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**Land off Southern Way,
Folkestone,
Kent**

Phase 2 Contamination Assessment

On behalf of Oliver James Homes Ltd



Document Reference: 13574/Phase 2 CRA

October 2025

air quality assessment contaminated land ecology environmental audits noise assessment
environmental impact assessments flood risk assessments geotechnical engineering ground investigation
hydrogeology noxious weeds remediation design risk assessments waste management

Site: Land off Southern Way, Folkestone, Kent

Document Reference No: 13574/Phase 2 CRA

Quality Management

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Date	October 2025
Revision	0

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1 INTRODUCTION

Ground and Environmental Services Ltd (GES) was commissioned by Oliver James Homes Ltd (The Client) to undertake a Phase 2 Contamination Risk Assessment upon a parcel of land off Southern Way, Folkestone, Kent.

It was understood that current development proposals comprise a fully commercial scheme and would consist of a large supermarket retail unit and two smaller retail units, all with associated areas of hardstanding, including access roads and car parking areas. A proposed development plan is included at Appendix 1, at the end of this report.

A Phase 1 Contamination Risk Assessment Report has been prepared for the site by GES in October 2025 (Ref: 13574/Phase 1 CRA). The Phase 1 report should be read in conjunction with this Phase 2 report, although the pertinent points have been summarised below.

In addition, an intrusive Phase 2 Geo-Environmental Investigation (report no. 11192 – July 2019) and a Phase 1 Contamination Risk Assessment (report no. 12153 – April 2019) have historically been conducted by GES, albeit for a different development proposal, namely a predominantly residential scheme. The findings of the previous reports are summarised in Section 5.

The purpose of the ground investigation was to provide a preliminary assessment of contamination issues based on current Contaminated Land Legislation.

2 SITE LOCATION AND LAYOUT

The site is located to the north of Southern Way, Folkestone, Kent and is centred on approximate ordnance survey grid reference centre TR 235 368.

A site walkover was undertaken on 26th August 2025 by GES. A detailed site description together with photographs are included within the Phase 1 Report although the salient details are outlined below.

The site comprises of an area of approximately 1.25ha and is triangular in shape with the apex pointing northeast. It is set within an urban setting surrounded by residential housing and some commercial/light industrial units.

At the time of the site investigation the site was derelict and no evidence of any recent potentially contaminative activities was observed. Ground cover comprised a mixture of concrete hardstanding, grassy scrub, overgrown vegetation and crushed rubble/ballast material.

An unmade road was noted to run through the site entering in the south from Southern Way and running towards the railway area to the north of the site. The track is understood to be used exclusively for maintenance access by Network Rail and their subcontractors.

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The southern portion of the site is slightly elevated compared to the rest of the site. An additional elevated area was noted within the southwestern portion of the site with a concrete retaining wall. The site's topography is uneven, which suggested the site may have been historically reworked.

At the time of the site walkover the site was surrounded by the following features:

- To the north: by a railway line beyond which was residential dwellings;
- To the east: by a railway line beyond which is a mixture of light industrial units and residential dwellings;
- To the south: by Southern Way beyond which is a residential area. A pumping station operated by Southern Water is located directly to the south-west of the site;
- To the west: by a railway line beyond which is a residential area.

3 SITE HISTORY

A detailed site history, together with historical mapping extracts are presented within the Phase 1 Report, however a summary is provided below.

Historical mapping revealed that the site had previously been used as a railway yard since the 19th Century, and potential sources of contamination from this usage included coke ovens, a coal yard and a goods yard. The southern part of the site was also used as a quarry. The site was cleared of railway-related facilities in the late 20th Century.

4 ENVIRONMENTAL SETTING

4.1 GEOLOGY

Reference to the British Geological Survey online geological map of the area indicates that the geology underlying the site is the Gault Formation (Mudstone).

The geological memoir for the area described these strata as follows:

Gault Clay Formation

Pale to dark grey or blue-grey clay or mudstone, glauconitic in part, with a sandy base. Discrete bands of phosphatic nodules (commonly preserving fossils), some pyrite and calcareous nodules.

4.2 GROUNDWATER

Reference to the British Geological Survey 1:50,000 scale Aquifer Designation Dataset, shows the site to be set upon Unproductive Strata.

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Unproductive Strata are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

The site is not situated within an Environment Agency-designated Groundwater Source Protection Zone.

There are no sensitive potable water abstractions within a 2km radius of the site.

4.3 RADON

Reference to the British Geological Survey and the National Geoscience Information Service indicated that less than one percent (<1%) of houses within the 5 km square which includes the site have radon concentrations above the action level of 200 Bq/m³.

The site is therefore not located within a “Radon Affected Area” and therefore no special radon protective measures are necessary in the construction of new dwellings or extensions.

