	<1		00:00:30	<0.1	1.8	19.0	<2	<1	<1		<0.1	
	00:02:00	<0.1	<1		00:01:00	<0.1	1.9	18.9	<2	<1	<1		<0.1	
	00:03:00	<0.1	<1		00:02:00	<0.1	1.8	18.9	<2	<1	<1		<0.1	
	00:04:00	<0.1	<1		00:03:00	<0.1	1.7	18.9	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	1.6	18.9	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	1.6	18.9	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS103			Cloud Cover			Overcast
Date:	3.9.25			Precipitation		Slight	
Start Time:	3:05:00 PM			Ground Conditions		Moist	

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3	
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)	Base of Hole (m bgl)
Dip meter:*		or	Single Phase	1.9M.	4.8m.

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							987			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	1.7	19.3	<2	<1	<1		1.0	19*
	00:01:00	<0.1	<1		00:00:30	<0.1	2.0	19.1	<2	<1	<1		1.0	
	00:02:00	<0.1	<1		00:01:00	<0.1	2.0	19.1	<2	<1	<1		0.7	
	00:03:00	<0.1	<1		00:02:00	<0.1	1.9	19.1	<2	<1	<1		0.2	
	00:04:00	<0.1	<1		00:03:00	<0.1	1.7	19.3	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	1.2	19.8	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	1.1	19.8	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS105			Cloud Cover			Overcast
Date:	3.9.25			Precipitation		Slight	
Start Time:	3:15:00 PM			Ground Conditions		Moist	

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3	
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)	Base of Hole (m bgl)
Dip meter:*		or	Single Phase	3.9M.	4.95m.

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							987			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	1.2	19.9	<2	<1	<1		<0.1	19*
	00:01:00	<0.1	<1		00:00:30	<0.1	1.9	17.4	<2	<1	<1		<0.1	
	00:02:00	<0.1	<1		00:01:00	<0.1	1.8	16.9	<2	<1	<1		<0.1	
	00:03:00	<0.1	<1		00:02:00	<0.1	1.6	16.6	<2	<1	<1		<0.1	
	00:04:00	<0.1	<1		00:03:00	<0.1	1.7	16.9	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	1.7	17.2	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	1.6	17.4	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS108			Cloud Cover			Overcast
Date:	3.9.25			Precipitation		Slight	
Start Time:	3:25:00 PM			Ground Conditions		Moist	

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3	
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)	Base of Hole (m bgl)
Dip meter:*		or	Single Phase	2.0m.	3.25m.

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							987			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	1.5	18.4	<2	<1	<1		<0.1	19*
	00:01:00	<0.1	<1		00:00:30	<0.1	1.0	19.3	<2	<1	<1		<0.1	
	00:02:00	<0.1	<1		00:01:00	<0.1	1.4	19.4	<2	<1	<1		<0.1	
	00:03:00	<0.1	<1		00:02:00	<0.1	1.5	19.4	<2	<1	<1		<0.1	
	00:04:00	<0.1	<1		00:03:00	<0.1	1.4	19.2	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	1.3	19.4	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	1.3	19.4	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnel grange			Wind		Light		
BH/WS ID:	WS101			Cloud Cover		Slight		
Date:	14/08/2025			Precipitation	Dry			
Start Time:	2:08:41 PM			Ground Conditions	Dry			

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*	Watchgas poli	or		Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	Dry		4.92	

Step 1			Step 2									
Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere			Atmosphere							1019		25
mea	00:00:05	<0.1	<1	00:00:05	<0.1	<2	0.9	20.8	<1	<1	<0.1	
	00:00:30	<0.1	<1	00:00:30	<0.1	<2	1.6	20.3	<1	<1	<0.1	
	00:01:00	<0.1	<1	00:01:00	<0.1	<2	1.7	20.1	<1	<1	<0.1	
	00:02:00	<0.1	<1	00:02:00	<0.1	<2	1.8	20.0	<1	<1	<0.1	
	00:03:00	<0.1	<1	00:03:00	<0.1	<2	1.8	20.0	<1	<1	<0.1	
	00:04:00			00:04:00								
	00:05:00			00:05:00								
	00:06:00			00:06:00								
	00:07:00			00:07:00								
	00:08:00			00:08:00								
	00:09:00			00:09:00								
00:10:00			00:10:00									

Samples		Notes;
1 Litre Plastic		ONE HOLE PER SHEET. PLEASE RECORD GAS CONCENTRATIONS AT INTERVALS INDICATED ON THE SHEET OR UNTIL THE READINGS STABILISE.
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnel grange			Wind		Light		
BH/WS ID:	WS103			Cloud Cover		Slight		
Date:	14/08/2025			Precipitation	Dry			
Start Time:	2:39:11 PM			Ground Conditions	Dry			

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*	Watchgas poli	or		Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	2.48		4.80	

Step 1			Step 2									
Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere			Atmosphere							1019		25
mea	00:00:05	<0.1	<1	mea	00:00:05	<0.1	<2	0.3	20.6	<1	<1	<0.1
	00:00:30	<0.1	<1		00:00:30	<0.1	<2	2.0	20.3	<1	<1	<0.1
	00:01:00	<0.1	<1		00:01:00	<0.1	<2	2.7	19.5	<1	<1	<0.1
	00:02:00	<0.1	<1		00:02:00	<0.1	<2	3.0	19.1	<1	<1	<0.1
	00:03:00	<0.1	<1		00:03:00	<0.1	<2	3.0	19.1	<1	<1	<0.1
	00:04:00				00:04:00							
	00:05:00				00:05:00							
	00:06:00				00:06:00							
	00:07:00				00:07:00							
	00:08:00				00:08:00							
	00:09:00				00:09:00							
00:10:00			00:10:00									

Samples		Notes;
1 Litre Plastic		ONE HOLE PER SHEET. PLEASE RECORD GAS CONCENTRATIONS AT INTERVALS INDICATED ON THE SHEET OR UNTIL THE READINGS STABILISE.
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnel grange			Wind		Light		
BH/WS ID:	WS105			Cloud Cover		Slight		
Date:	14/08/2025			Precipitation	Dry			
Start Time:	2:48:24 PM			Ground Conditions	Dry			

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*	Watchgas poli	or		Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	3.81		4.92	