4.4 OTHER ENVIRONMENTAL INFORMATION

Reference was made to the environmental database landmark, extracts from which are provided within the Phase 1 Report. Relevant information relating to the sites environmental sensitivity is summarised as follows:

Dataset		On site	Nearest significant off-site feature
Agency & Hydrological	Discharge Consents	None	749m south. Public Sewage – Storm Sewage Overflow.
	Local Authority Pollution Prevention and Controls	None	37m northeast. Respraying of road vehicles.
	Nearest Surface Water Feature	None	82m northeast.
	Pollution Incidents to Controlled Waters	None	73m east. Shop fire in 1996. Category 3 Minor Incident.
	Substantiated Pollution Incident Register	None	706m south. Oils – Diesel. Category 2 Significant Water Impact.
	Water Abstractions	None	234m west. Machinery and Electronics: General Use.
	OS Water Network Lines	None	509m southeast. Inland River on ground surface.
	Water Framework Directive – Catchment	Rother, Coastal Catchment	N/A

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Dataset		On site	Nearest significant off-site feature
Waste	BGS Recorded Landfill Sites	None	715m north.
	Historical Landfill Sites	None	717m north. Deposited waste included Inert and Commercial Waste.
	Local Authority Landfill Coverage	Yes	
	Potentially Infilled Land (Non-Water)	None	208m west. Unknown Filled Ground (Pit, Quarry, etc.)
	Potentially Infilled Land (Water)	None	45m southeast. (Pond, marsh, river, stream, dock etc)
	Registered Landfill Sites	None	803m north.
Hazardous Substances	Explosive Sites	None	910m south. Port Office, Folkestone Harbour.
	Notification of Installations Handling Hazardous Substances (NIHHS)	None	465m northeast.
	Planning Hazardous Substance Consents	None	153m north. Flammable substances.
Geological	BGS Recorded Mineral Sites	None	255m west. Opencast – Gault Clay. Status: Ceased
	Coal Mining Affected Areas	In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority.	N/A
	Mining Instability	Inconclusive Coal Mining	N/A
	Potential for Collapsible Ground Stability Hazards	Very low	N/A
	Potential for Compressible Ground Stability Hazards	No hazard	
	Potential for Ground Dissolution Stability Hazards	No hazard	

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Dataset		On site	Nearest significant off-site feature
	Potential for Landslide Ground Stability Hazards	Very low	
	Potential for Running Sand Ground Stability Hazards	No hazard	
	Potential for Shrinking or Swelling Clay Ground Stability Hazards	Moderate	
Industrial Land Use	Contemporary Trade Directory Entries	None	20m southeast. Scrap Metal Merchants.
	Fuel Station Entries	None	343m west. Obsolete
	Points of Interest – Commercial Services	None	19m southeast. Recycling Services - Scrap Metal Merchants.
	Points of Interest – Manufacturing and Production	None	10m west. Industrial Features – Tanks (Generic)
	Points of Interest – Public Infrastructure	None	168m northeast. Infrastructure and Facilities. Waste Storage, Processing and Disposal.
	Points of Interest – Recreational and Environmental	None	42m southwest. Recreational – Playgrounds.
	Underground Electrical Cables	None	410m north.
Sensitive Land Use	Areas of Outstanding Natural Beauty	None	418m east. Kent Downs.
	Local Nature Reserves	None	501m southeast. Folkestone Warren.
	Marine Nature Reserves	None	697m east.
	Sites of Special Scientific Interest	None	501m southeast. Folkestone Warren.
	Special Areas of Conservations	None	712m north. Folkestone to Etchinghill Escarpment.

5 DATA REVIEW

As previously mentioned, GES has historically conducted a Phase 1 Contamination Risk Assessment and Phase 2 Geo-Environmental Investigation at this site. The previous works were carried out on the assumption that the site would be used for Residential (With plant uptake) purposes. The conclusions of the Phase 2 Geo-Environmental Investigation, originally undertaken during August and September 2013, and subsequently revised in July 2019, are as follows:

Historical mapping revealed that the site had previously been used as a railway yard since the 19th Century, and potential sources of contamination from this usage included coke ovens, a coal yard and a goods yard. The southern part of the site was also used as a quarry. The site was cleared of railway-related facilities in the late 20th Century.

Concentrations of toxic and phytotoxic metals were generally low across the site, with the exception of slightly elevated lead and arsenic samples found in several locations.

Asbestos-Containing Material was found in one location in the form of Chrysotile in a cement matrix. The concentration is unknown.

Elevated levels of Benzo(a)pyrene, Benz(a)anthracene, Benzo(b)fluoranthene and Dibenz(a,h)anthracene were encountered in various locations throughout the site.

The removal of contaminated soils and the import and placement of 600mm of clean subsoils and topsoil was recommended.

The site was given a soil gas classification of Amber 2, and it was considered that gas protection measures would be required in any buildings constructed on the site.

Based on low concentrations of phytotoxic metals, the risk to plants on site was considered low.

Due to the lack of mobile organic contamination, the risk to groundwater resources was considered low.

The 2019 Phase 1 Contamination Risk Assessment was conducted in order to update the assessment of risks and confirm that the 2019 Phase 2 report had identified all potential contamination sources arising from the site's former uses and that the contemporary use of the site had not introduced any new contaminant sources in the intervening period. The desk study and site walkover found that no new potential sources of contamination had been introduced to the site in the intervening period.

A current Phase 1 Contamination Risk Assessment has been produced in October 2025 in order to obtain current and up to date environmental information for the site and surrounding area.

6 INTRUSIVE INVESTIGATION

6.1 FIELDWORK

The site works for this current Phase 2 assessment were carried out between the 26th August and the 17th September 2025 and comprised the following:

- Window Sampling
- Soil Gas and Groundwater Monitoring

The positions of the above works on the site are indicated on Figure 1, Exploratory Hole Location Plan.

Window Sampling

Twelve window sample holes (WS1 to WS12) were excavated using a Premier Compact 110 window sampling rig to depths ranging between 1.5m and 4.0 m. The soils and materials encountered in the holes were logged and representative samples recovered for laboratory analysis.

Window sample holes WS1, WS6, WS10 and WS11 were completed with 35mm diameter dual purpose soil gas and groundwater monitoring standpipes installed to the full depth of the test hole. All other window sample holes were backfilled with arisings and surface coverings made safe.

Window sample hole logs and installation details are presented in Appendix 2.

Soil Gas Survey

A soil vapour survey was undertaken across the site and comprised the monitoring of the atmosphere within the standpipes installed in the window sample holes. Portable gas monitoring equipment (GA5000) was used to monitor the standpipes for concentrations of carbon dioxide (CO₂), methane (CH₄) and oxygen (O₂).

The gas monitoring results are presented in Appendix 3.

6.2 GROUNDWATER

Groundwater ingress was not encountered during the intrusive site investigation. During the subsequent monitoring visits of the standpipes installed in the window sample holes, groundwater was noted in the following locations:



WS Ref.	05/09/2025	11/09/2025	17/09/2025
	Depth to Water (mbgl)	Depth to Water (mbgl)	Depth to Water (mbgl)
WS01	2.50	3.07	1.87
WS06	Dry	Dry	Dry
WS10	1.28	1.38	1.41
WS11	1.12	1.12	1.14

It should be noted that groundwater levels may vary due to seasonal fluctuations in rainfall, but in the shorter term, can be affected by antecedent weather conditions or other causes.

7 LABORATORY TESTING`

7.1 GENERAL

During the intrusive investigation, excavated soils were subjected to PID screening techniques in order to determine the presence of Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs) which is considered an appropriate screen for organic contamination.

Confirmatory soil samples were taken from all window sample holes. Headspace analysis to determine VOC concentrations was carried out using a PID on all soil samples retrieved as part of this investigation. The results of the screening indicated that VOC concentrations were below the detection limit of 10 ppm in all samples.

Therefore, no significantly elevated VOCs or SVOCs were encountered and therefore the on-site soil elsewhere on site was deemed to not have been impacted by any potential VOC and SVOC contaminants. These soils would not be deemed to pose any significant risk of significant harm to human health as a result of the presence of volatile hydrocarbons.

7.2 ANALYTICAL TESTING

Twelve soil samples were selected and scheduled for chemical analysis which was undertaken by Normec DETS Ltd. All soil samples were analysed for a general screening suite of contaminants considered appropriate to the current usage and past history of the site and surrounding area.



Toxic Metals	Phytotoxic Metals	Inorganic Compounds	Organic Compounds
Arsenic Barium Beryllium Cadmium Chromium Lead Mercury Nickel Selenium Vanadium	Water Soluble Boron Copper Nickel Zinc	Water Soluble Sulphate pH Asbestos	Total Polyaromatic Hydrocarbons (PAH) Mineral oils Total Petroleum Hydrocarbons (TPH) Total Phenols

In addition, two composite sample of arisings were prepared and submitted for analysis in accordance with the Environment Agency's waste acceptance criteria (WAC) for the off-site disposal of soils.

Soil samples were stored in appropriate containers as specified within BS10175. The containers comprised of 1 kg capacity plastic containers with fitted lids.

Where organic compounds were to be determined, inert containers, which prevent loss by absorption, or volatilization, i.e. wide-mouthed amber glass containers, were used.

Samples were stored in appropriately cooled cool boxes and were transported to the laboratory as quickly as possible in order to minimise any potential for chemical and biological changes to take place.

The results of the analytical testing are presented in Appendix 4.

8 GROUND PROFILE

The soils encountered during this investigation are described in the window sample logs presented in Appendix 2. The ground profile encountered at the site comprised a significant thickness of Made Ground materials over superficial deposits comprising of Colluvium which, where encountered, was underlain by soils of the Gault Clay Formation.

Made Ground

Made Ground was encountered within all exploratory hole locations at the site. The Made Ground was found to depths ranging between 1.4m (WS10) and 3.3m (WS3 & WS4) below existing ground level. At the location of window sample WS5 the base of the Made Ground was not proven as the excavation refused on an unknown obstruction at a depth of 1.5m below existing ground level.