Step 1			Step 2									
Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere			Atmosphere							1019		25
mea	00:00:05	<0.1	<1	00:00:05	<0.1	<2	0.3	20.6	<1	<1	<0.1	
	00:00:30	<0.1	<1	00:00:30	<0.1	<2	2.1	20.2	<1	<1	<0.1	
	00:01:00	<0.1	<1	00:01:00	<0.1	<2	2.2	19.6	<1	<1	<0.1	
	00:02:00	<0.1	<1	00:02:00	<0.1	<2	2.1	19.4	<1	<1	<0.1	
	00:03:00	<0.1	<1	00:03:00	<0.1	<2	2.1	19.4	<1	<1	<0.1	
	00:04:00			00:04:00								
	00:05:00			00:05:00								
	00:06:00			00:06:00								
	00:07:00			00:07:00								
	00:08:00			00:08:00								
	00:09:00			00:09:00								
00:10:00			00:10:00									

Samples		Notes;
1 Litre Plastic		ONE HOLE PER SHEET. PLEASE RECORD GAS CONCENTRATIONS AT INTERVALS INDICATED ON THE SHEET OR UNTIL THE READINGS STABILISE.
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnel grange			Wind		Light		
BH/WS ID:	WS108			Cloud Cover		Slight		
Date:	14/08/2025			Precipitation	Dry			
Start Time:				Ground Conditions	Dry			

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*	Watchgas poli	or		Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	2.01		3.19	

Step 1			Step 2									
Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere			Atmosphere							1019		25
mea	00:00:05	<0.1	<1	mea	00:00:05	<0.1	<2	0.2	20.8	<1	<1	<0.1
	00:00:30	<0.1	<1		00:00:30	<0.1	<2	0.9	20.6	<1	<1	<0.1
	00:01:00	<0.1	<1		00:01:00	<0.1	<2	1.0	20.4	<1	<1	<0.1
	00:02:00	<0.1	<1		00:02:00	<0.1	<2	1.0	20.4	<1	<1	<0.1
	00:03:00	<0.1	<1		00:03:00	<0.1	<2	1.0	20.4	<1	<1	<0.1
	00:04:00				00:04:00							
	00:05:00				00:05:00							
	00:06:00				00:06:00							
	00:07:00				00:07:00							
	00:08:00				00:08:00							
	00:09:00				00:09:00							
00:10:00			00:10:00									

Samples		Notes;
1 Litre Plastic		ONE HOLE PER SHEET. PLEASE RECORD GAS CONCENTRATIONS AT INTERVALS INDICATED ON THE SHEET OR UNTIL THE READINGS STABILISE.
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS101			Cloud Cover			Cloudy
Date:	12.9.25			Precipitation	Dry		
Start Time:	2:16:00 PM			Ground Conditions	Dry		

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	Dry.		4.95M.	

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1		Atmosphere							1003		
	00:00:30	<0.1	<1		mea	00:00:05	<0.1	0.3	20.5	<2	<1	<1	<0.1	18*
	00:01:00	<0.1	<1			00:00:30	<0.1	2.1	18.2	<2	<1	<1	<0.1	
	00:02:00	<0.1	<1			00:01:00	<0.1	2.1	18.1	<2	<1	<1	<0.1	
	00:03:00	<0.1	<1			00:02:00	<0.1	2.1	18.0	<2	<1	<1	<0.1	
	00:04:00	<0.1	<1			00:03:00	<0.1	2.1	18.1	<2	<1	<1	<0.1	
	00:05:00	<0.1	<1			00:04:00	<0.1	2.0	18.1	<2	<1	<1	<0.1	
	00:06:00					00:05:00	<0.1	1.9	18.1	<2	<1	<1	<0.1	
	00:07:00					00:06:00								
	00:08:00					00:07:00								
	00:09:00					00:08:00								
	00:10:00					00:09:00								
00:11:00				00:10:00										

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS103			Cloud Cover			Cloudy
Date:	12.9.25			Precipitation	Dry		
Start Time:	1:26:00 PM			Ground Conditions	Dry		

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	1.95M.		4.8m.	

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1		Atmosphere							1003		
	00:00:30	<0.1	<1		mea	00:00:05	<0.1	0.3	19.9	<2	<1	<1	<0.1	18*
	00:01:00	<0.1	<1			00:00:30	<0.1	2.1	17.4	<2	<1	<1	<0.1	
	00:02:00	<0.1	<1			00:01:00	<0.1	2.3	17.4	<2	<1	<1	0.6	
	00:03:00	<0.1	<1			00:02:00	<0.1	2.2	17.9	<2	<1	<1	<0.1	
	00:04:00	<0.1	<1			00:03:00	<0.1	2.1	18.0	<2	<1	<1	<0.1	
	00:05:00	<0.1	<1			00:04:00	<0.1	2.1	17.9	<2	<1	<1	<0.1	
	00:06:00					00:05:00	<0.1	2.1	17.8	<2	<1	<1	<0.1	
	00:07:00					00:06:00								
	00:08:00					00:07:00								
	00:09:00					00:08:00								
	00:10:00					00:09:00								
00:11:00				00:10:00										

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS105			Cloud Cover			Cloudy
Date:	12.9.25			Precipitation	Dry		
Start Time:	1:38:00 PM			Ground Conditions	Dry		

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3	
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)	Base of Hole (m bgl)
Dip meter:*		or	Single Phase	3.92M.	4.95m.

Step 1			
Monitoring interval	Flow L/hr	Dp Pa	SP mB
mea	00:00:05	<0.1	<1
	00:00:30	<0.1	<1
	00:01:00	<0.1	<1
	00:02:00	<0.1	<1
	00:03:00	<0.1	<1
	00:04:00	<0.1	<1
	00:05:00	<0.1	<1
	00:06:00		
	00:07:00		
	00:08:00		
	00:09:00		
	00:10:00		
00:11:00			

Step 2										
Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
Atmosphere							1003			
mea	00:00:05	<0.1	1.9	18.3	<2	<1	<1	<0.1	18*	
	00:00:30	<0.1	1.7	15.6	<2	<1	<1	<0.1		
	00:01:00	<0.1	1.7	15.8	<2	<1	<1	<0.1		
	00:02:00	<0.1	1.7	16.0	<2	<1	<1	<0.1		
	00:03:00	<0.1	1.7	16.2	<2	<1	<1	<0.1		
	00:04:00	<0.1	1.7	16.5	<2	<1	<1	<0.1		
	00:05:00	<0.1	1.7	16.6	<2	<1	<1	<0.1		
	00:06:00									
	00:07:00									
	00:08:00									
	00:09:00									
	00:10:00									

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	Padnell			Wind		Light	
BH/WS ID:	WS108			Cloud Cover			Cloudy
Date:	12.9.25			Precipitation	Dry		
Start Time:	1:49:00 PM			Ground Conditions	Dry		

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	2.0m.		2.95m.	