From the historic maps the majority of the site appears to have been developed upon over the past 150 years. It was therefore considered that former activities on the site may account for the variations in the thickness of the Made Ground horizon.

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The Made Ground was highly variable both in thickness and in composition with the materials found comprising a mix of rail ballast, coal deposits, chalk fill, clay fill, brick and concrete hardcore, ash and clinker. No olfactory evidence of contamination was observed.

Colluvium

Underlying the Made Ground at all exploratory hole locations, with the exception of borehole WS7, were soils typical of Colluvium. Colluvium is a slope wash deposit derived from soils upslope of the site. This investigation found the Colluvium to comprise a sequence of predominant soft to firm silty clay and subordinate sandy clay with variable quantities of chalk gravel and organic content.

Where found, the depth to the base of the Colluvium was generally not established although was found to depths ranging between 1.8m and 2.1m within WS9 and WS10 respectively. At the location of borehole WS7 the Colluvium was not found with soils of the Gault Clay formation found immediately beneath Made Ground.

Gault Clay Formation

The Gault Clay was encountered at depths ranging between 1.8m and 2.1m and comprised mid to dark grey/blue slightly to closely fissured clay.

9 GROUND CONTAMINATION ASSESSMENT

The current guidelines used for this contamination assessment are presented within Appendix 5.

The contaminant concentrations encountered as part of this investigation have been compared against either published Category 4 Screening Levels (C4SLs) for a Commercial end use or where these are not available, the Land Quality Management and Chartered Institute of Environmental Health's (LQM/CIEH) Suitable for Use Levels (S4ULs).

9.1 SOIL QUALITY

In terms of any proposed redevelopment of the site, the results of the analysis of the selected soil samples recovered during the site investigation indicated that the concentrations of *metals and metalloids* considered to be potentially toxic to humans were below the respective guideline values in all samples tested.

Organic contamination across the site was low and concentrations which may be considered to pose an unacceptable risk to human health should any viable pathway exist were not encountered.

Asbestos contamination was not encountered within any of the soil samples analysed.

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A comprehensive description of the soil quality as measured as part of the intrusive site investigation is given below.

9.1.1 Toxic Metals

Concentrations of toxic metals arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, vanadium, and zinc were all below their respective soil guidance values for either a commercial development under the CLEA/LQM GAC guidelines and the C4SL/S4USL guideline values for a commercial end use where appropriate in all samples tested.

9.1.2 Phytotoxic Metals

Concentrations of phytotoxic metals copper, zinc and nickel were compared against the maximum permissible concentration in the Sewage Sludge (Use in Agriculture) Regulations 1989.

Concentrations of nickel, and zinc were found to be below the maximum permissible concentration for use on soils for the relevant pH level in all of the analysed soil samples.

Concentrations of copper were generally found to be below the maximum permissible concentration also, although the sample from WS3 (0.5m) and the WAC Composite 1 sample recorded copper concentrations of 671 mg/kg and 348 mg/kg respectively which are in excess of the 200 mg/kg limit value.

9.1.3 Organic Compounds

Polycyclic Aromatic Hydrocarbons (PAH)

Concentrations of total PAH were significantly below the inert waste acceptance criteria of 100 mg/kg as detailed in the Landfill (England and Wales) (Amended) Regulations 2004 in all of the samples tested with the exception of one sample taken from WS5 (0.4m) in which recorded a total PAH concentration of 148 mg/kg.

The PAH ratios of anthracene (A), chrysene (C), fluoranthene (F), and pyrene (P) can be used as source apportionment tools to determine the likely source of the elevated PAH concentrations encountered. By calculating the ratios of A:C versus F:P and plotting the results, the resultant ratios indicate that the slightly elevated PAH concentrations encountered in the Made Ground sample at WS5 were likely from a coal derived source and likely consisted of some tarmac which was incorporated into the sample analysed at the laboratory. The PAH ratios results are attached at Appendix 6.

Benzo(a)pyrene (B(a)P)

All B(a)P concentrations were below the C4SL guideline limit value of 77 mg/kg for a commercial end use.

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All other speciated PAH compounds were also below their respective guideline values.

Total Petroleum Hydrocarbons

Concentrations of TPH were low and were below the inert waste acceptance criteria of 500 mg/kg as detailed within the Landfill (England and Wales) Regulations 2004 and also within the UK Water Industry Research (UKWIR) in all soil samples.

Generic Assessment Criteria (GAC) for total petroleum hydrocarbons according to both their molecular weight and chemical structure and also for a range of soil organic matter (SOM) content values have been derived using CLEA software. The LQM CIEH GACs are presented according to their soil organic matter content and proposed end use of the land.

Comparison of the measured TPH data with the worst-case scenario constituent compounds and their GAC limit values was made to provide a conservative assessment of the organic contamination. The maximum TPH concentration recorded on site during the site investigation was 454 mg/kg within WS5 (0.4m) comprising predominantly of 295 mg/kg within the C21-C35 range and 143 mg/kg within the C16-C21 range, which is significantly below the absolute worst-case relevant GAC limit for both ranges of 28,000 mg/kg for a commercial end use.