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1		Atmosphere							1003		
	00:00:30	<0.1	<1		mea	00:00:05	<0.1	1.3	18.3	<2	<1	<1	<0.1	18*
	00:01:00	<0.1	<1			00:00:30	<0.1	1.5	18.7	<2	<1	<1	<0.1	
	00:02:00	<0.1	<1			00:01:00	<0.1	1.6	18.2	<2	<1	<1	<0.1	
	00:03:00	<0.1	<1			00:02:00	<0.1	1.7	18.5	<2	<1	<1	<0.1	
	00:04:00	<0.1	<1			00:03:00	<0.1	1.6	18.5	<2	<1	<1	<0.1	
	00:05:00	<0.1	<1			00:04:00	<0.1	1.6	18.5	<2	<1	<1	<0.1	
	00:06:00					00:05:00	<0.1	1.6	18.5	<2	<1	<1	<0.1	
	00:07:00					00:06:00								
	00:08:00					00:07:00								
	00:09:00					00:08:00								
	00:10:00					00:09:00								
00:11:00				00:10:00										

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnell			Wind	Still			
BH/WS ID:	WS101			Cloud Cover				Overcast
Date:	10.10.25			Precipitation	Dry			
Start Time:	3:22:00 PM			Ground Conditions	Dry			

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	1.4M.		4.95M.	

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							1024			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	1.3	19.3	<2	<1	<1		<0.1	16*
	00:01:00	<0.1	<1		00:00:30	<0.1	1.3	19.0	<2	<1	<1		<0.1	
	00:02:00	<0.1	<1		00:01:00	<0.1	1.5	18.8	<2	<1	<1		<0.1	
	00:03:00	<0.1	<1		00:02:00	<0.1	1.6	18.7	<2	<1	<1		<0.1	
	00:04:00	<0.1	<1		00:03:00	<0.1	1.6	18.7	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	1.5	18.8	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	1.4	18.9	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnell			Wind	None			
BH/WS ID:	WS103			Cloud Cover				Overcast
Date:	10.10.25			Precipitation	Dry			
Start Time:	2:51:00 PM			Ground Conditions	Dry			

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	2.3M.		4.8m.	

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							1024			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	3.6	17.1	<2	<1	<1		<0.1	16*
	00:01:00	<0.1	<1		00:00:30	<0.1	3.3	16.4	<2	<1	<1		<0.1	
	00:02:00	<0.1	<1		00:01:00	<0.1	3.4	16.2	<2	<1	<1		<0.1	
	00:03:00	<0.1	<1		00:02:00	<0.1	3.3	16.2	<2	<1	<1		<0.1	
	00:04:00	<0.1	<1		00:03:00	<0.1	3.2	16.3	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	3.1	16.3	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	3.1	16.1	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnell			Wind	Still			
BH/WS ID:	WS105			Cloud Cover				Overcast
Date:	10.10.25			Precipitation	Dry			
Start Time:	3:01:00 PM			Ground Conditions	Dry			

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	4.1M.		4.95m.	

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							1024			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	2.2	18.0	<2	<1	<1		<0.1	16*
	00:01:00	<0.1	<1		00:00:30	<0.1	2.2	18.0	<2	<1	<1		<0.1	
	00:02:00	<0.1	<1		00:01:00	<0.1	2.2	18.0	<2	<1	<1		<0.1	
	00:03:00	<0.1	<1		00:02:00	<0.1	2.2	18.0	<2	<1	<1		<0.1	
	00:04:00	<0.1	<1		00:03:00	<0.1	2.2	18.0	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	2.2	18.0	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	2.2	18.0	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnell			Wind	Still			
BH/WS ID:	WS108			Cloud Cover				Overcast
Date:	10.10.25			Precipitation	Dry			
Start Time:	3:10:00 PM			Ground Conditions	Dry			

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	Watchgas Poli 2	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	2.2M.		2.95m.	

Step 1				Step 2										
Monitoring interval	Flow L/hr	Dp Pa	SP mB	Monitoring interval	CH ₄ % v/v	CO ₂ % v/v	O ₂ % v/v	LEL CH ₄ %	H ₂ S ppm	Co ppm	Ap mB	VOC (PPM)	Temp (°C)	
mea	00:00:05	<0.1	<1	Atmosphere							1024			
	00:00:30	<0.1	<1	mea	00:00:05	<0.1	1.7	18.8	<2	<1	<1		<0.1	18*
	00:01:00	<0.1	<1		00:00:30	<0.1	1.8	18.5	<2	<1	<1		<0.1	
	00:02:00	<0.1	<1		00:01:00	<0.1	2.0	18.3	<2	<1	<1		<0.1	
	00:03:00	<0.1	<1		00:02:00	<0.1	2.0	18.2	<2	<1	<1		<0.1	
	00:04:00	<0.1	<1		00:03:00	<0.1	2.0	18.2	<2	<1	<1		<0.1	
	00:05:00	<0.1	<1		00:04:00	<0.1	2.0	18.3	<2	<1	<1		<0.1	
	00:06:00				00:05:00	<0.1	1.9	18.3	<2	<1	<1		<0.1	
	00:07:00				00:06:00									
	00:08:00				00:07:00									
	00:09:00				00:08:00									
	00:10:00				00:09:00									
00:11:00			00:10:00											

Samples		Notes;
1 Litre Plastic		
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	padnell grange			Wind			Moderate
BH/WS ID:	WS101			Cloud Cover			Overcast
Date:	23/10/2025			Precipitation		Slight	
Start Time:	1:01:00 PM			Ground Conditions			Wet

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	watchgas Poli	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	0.24		4.93	