The TPH concentrations recorded on site within all soil samples were therefore below the relevant GAC limit for their respective ranges.

Total Phenols

Total Phenol concentrations were found to be below the analytical detection limit of 2 mg/kg within all of the analysed samples.

9.1.4 Inorganic Compounds

Concentrations of water-soluble sulphate close to surface were found to range from <10 mg/l to 120 mg/l (as SO₄) within the analysed soil samples. The pH values were slightly alkaline with values ranging between 7.8 and 8.2 units.

9.1.5 Asbestos

Asbestos screening of the soil samples did not identify any Asbestos Containing Material (ACM).



9.2 SOIL GAS

Three soil gas monitoring visits were carried out between the 5th September 2025 and the 17th September 2025.

During the visit, a soil vapour survey was undertaken which comprised the monitoring of the atmosphere within the installed Window Sample Hole standpipes. Portable gas monitoring equipment (GA 5000) was used to monitor the standpipes for concentrations of carbon dioxide (CO₂), methane (CH₄) and oxygen (O₂).

For determining the gas protection measures which may be required in low rise buildings with a beam and block floor there is published guidance from the NHBC for use on residential developments which utilises a traffic light system of classification. For larger buildings the guidance in CIRIA 665 and BS8485 is used.

Reference has also been made to the British Standard Code of Practice BS8485:2015, *Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings* and regard has been given to the recommendations presented therein. The processes set out in BS8485 represent good practice and is based on the CIRIA C665 document.

In addition CIRIA document C735, *Good practice on the testing and verification of protection systems for buildings against hazardous ground gases* has also been referenced.

The results obtained from the short-term soil gas monitoring undertaken indicated that elevated concentrations of soil gas *were present* in the soils underlying the site. The soil gas results are attached at Appendix 3.

The results obtained from the soil gas survey undertaken indicated that elevated carbon dioxide concentrations were encountered which exceed the action level of 5% at WS1, WS6 and WS11.

Methane concentrations were encountered above the action level of 1% at WS11.

A maximum flow of 0.1 l/h was detected within WS1.

9.3 WATCHING BRIEF AND DISCOVERY STRATEGY

Whilst no significantly elevated contaminant concentrations were encountered in general as part of this site investigation with the exception of localised slightly elevated copper concentrations in terms of phytotoxicity, should discreet hotspots be encountered, which were not previously detected during the site groundworks, these should be dealt with accordingly, by informing all parties involved with the site and drafting new contamination proposals if necessary. A number of options are available for handling any such material, which include:

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- The removal from site and disposal to a suitably licensed landfill of all material suspected of being contaminated.
- Short-term storage of the suspected material while undertaking verification testing for suspected contamination. The storage area should be a contained area to ensure that contamination does not migrate and affect other areas of the site. Depending upon the amounts of material under consideration, this could be either a skip or a lined area.
- Treatment of the identified contamination as discussed above.
- Having a suitably experienced Environmental Engineer either on-call or with a watching brief for the visual and olfactory assessment of the material, and sampling for verification purposes.

Should a new source of contamination be suspected or identified then the relevant local authorities would be informed. A report indicating the nature of contamination and how this is to be dealt with would be submitted to their department and for their agreement. Any necessary remediation would then be detailed and verified in a supplementary remediation statement.

GES can confirm that such a watching brief should exist on this site during any enabling/construction works and should any contamination or potentially contaminative sources be discovered during the proposed enabling works all site works would cease and suitably competent consultants/engineers will attend site.



10 CONTAMINATION RISK ASSESSMENT

This risk assessment has been undertaken with due regard to the advice relating to groundwater as provided in the Environment Agency’s “Methodology for the Derivation of Remedial Targets for Soil and Groundwater to Protect Water Resources”, the advice provided in the Contaminated Land (England) Regulations 2000, and the associated statutory guidance. The guidance defines contaminated land as any land that is in such a condition that by reason of substances in, on or under the land:

- significant harm is being caused or there is a significant possibility of such harm being caused; or
- pollution of controlled water is being or is likely to be caused.

This definition is based on the principles of risk assessment defined as a combination of the probability (or frequency) of occurrence of a defined hazard and the magnitude (including the seriousness) of the consequences. Central to the risk assessment process is the concept of pollutant linkage, that is a linkage between a contaminant and a receptor by means of a pathway.

Statutory definitions relating to pollution linkage.	
Contaminant	“a substance which is in, on or under the land and which has the potential to cause harm or to cause pollution of controlled waters.”
Receptor	“a living organism, a group of living organisms, and ecological system or a piece of property” which meets given criteria. “controlled waters which are, or could be, polluted by a contaminant”.
Pathway	“one or more routes or means by, or through, which a receptor: <ul style="list-style-type: none"> • is being exposed to, or affected by, a contaminant, or • could be so exposed or affected”.