Step 1				Step 2									
Monitoring interval		Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere				Atmosphere							983		11
mea	00:00:05	<0.1	<1	mea	00:00:05	<0.1	<2	0.0	19.6	<1	<1	<0.1	
	00:00:30	<0.1	<1		00:00:30								
	00:01:00	<0.1	<1		00:01:00								
	00:02:00				00:02:00								
	00:03:00				00:03:00								
	00:04:00				00:04:00								
	00:05:00				00:05:00								
	00:06:00				00:06:00								
	00:07:00				00:07:00								
	00:08:00				00:08:00								
00:09:00			00:09:00										
00:10:00			00:10:00										

Samples		Notes;
1 Litre Plastic		Bailed water to 1.1m before starting test. Water sucked into pipe PID could not be conducted
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	padnell grange			Wind			Moderate
BH/WS ID:	WS103			Cloud Cover			overcast
Date:	23/10/2025			Precipitation		Slight	
Start Time:	1:10:00 PM			Ground Conditions			Wet

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	watchgas Poli	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	1.51		4.80	

Step 1			Step 2										
Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)	
Atmosphere			Atmosphere										
mea	00:00:05	<0.1	<1	mea	00:00:05	<0.1	<2	0.4	18.6	<1	<1	<0.1	11
	00:00:30	<0.1	<1		00:00:30	<0.1	<2	0.5	18.9	<1	<1	<0.1	
	00:01:00	<0.1	<1		00:01:00	<0.1	<2	0.6	18.9	<1	<1	<0.1	
	00:02:00				00:02:00	<0.1	<2	0.6	18.9	<1	<1	<0.1	
	00:03:00				00:03:00								
	00:04:00				00:04:00								
	00:05:00				00:05:00								
	00:06:00				00:06:00								
	00:07:00				00:07:00								
	00:08:00				00:08:00								
00:09:00			00:09:00										
00:10:00			00:10:00										

Samples		Notes;
1 Litre Plastic		ONE HOLE PER SHEET. PLEASE RECORD GAS CONCENTRATIONS AT INTERVALS INDICATED ON THE SHEET OR UNTIL THE READINGS STABILISE.
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	padnell grange			Wind			Moderate
BH/WS ID:	WS105			Cloud Cover			Overcast
Date:	23/10/2025			Precipitation		Slight	
Start Time:	1:24:00 PM			Ground Conditions			Wet

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*		or	watchgas Poli	Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	1.56		4.92	

Step 1			Step 2											
Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)		
Atmosphere			Atmosphere											
mea	00:00:05	<0.1	<1	mea	00:00:05	<0.1	<2	0.3	19.4	<1	<1	983	<0.1	11
	00:00:30	<0.1	<1		00:00:30	<0.1	<2	1.7	17.9	<1	<1	<0.1		
	00:01:00	<0.1	<1		00:01:00	<0.1	<2	1.9	16.9	<1	<1	<0.1		
	00:02:00				00:02:00	<0.1	<2	1.9	16.9	<1	<1	<0.1		
	00:03:00				00:03:00									
	00:04:00				00:04:00									
	00:05:00				00:05:00									
	00:06:00				00:06:00									
	00:07:00				00:07:00									
	00:08:00				00:08:00									
00:09:00			00:09:00											
00:10:00			00:10:00											

Samples		Notes;
1 Litre Plastic		ONE HOLE PER SHEET. PLEASE RECORD GAS CONCENTRATIONS AT INTERVALS INDICATED ON THE SHEET OR UNTIL THE READINGS STABILISE.
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Job Number:	22035			Weather	* Delete as appropriate		
Site Name:	padnell grange			Wind			Moderate
BH/WS ID:	WS108			Cloud Cover			Overcast
Date:	23/10/2025			Precipitation		Slight	
Start Time:	1:33:00 PM			Ground Conditions			Wet

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3	
PID:*		or	watchgas Poli	Depth to Water (m bgl)	Base of Hole (m bgl)
Dip meter:*		or	Single Phase	2.12	2.91

Step 1			Step 2											
Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)		
Atmosphere			Atmosphere											
mea	00:00:05	<0.1	<1	mea	00:00:05	<0.1	<2	0.1	19.2	<1	<1	983	<0.1	11
	00:00:30	<0.1	<1		00:00:30	<0.1	<2	1.3	18.8	<1	<1	<0.1		
	00:01:00	<0.1	<1		00:01:00	<0.1	<2	1.6	18.2	<1	<1	<0.1		
	00:02:00				00:02:00	<0.1	<2	1.8	17.7	<1	<1	<0.1		
	00:03:00				00:03:00	<0.1	<2	1.8	17.7	<1	<1	<0.1		
	00:04:00				00:04:00									
	00:05:00				00:05:00									
	00:06:00				00:06:00									
	00:07:00				00:07:00									
	00:08:00				00:08:00									
00:09:00			00:09:00											
00:10:00			00:10:00											

Samples		Notes;
1 Litre Plastic		ONE HOLE PER SHEET. PLEASE RECORD GAS CONCENTRATIONS AT INTERVALS INDICATED ON THE SHEET OR UNTIL THE READINGS STABILISE.
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Job Number:	22035
Site Name:	Padnell Grange
BH/WS ID:	WS1
Date:	6.11.25
Start Time:	1:11:00 PM

Weather	* Delete as appropriate			
Wind		Light		
Cloud Cover				Overcast
Precipitation	Dry			
Ground Conditions		Moist		

Gas Monitor:*	Gas Data GFM 435 11555	or	
PID:*	Multirae M01C011991	or	
Dip meter:*		or	Single Phase

Step 3	
Depth to Water (m bgl)	Base of Hole (m bgl)
0.20	5.00

Step 1		
Monitoring interval	Flow L/hr	DP Pa
Atmosphere		
mea	00:00:05	<0.1
	00:00:30	<0.1
	00:01:00	<0.1
	00:02:00	
	00:03:00	
	00:04:00	
	00:05:00	
	00:06:00	
	00:07:00	
	00:08:00	
	00:09:00	
	00:10:00	

Step 2										
Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)	
Atmosphere							997			13
mea	00:00:05	<0.1	<2	0.1	19.3	<1	<1	<0.1		
	00:00:30	<0.1	<2	0.1	19.5	<1	<1	<0.1		
	00:01:00	<0.1	<2	0.1	19.8	<1	<1	<0.1		
	00:02:00	<0.1	<2	0.1	19.8	<1	<1	<0.1		
	00:03:00	<0.1	<2	1.0	19.8	<1	<1	<0.1		
	00:04:00									
	00:05:00									
	00:06:00									
	00:07:00									
	00:08:00									
	00:09:00									
	00:10:00									

Samples	Notes;
1 Litre Plastic	Bailed water to 1.1m before starting test. Water sucked into pipe PID and stopped.
1 Litre Glass	
40ml Vial	
Gas sample (Tedlar bag etc)	

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnell Grange			Wind		Light		
BH/WS ID:	WS3			Cloud Cover				Overcast
Date:	6.11.25			Precipitation	Dry			
Start Time:				Ground Conditions		Moist		

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*	Multirae M01C011991	or		Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	1.69		4.90	

Step 1			Step 2										
Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)	
Atmosphere			Atmosphere							997		13	
mea	00:00:05	<0.1	<1	mea	00:00:05	<0.1	<2	0.1	19.3	<1	<1	<0.1	
	00:00:30	<0.1	<1		00:00:30	<0.1	<2	4.5	17.5	<1	<1	<0.1	
	00:01:00	<0.1	<1		00:01:00	<0.1	<2	4.5	15.2	<1	<1	<0.1	
	00:02:00				00:02:00	<0.1	<2	4.6	13.5	<1	<1	<0.1	
	00:03:00				00:03:00	<0.1	<2	4.5	13.1	<1	<1	<0.1	
	00:04:00				00:04:00	<0.1	<2	4.1	13.3	<1	<1	<0.1	
	00:05:00				00:05:00	<0.1	<2	3.6	14.0	<1	<1	<0.1	
	00:06:00				00:06:00								
	00:07:00				00:07:00								
	00:08:00				00:08:00								
	00:09:00				00:09:00								
00:10:00			00:10:00										

Samples		Notes;
1 Litre Plastic		ONE HOLE PER SHEET. PLEASE RECORD GAS CONCENTRATIONS AT INTERVALS INDICATED ON THE SHEET OR UNTIL THE READINGS STABILISE.
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnell Grange			Wind		Light		
BH/WS ID:	WS5			Cloud Cover				Overcast
Date:	6.11.25			Precipitation	Dry			
Start Time:				Ground Conditions		Moist		

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*	Multirae M01C011991	or		Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	3.86		5.00	

Step 1			Step 2										
Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)	
Atmosphere			Atmosphere							997		13	
mea	00:00:05	<0.1	<1	mea	00:00:05	<0.1	<2	0.1	19.4	<1	<1	<0.1	
	00:00:30	<0.1	<1		00:00:30	<0.1	<2	2.3	17.7	<1	<1	<0.1	
	00:01:00	<0.1	<1		00:01:00	<0.1	<2	2.4	16.5	<1	<1	<0.1	
	00:02:00	<0.1	<1		00:02:00	<0.1	<2	2.4	15.4	<1	<1	<0.1	
	00:03:00				00:03:00	<0.1	<2	2.4	15.2	<1	<1	<0.1	
	00:04:00				00:04:00	<0.1	<2	2.4	15.2	<1	<1	<0.1	
	00:05:00				00:05:00	<0.1	<2	2.4	15.2	<1	<1	<0.1	
	00:06:00				00:06:00								
	00:07:00				00:07:00								
	00:08:00				00:08:00								
	00:09:00				00:09:00								
00:10:00			00:10:00										

Samples		Notes;
1 Litre Plastic		ONE HOLE PER SHEET. PLEASE RECORD GAS CONCENTRATIONS AT INTERVALS INDICATED ON THE SHEET OR UNTIL THE READINGS STABILISE.
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Job Number:	22035			Weather	* Delete as appropriate			
Site Name:	Padnell Grange			Wind		Light		
BH/WS ID:	WS8			Cloud Cover				Overcast
Date:	6.11.25			Precipitation	Dry			
Start Time:				Ground Conditions		Moist		

Gas Monitor:*	Gas Data GFM 435 11555	or		Step 3			
PID:*	Multirae M01C011991	or		Depth to Water (m bgl)		Base of Hole (m bgl)	
Dip meter:*		or	Single Phase	2.00		3.00	

Step 1				Step 2										
Monitoring interval		Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)	
Atmosphere				Atmosphere							998		13	
mea	00:00:05	<0.1	<1	mea	00:00:05	<0.1	<2	0.1	19.5	<1	<1	<0.1		
	00:00:30	<0.1	<1		00:00:30	<0.1	<2	1.7	19.0	<1	<1	<0.1		
	00:01:00	<0.1	<1		00:01:00	<0.1	<2	1.9	18.0	<1	<1	<0.1		
	00:02:00	<0.1	<1		00:02:00	<0.1	<2	2.1	17.3	<1	<1	<0.1		
	00:03:00				00:03:00	<0.1	<2	2.0	17.0	<1	<1	<0.1		
	00:04:00				00:04:00	<0.1	<2	2.0	17.0	<1	<1	<0.1		
	00:05:00				00:05:00	<0.1	<2	2.0	17.0	<1	<1	<0.1		
	00:06:00				00:06:00									
	00:07:00				00:07:00									
	00:08:00				00:08:00									
	00:09:00				00:09:00									
00:10:00			00:10:00											

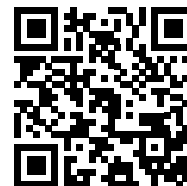
Samples		Notes;
1 Litre Plastic		ONE HOLE PER SHEET. PLEASE RECORD GAS CONCENTRATIONS AT INTERVALS INDICATED ON THE SHEET OR UNTIL THE READINGS STABILISE.
1 Litre Glass		
40ml Vial		
Gas sample (Tedlar bag etc)		

Appendix G HazWasteOnline Report

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



BIA36-XQW4E-J1Z0U

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in **pale yellow**.

Report is invalid if pages are removed.