The relationship between these components is discussed below in order to identify the existence of any source-pathway-receptor linkage on the site, and hence the potential risks associated with any contamination. This risk assessment is based on the proposed construction of a large supermarket retail unit and two smaller retail units, all with associated areas of hardstanding, including access roads and car parking areas.

The significance of the risks to the receptors/targets identified is based on an evaluation of the potential pathways between the contaminant source and receptors based on a commercial end use of the site.

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Potential receptors/targets at the site and in the area in which the site is located include:

- future users and the public;
- construction/maintenance workers;
- groundwater resources;
- underground services in and around the site;
- plants in any proposed areas of soft landscaping.

10.1 CONTAMINANT SOURCES

Based on the historical map survey the site appears to have been part of railway land since the earliest available map in 1872. Railway lines, coal depots, coke ovens and goods yards have all been onsite over its history, all of these are potentially significant sources of contamination.

Also a quarry was noted within the southwestern portion of the site between 1872 and 1907. The quarry has been infilled and such infill material has the potential to generate land gases such as methane and carbon dioxide.

Colluvium soils, such as found on site can contain of organic matter and can be a source of ground gas.

In general, the analytical testing of soils retrieved as part of the intrusive investigation did not reveal significantly elevated contaminant concentrations although as mentioned in Section 9.1 of this report, slightly elevated concentrations of phytotoxic metals were encountered on site. The risks associated with these contaminants are discussed below.

10.2 RISK TO HUMAN HEALTH

Toxic Metals

Concentrations of toxic metals arsenic, beryllium, cadmium, chromium, copper, lead, mercury nickel, selenium, vanadium and zinc were all below their respective soil guidance values for a commercial end use in all samples tested in this site investigation, therefore the risks to human health from these contaminants is considered to be low.

Organic Compounds

Concentrations of PAH and TPH were below their respective soil guidance values in all samples tested. Therefore, the risks posed to human health from these contaminants are considered to be low.

It is noted that in the historical site investigation (report no. 11192), a single dibenz(a,h)anthracene concentration of 4.0 mg/kg was encountered at TP4 (0.25m), which slightly exceeds the C4SL guideline limit value of 3.5 mg/kg. However, with

reference to the current proposed development plan, this location will be covered by a car park. It is therefore assumed that existing Made Ground will be removed from this location as part of site preparation works, and hardstanding will be put in place. This hardstanding will sever the pathway between any residual contamination in underlying soils and human receptors. The risk to human health from organic compounds is therefore considered to be low.

Asbestos

Asbestos was not detected in any near surface made ground soils from across the site therefore the risks from asbestos would not be considered to pose a significant risk to human health.

A single sample from TP8 (0.7m) containing Asbestos-Containing Material was encountered during the previous site investigation. However, this part of the site will be covered by a car park. It is therefore assumed that existing Made Ground will be removed from this location as part of site preparation works, and hardstanding will be put in place. This hardstanding will sever the pathway between any residual contamination in underlying soils and human receptors. The risk to human health from asbestos is therefore considered to be low.

In the event that further ACM is encountered during the site enabling works then the extent of such will be delineated under the supervision of a suitably competent consultant/engineer and the material will be removed from site in accordance with the hazardous waste regulations.

If asbestos-containing material is found on site, then all the documentation regarding its remediation including duty of care and waste transfer notes would be forwarded to the appropriate authorities.

On the balance of the toxicological risks posed by the ground contamination encountered as part of the intrusive investigation undertaken by GES, it is considered that the potential risks to site workers and future occupants could be adequately controlled as follows:

Site Workers

- Provision of appropriate personal protective equipment and hygiene facilities.
- Provision of appropriate dust suppression, to minimise the generation of suspended particulates during site works.

Future Users

Elevated levels of contaminants which could potentially pose a health risk to future users of the site were not identified during the intrusive investigation, therefore no remedial works, in terms of contaminated soils, is required upon the site as part of the proposed development of the site.

Land off Southern Way, Folkestone, Kent *Phase 2 Contamination Assessment*



Furthermore, given the development proposals, the majority of site will be capped with proposed buildings or associated areas of hardstanding, further severing any potential contaminant pathway between any impacted soils and future human receptors.

In addition, there are no landscaped public open spaces proposed as part of this development.

Therefore, the site would not be considered to pose a potential risk of significant harm to human health in the context of Part 2A.

10.3 RISKS TO WATER RESOURCES

The geology underlying the site comprises the Gault Clay Formation, designated as Unproductive Strata. The site is not situated within a Groundwater Source Protection Zone.

Significant levels of potentially soluble and therefore mobile organic contaminant sources were not measured on site within the samples tested with the exception of a single isolated total PAH concentration of 148 mg/kg, attributed to tarmac contained within the soil sample analysed at the laboratory. The PAH compounds recorded all have very low solubility.

However, it is anticipated that contaminated Made Ground will be removed during site preparation works. Furthermore, the site will be covered by either buildings or hardstanding, which would prevent percolation of rainwater through the underlying soils. Moreover, the underlying Gault Clay Formation is classified as Unproductive Strata and is not in a Groundwater Source Protection Zone. There are no potable water abstractions within 1km of the site.