Job name

22035

Description/Comments

Project

22035

Site

Padnell Grange, Padnell Road, Cowplain, Waterlooville, Hampshire, PO8 8ED

Classified by

Name: **Margaret Lo**
Date: **11 Sep 2025 14:34 GMT**
Telephone: **07467803676**
Company: **Soils Ltd**
Pool Innovation Centre
Redruth
Cornwall
TR15 3PL

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course
Hazardous Waste Classification

Date
06 Apr 2023

Next 3 year Refresher due by Apr 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Padnell Grange, Padnell Road, Cowplain, Waterlooville, Hampshire,

Post Code PO8 8ED

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Made Ground

Description of the specific process, sub-process and/or activity that created the waste

Made Ground

Description of the waste

Made Ground

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS101-0.35-28/07/2025	0.35	Non Hazardous		3
2	WS102-0.10-28/07/2025	0.10	Non Hazardous		6
3	WS104-0.20-28/07/2025	0.20	Non Hazardous		9
4	WS106-0.50-29/07/2025	0.50	Non Hazardous		11
5	WS103-2.40-29/07/2025	2.40	Non Hazardous		13
6	WS108-0.20-29/07/2025	0.20	Non Hazardous		16

Related documents

#	Name	Description
1	25-07148.1.hwol	DETS South .hwol file used to populate the Job
2	Soils Suite 2 2025	waste stream template used to create this Job

Report

Created by: Margaret Lo

Created date: 11 Sep 2025 14:34 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	18
Appendix B: Rationale for selection of metal species	19
Appendix C: Version	20

Classification of sample: WS101-0.35-28/07/2025

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS101-0.35-28/07/2025	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.35 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12.1%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 12.1% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	 arsenic { arsenic trioxide }				43 mg/kg	1.32	49.904 mg/kg	0.00499 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	 boron { diboron trioxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	 cadmium { cadmium oxide }				0.2 mg/kg	1.142	0.201 mg/kg	0.0000201 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
4	 chromium in Cr(III) compounds { chromium(III) oxide (worst case) }				22 mg/kg	1.462	28.264 mg/kg	0.00283 %	✓	
		215-160-9	1308-38-9							
5	 chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<2 mg/kg	2.27	<4.54 mg/kg	<0.000454 %		<LOD
	024-017-00-8									
6	 copper { dicopper oxide; copper (I) oxide }				36 mg/kg	1.126	35.628 mg/kg	0.00356 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	 lead { lead chromate }			1	33 mg/kg	1.56	45.246 mg/kg	0.0029 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	 mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	 nickel { nickel chromate }				93 mg/kg	2.976	243.301 mg/kg	0.0243 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
10	 selenium { nickel selenate }				2.2 mg/kg	2.554	4.939 mg/kg	0.000494 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
11	 vanadium { divanadium pentaoxide; vanadium pentoxide }				96 mg/kg	1.785	150.641 mg/kg	0.0151 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
12	 zinc { zinc chromate }				65 mg/kg	2.774	158.501 mg/kg	0.0159 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
13	 TPH (C6 to C40) petroleum group		TPH		<42 mg/kg		<42 mg/kg	<0.0042 %		<LOD
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
15	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	toluene 601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
17	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
18	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
20	pH		PH		7.2 pH		7.2 pH	7.2 pH		
21	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	acenaphthylene 205-917-1	208-96-8			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	acenaphthene 201-469-6	83-32-9			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	fluorene 201-695-5	86-73-7			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	phenanthrene 201-581-5	85-01-8			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	anthracene 204-371-1	120-12-7			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	fluoranthene 205-912-4	206-44-0			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	pyrene 204-927-3	129-00-0			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	chrysene 601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	indeno[123-cd]pyrene 205-893-2	193-39-5			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	benzo[ghi]perylene 205-883-8	191-24-2			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	monohydric phenols P1186				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
38	polychlorobiphenyls; PCB 602-039-00-4	215-648-1	1336-36-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.07 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS102-0.10-28/07/2025

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS102-0.10-28/07/2025	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.10 m	
Moisture content:	
5.5%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.5% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	 arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	6 mg/kg	1.32	7.486 mg/kg	0.000749 %	✓	
2	 boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2	<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD
3	 cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0	0.3 mg/kg	1.142	0.324 mg/kg	0.0000324 %	✓	
4	 chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9	11 mg/kg	1.462	15.193 mg/kg	0.00152 %	✓	
5	 chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8			<2 mg/kg	2.27	<4.54 mg/kg	<0.000454 %		<LOD
6	 copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	8 mg/kg	1.126	8.512 mg/kg	0.000851 %	✓	
7	 lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	47 mg/kg	1.56	69.279 mg/kg	0.00444 %	✓	
8	 mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
9	 nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7	17 mg/kg	2.976	47.814 mg/kg	0.00478 %	✓	
10	 selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5	<2 mg/kg	2.554	<5.108 mg/kg	<0.000511 %		<LOD
11	 vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1	19 mg/kg	1.785	32.053 mg/kg	0.00321 %	✓	
12	 zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9	104 mg/kg	2.774	272.643 mg/kg	0.0273 %	✓	
13	 TPH (C6 to C40) petroleum group			TPH	408 mg/kg		385.56 mg/kg	0.0386 %	✓	
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4	<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
15	benzene	601-020-00-8	200-753-7	71-43-2	<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
20	pH				7 pH		7 pH	7pH		
			PH							
21	naphthalene				3.17 mg/kg		2.996 mg/kg	0.0003 %	✓	
	601-052-00-2	202-049-5	91-20-3							
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
23	acenaphthene				5.51 mg/kg		5.207 mg/kg	0.000521 %	✓	
		201-469-6	83-32-9							
24	fluorene				5.38 mg/kg		5.084 mg/kg	0.000508 %	✓	
		201-695-5	86-73-7							
25	phenanthrene				70.7 mg/kg		66.812 mg/kg	0.00668 %	✓	
		201-581-5	85-01-8							
26	anthracene				5.86 mg/kg		5.538 mg/kg	0.000554 %	✓	
		204-371-1	120-12-7							
27	fluoranthene				68.8 mg/kg		65.016 mg/kg	0.0065 %	✓	
		205-912-4	206-44-0							
28	pyrene				56.7 mg/kg		53.582 mg/kg	0.00536 %	✓	
		204-927-3	129-00-0							
29	benzo[a]anthracene				18.9 mg/kg		17.861 mg/kg	0.00179 %	✓	
	601-033-00-9	200-280-6	56-55-3							
30	chrysene				20.2 mg/kg		19.089 mg/kg	0.00191 %	✓	
	601-048-00-0	205-923-4	218-01-9							
31	benzo[b]fluoranthene				18.3 mg/kg		17.294 mg/kg	0.00173 %	✓	
	601-034-00-4	205-911-9	205-99-2							
32	benzo[k]fluoranthene				6 mg/kg		5.67 mg/kg	0.000567 %	✓	
	601-036-00-5	205-916-6	207-08-9							
33	benzo[a]pyrene; benzo[def]chrysene				15.3 mg/kg		14.459 mg/kg	0.00145 %	✓	
	601-032-00-3	200-028-5	50-32-8							
34	indeno[123-cd]pyrene				7.78 mg/kg		7.352 mg/kg	0.000735 %	✓	
		205-893-2	193-39-5							
35	dibenz[a,h]anthracene				1.81 mg/kg		1.71 mg/kg	0.000171 %	✓	
	601-041-00-2	200-181-8	53-70-3							
36	benzo[ghi]perylene				6.8 mg/kg		6.426 mg/kg	0.000643 %	✓	
		205-883-8	191-24-2							
37	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
Total:								0.111 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 2000 mg/kg (0.2%)
because: insufficient liquid phase to be significant (<100mg/kg in C8-C16 range)