Therefore, the risk to water resources is considered low.

10.4 RISKS TO PLANTS

Whilst the concentrations of potentially phytotoxic metals copper, zinc and nickel were all generally below their respective maximum permissible concentrations used in the Sewage Sludge (Use in Agriculture) Regulations 1989 for their relevant soil pH, isolated slightly elevated copper concentrations have been encountered on site which could potentially be considered to pose a phytotoxic risk to proposed planting within any proposed soft landscaped areas.

There is currently no suitable growth media on site. Current development proposals do not include any soft landscaped areas. Should limited soft landscaping be incorporated, it is likely that these would be in planters. The importation of clean suitable topsoil and subsoil would therefore be necessary within any such areas. Any material imported to site for use in any proposed soft landscaped areas would require chemical testing to confirm its suitability for use.



This action would ensure any contamination is isolated below the rooting zone of plants, and therefore unavailable for uptake, thus ensuring any source receptor pathways are severed. The risk to plant health posed by the contaminants identified would be considered to be low following implementation of the remedial strategy, if necessary.

10.5 RISKS TO BUILDINGS & SERVICES

The risks to buried services from organic contamination such as TPH, which can degrade/permeate plastics and other polymer materials used to supply potable water is considered to be low, given the absence of elevated concentrations of TPH, when compared against the Water UK Guidance values.

Elevated levels of organic contaminants were not detected at depths corresponding to likely service run depths across the site. The risk to services from contamination degrading pipes is considered low. However, it is considered that it may be prudent to protect services, notably potable water, on this site given the potential for organic contamination.

It is recommended that confirmation from utility suppliers should be sought.

10.6 GAS RISK ASSESSMENT

The levels of soil gas underlying the site have been monitored as part of a short-term soil gas monitoring programme carried out across the site between the 5th September 2025 and the 17th September 2025. The results obtained from the soil gas survey indicate that elevated levels of soil gas, which may require gas protection measures to be incorporated into the development, are present on site.

The highest carbon dioxide concentration encountered on site during this current investigation was measured in WS11 at 10.3% which is above the relevant guideline limit of 5%. The highest methane concentration encountered on site was also measured in WS11 at 1.8%, which is above the relevant guideline limit of 1%.

Measurement of both borehole pressure and gas emission rates indicates that a maximum gas flow rate of 0.1 l/h was measured on the GA5000 built-in flow meter.

Based on BS 8485:2015, we have assessed the site based on the gas monitoring undertaken as part of the site investigation in order to calculate a Characteristic Gas Situation (CS).

Based on the worst-case gas characteristic situation, the worst-case implied CS derived by combining the maximum observed concentrations from different gas monitoring standpipes during any monitoring event and a worst-case flow rate of 1 l/h are as follows.

Flow Rate (l/h)	CH4 (%)	CO2 (%)	GSV – CH4 (l/h)	GSV – CO2 (l/h)	Implied CH4 CS	Implied CO2 CS
1	1.8	10.3	0.018	0.103	1	2

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On the basis of the measurements in the table above, the GSV is taken to be 0.103 l/h, which is the worst case for methane and carbon dioxide. A GSV of 0.103 l/h lies within the GSV values for **CS2** (<0.07-0.7 l/h) which has a low hazard potential.

BS 8485:2015 enables the minimum level gas protection (score) for the site or zones to be determined based on the determined CS and the type of proposed building. Given the proposed end use of the site, a medium-risk Type C building has been used for calculating the appropriate gas protection score.

Given that the site has an implied CS2, the minimum gas protection score required for a Type C building is 2.5, which means that gas protection measures would be required as part of the proposed development based on current gas concentrations.

Options to achieve the required gas score are based on ventilation and dilution of soil gas and the presence of a structural barrier to the gas and gas-proof membranes. The gas protection score required from the table above must be attained from a mixture of the following three types of protection:

- Floor slabs
- Ventilation measures
- Gas-proof membrane

Each of the protection measures is accordingly weighted to its effectiveness. The table below gives the gas protection scores for commonly used gas protection measures.

Structural barrier	Score	Ventilation	Score	Membrane	Score
Beam & Block precast	0	Low fines gravel/thin geocomposite blanket	0.5	Requires <ul style="list-style-type: none"> • methane gas transmission rate <40.0 ml/day/m2/atm sufficiently durable • sufficiently strong against settlement and the installation process • capable, after installation, of providing a complete barrier to the gas • verified in accordance with CIRIA C735 [N1] 	2
Cast in-situ floor slab	0.5	Passive sub floor dispersal layer; No-fines gravel/geocomposite void former blanket	2.5 or 1.5		
Cast in-situ raft or suspended floor slab	1 or 1.5	Active dispersal layer Fans active abstraction from subfloor	1.5 to 2.5		

Where any membrane is installed such that it does not meet all the criteria indicated above, then the membrane gas protection score will be zero.