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0386%)

Classification of sample: WS104-0.20-28/07/2025

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
WS104-0.20-28/07/2025	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.20 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.7%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.7% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }				7 mg/kg	1.32	8.531 mg/kg	0.000853 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
2		boron { diboron trioxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD	
		005-008-00-8	215-125-8	1303-86-2								
3		cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD	
		048-002-00-0	215-146-2	1306-19-0								
4		chromium in Cr(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	21.584 mg/kg	0.00216 %	✓		
			215-160-9	1308-38-9								
5		chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<2 mg/kg	2.27	<4.54 mg/kg	<0.000454 %		<LOD	
		024-017-00-8										
6		copper { dicopper oxide; copper (I) oxide }				10 mg/kg	1.126	10.392 mg/kg	0.00104 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
7		lead { lead chromate }			1	19 mg/kg	1.56	27.354 mg/kg	0.00175 %	✓		
		082-004-00-2	231-846-0	7758-97-6								
8		mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD	
		080-010-00-X	231-299-8	7487-94-7								
9		nickel { nickel chromate }				7 mg/kg	2.976	19.23 mg/kg	0.00192 %	✓		
		028-035-00-7	238-766-5	14721-18-7								
10		selenium { nickel selenate }				<2 mg/kg	2.554	<5.108 mg/kg	<0.000511 %		<LOD	
		028-031-00-5	239-125-2	15060-62-5								
11		vanadium { divanadium pentaoxide; vanadium pentoxide }				36 mg/kg	1.785	59.318 mg/kg	0.00593 %	✓		
		023-001-00-8	215-239-8	1314-62-1								
12		zinc { zinc chromate }				31 mg/kg	2.774	79.377 mg/kg	0.00794 %	✓		
		024-007-00-3	236-878-9	13530-65-9								
13		TPH (C6 to C40) petroleum group				<6 mg/kg		<6 mg/kg	<0.0006 %		<LOD	
				TPH								
14		pH				6.5 pH		6.5 pH	6.5 pH			
				PH								
15		naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	● acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	● acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	● fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	● phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	● anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	● fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	● pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	● indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	● benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	● monohydric phenols		P1186		<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
Total:								0.0216 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
●	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS106-0.50-29/07/2025

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
WS106-0.50-29/07/2025	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.3%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.3% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				5 mg/kg	1.32	6.12	mg/kg	0.000612 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	boron { diboron trioxide }				<1 mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
4	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	18.968	mg/kg	0.0019 %	✓	
		215-160-9	1308-38-9								
5	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<2 mg/kg	2.27	<4.54	mg/kg	<0.000454 %		<LOD
	024-017-00-8										
6	copper { dicopper oxide; copper (I) oxide }				11 mg/kg	1.126	11.481	mg/kg	0.00115 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
7	lead { lead chromate }			1	9 mg/kg	1.56	13.014	mg/kg	0.000834 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
8	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
9	nickel { nickel chromate }				6 mg/kg	2.976	16.554	mg/kg	0.00166 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
10	selenium { nickel selenate }				<2 mg/kg	2.554	<5.108	mg/kg	<0.000511 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				27 mg/kg	1.785	44.681	mg/kg	0.00447 %	✓	
	023-001-00-8	215-239-8	1314-62-1								
12	zinc { zinc chromate }				190 mg/kg	2.774	488.61	mg/kg	0.0489 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
13	TPH (C6 to C40) petroleum group		TPH		<6 mg/kg		<6	mg/kg	<0.0006 %		<LOD
14	pH		PH		6.9 pH		6.9	pH	6.9 pH		
15	naphthalene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	● acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	● acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	● fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	● phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	● anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	● fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	● pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	● indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	● benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	● monohydric phenols		P1186		<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
Total:								0.0595 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
●	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS103-2.40-29/07/2025

 **Non Hazardous Waste**
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample name:	LoW Code:
WS103-2.40-29/07/2025	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2.40 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
21.7%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 21.7% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		arsenic { arsenic trioxide }				23 mg/kg	1.32	23.778 mg/kg	0.00238 %	✓	
		033-003-00-0	215-481-4	1327-53-3							
2		boron { diboron trioxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD
		005-008-00-8	215-125-8	1303-86-2							
3		cadmium { cadmium oxide }				0.2 mg/kg	1.142	0.179 mg/kg	0.0000179 %	✓	
		048-002-00-0	215-146-2	1306-19-0							
4		chromium in Cr(III) compounds { chromium(III) oxide (worst case) }				22 mg/kg	1.462	25.177 mg/kg	0.00252 %	✓	
			215-160-9	1308-38-9							
5		chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<2 mg/kg	2.27	<4.54 mg/kg	<0.000454 %		<LOD
		024-017-00-8									
6		copper { dicopper oxide; copper (I) oxide }				21 mg/kg	1.126	18.513 mg/kg	0.00185 %	✓	
		029-002-00-X	215-270-7	1317-39-1							
7		lead { lead chromate }			1	14 mg/kg	1.56	17.099 mg/kg	0.0011 %	✓	
		082-004-00-2	231-846-0	7758-97-6							
8		mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
		080-010-00-X	231-299-8	7487-94-7							
9		nickel { nickel chromate }				45 mg/kg	2.976	104.869 mg/kg	0.0105 %	✓	
		028-035-00-7	238-766-5	14721-18-7							
10		selenium { nickel selenate }				<2 mg/kg	2.554	<5.108 mg/kg	<0.000511 %		<LOD
		028-031-00-5	239-125-2	15060-62-5							
11		vanadium { divanadium pentaoxide; vanadium pentoxide }				45 mg/kg	1.785	62.901 mg/kg	0.00629 %	✓	
		023-001-00-8	215-239-8	1314-62-1							
12		zinc { zinc chromate }				61 mg/kg	2.774	132.502 mg/kg	0.0133 %	✓	
		024-007-00-3	236-878-9	13530-65-9							
13		TPH (C6 to C40) petroleum group				465 mg/kg		364.095 mg/kg	0.0364 %	✓	
				TPH							
14		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4							
15		benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
20	pH		PH		6.4 pH		6.4 pH	6.4 pH		
21	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
23	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
24	fluorene				0.18 mg/kg		0.141 mg/kg	0.0000141 %	✓	
		201-695-5	86-73-7							
25	phenanthrene				0.41 mg/kg		0.321 mg/kg	0.0000321 %	✓	
		201-581-5	85-01-8							
26	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
27	fluoranthene				0.4 mg/kg		0.313 mg/kg	0.0000313 %	✓	
		205-912-4	206-44-0							
28	pyrene				0.32 mg/kg		0.251 mg/kg	0.0000251 %	✓	
		204-927-3	129-00-0							
29	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
30	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
31	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
32	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
33	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
34	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
35	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
36	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
37	monohydric phenols		P1186		<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
Total:								0.0744 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
■	Determinand defined or amended by HazWasteOnline (see Appendix A)
■	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 2000 mg/kg (0.2%)
because: insufficient liquid phase to be significant (<100mg/kg in C8-C16 range)

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0364%)

Classification of sample: WS108-0.20-29/07/2025

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
WS108-0.20-29/07/2025	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.20 m	
Moisture content:	
4.4%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 4.4% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	 arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	9 mg/kg	1.32	11.36	mg/kg	0.00114 %	✓	
2	 boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2	<1 mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
3	 cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0	0.4 mg/kg	1.142	0.437	mg/kg	0.0000437 %	✓	
4	 chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9	15 mg/kg	1.462	20.959	mg/kg	0.0021 %	✓	
5	 chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8			<2 mg/kg	2.27	<4.54	mg/kg	<0.000454 %		<LOD
6	 copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	29 mg/kg	1.126	31.214	mg/kg	0.00312 %	✓	
7	 lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	376 mg/kg	1.56	560.685	mg/kg	0.0359 %	✓	
8	 mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	<1 mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
9	 nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7	9 mg/kg	2.976	25.608	mg/kg	0.00256 %	✓	
10	 selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5	<2 mg/kg	2.554	<5.108	mg/kg	<0.000511 %		<LOD
11	 vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1	28 mg/kg	1.785	47.786	mg/kg	0.00478 %	✓	
12	 zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9	144 mg/kg	2.774	381.9	mg/kg	0.0382 %	✓	
13	 TPH (C6 to C40) petroleum group			TPH	14 mg/kg		13.384	mg/kg	0.00134 %	✓	
14	 pH			PH	7.2 pH		7.2	pH	7.2 pH		
15	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	phenanthrene	201-581-5	85-01-8		0.35 mg/kg		0.335 mg/kg	0.0000335 %	✓	
20	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	fluoranthene	205-912-4	206-44-0		0.75 mg/kg		0.717 mg/kg	0.0000717 %	✓	
22	pyrene	204-927-3	129-00-0		0.71 mg/kg		0.679 mg/kg	0.0000679 %	✓	
23	benzo[a]anthracene	601-033-00-9	200-280-6		0.33 mg/kg		0.315 mg/kg	0.0000315 %	✓	
24	chrysene	601-048-00-0	205-923-4		0.42 mg/kg		0.402 mg/kg	0.0000402 %	✓	
25	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.52 mg/kg		0.497 mg/kg	0.0000497 %	✓	
26	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.18 mg/kg		0.172 mg/kg	0.0000172 %	✓	
27	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.53 mg/kg		0.507 mg/kg	0.0000507 %	✓	
28	indeno[123-cd]pyrene	205-893-2	193-39-5		0.43 mg/kg		0.411 mg/kg	0.0000411 %	✓	
29	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	benzo[ghi]perylene	205-883-8	191-24-2		0.41 mg/kg		0.392 mg/kg	0.0000392 %	✓	
31	monohydric phenols		P1186		<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
Total:								0.0897 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 2000 mg/kg (0.2%) because: insufficient liquid phase to be significant (<100mg/kg in C8-C16 range)

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00134%)

Appendix A: Classifier defined and non GB MCL determinands

■ **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Unknown Oil

Hazard statements taken from WM3 1st Edition 2015

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

■ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

■ **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

■ **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

■ **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

■ **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2; H351

■ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

■ **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)

Data source: CLP combined data

Data source date: 26 Mar 2019

Hazard Statements: Muta. 2; H341, Acute Tox. 3; H331, Acute Tox. 3; H311, Acute Tox. 3; H301, STOT RE 2; H373, Skin Corr. 1B; H314, Skin Corr. 1B; H314 >= 3 %, Skin Irrit. 2; H315 1 <= conc. < 3 %, Eye Irrit. 2; H319 1 <= conc. < 3 %, Aquatic Chronic 2; H411

■ **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

■ **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

■ **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4

Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in Cr(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in Cr(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**

HazWasteOnline Classification Engine Version: 2025.248.6764.12269 (06 Sep 2025)

HazWasteOnline Database: 2025.248.6764.12269 (06 Sep 2025)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

GB MCL List v2.0 - version 2.0 of 20th October 2023

GB MCL List v3.0 - version 3.0 of 11th January 2024

GB MCL List v4.0 - version 4.0 of 2nd March 2024

GB MCL List v5.0 - version 5.0 of 26th June 2024

GB MCL List v6.0 - version 6.0 of 15th February 2025

Appendix H Information Provided by the Client



KEY

- Site boundary
- Site access



Coloured Site Layout
Padnell Grange, Waterlooville

24143 / C101

Scale 1:500 @ A1 March 2026

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