As an alternative, further rounds of monitoring could be undertaken in order to obtain greater confidence that there is an absence of any significant flow which could potentially allow the site to be re-classified as CS1, thereby no gas protection would be required.



However, based on the current limited monitoring, and the fact that elevated concentrations of both carbon dioxide and methane have been recorded on site, the classification of CS2 would be deemed the most appropriate, and the above recommended protection would be required.

10.7 WASTE DISPOSAL

Should an excess volume of soil be required to be disposed of off-site then a waste classification may be required. For a waste classification to be undertaken, materials may need to be subjected to chemical testing which would give an indication to the contaminants present and, therefore those most toxic to the environment in the waste. Following the assessment of the waste as hazardous or non-hazardous waste acceptance criteria leachate testing allows the appropriate disposal pathway to a suitably licensed disposal facility to be further determined. The chemical testing carried out to date showed the waste was not hazardous.

Waste acceptance criteria (WAC) leachate testing was carried out on two composite soil samples from site. The results are attached at Appendix 4 and show that no leachable content in excess of the inert limit values was noted with the exception of Total Organic Carbon (TOC) levels - which were present at a concentration of 13.2% in WAC Composite 1 and 3.1% in WAC Composite 2. The limit for inert landfill is 3% and non-hazardous landfill is 5%.

The non-hazardous soils taken from the area covered by WAC Composite 1 (WS1-WS6) would therefore require pretreatment prior to landfill.

Soils taken from the area covered by WAC Composite 2 (WS7-WS12) show a TOC at or around the inert landfill limit and may be accepted at a waste facility licensed to accept inert non-hazardous waste.

Advice should be sought from the waste haulier or waste broker. The disposal route would ultimately be determined by the haulier and would be at the discretion of the intended waste transfer site.

11 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) is a system diagram identifying contaminant sources, routes of exposure (pathways), and which receptors are affected by contaminants moving along those pathways.

The model is produced to identify the zones of the site with different potential contaminations characteristics (e.g. whether contaminants in the soil are likely to be on the surface or at depth, distributed over an entire area or in localised 'hot spots').

The conceptual site model presented in the table below is based on the findings of the site investigation undertaken.

Land off Southern Way, Folkestone, Kent
Phase 2 Contamination Assessment



Source	Pollutant	Pathway	Hazard	Receptor	Observations/ Recommendations	Assessed Risk
Contaminated ground	Metals, organic (hydrocarbons) could be present	→ Direct contact, ingestion, inhalation.	Health risks including skin irritation.	→ Humans: site workers	Normal health and safety precautions. No significantly elevated contaminant concentrations were encountered.	Low based on proposed Commercial End Use
		→ Surface run off.	Lateral movement to surface watercourses.	→ Aquatic resources, ecology and subsequent users including humans.	Significant contamination not encountered on site and there are no surface water courses in immediate vicinity of the site.	Low
		→ Leaching/ Dispersion.	Downward migration to groundwater.	→ Aquatic resources – (Groundwater, abstraction wells) / surface waters.	Significant mobile contamination not present in soils. In addition, site will be predominantly covered by buildings and hardstanding.	Low
		→ Uptake by plants.	Phytotoxic effects.	→ Soft landscaped areas / plants.	Significantly elevated phytotoxic contaminant concentrations generally not present in soils with exception of localised elevated copper however existing soils not suitable to remain on site in any soft landscaping. Placement of clean topsoil required in any proposed soft landscaped areas.	Low based on proposed development and following recommended remedial works
		→ Direct contact	Aggressive chemical attack	→ Building structures and services	It is considered that protection of services notably potable water may be required on this site. To be advised by Statutory Providers.	Low following recommended remedial works

Land off Southern Way, Folkestone, Kent Phase 2 Contamination Assessment



Source	Pollutant	Pathway	Hazard	Receptor	Observations/ Recommendations	Assessed Risk
Liquid contaminant sources	Diesel, Petrol and Oils.	Direct contact; ingestion, inhalation.	Health risks including skin irritation. Lateral and vertical migration of contaminants.	Humans: site workers. Groundwater and surface water.	Significant mobile contamination not encountered on site.	Low
Asbestos	Asbestos fibres within made ground and waste on site	Inhalation.	Health risks including asbestosis, mesothelioma, and lung cancer.	Humans: site workers and future occupants.	Asbestos has not been identified on site as part of the current investigation although has been identified historically. However, the majority of near surface Made Ground material is to be removed from site during site preparatory works or will be capped as part of the development. Appropriate PPE should be worn during site works.	Low based on development proposals
Landfill, madeground,	Ground Gases (CO ₂ , CH ₄)	Inhalation and ingress into buildings	Asphyxiation and explosions	Buildings/humans/ future site users	Slightly elevated ground gases are present on site. Gas protection measures are recommended in new development. Alternatively further monitoring recommended to obtain greater confidence in absence of significant flow.	Low following installation of gas protection measures or undertaking of additional monitoring
Redundant Waste, Demolition Waste		Dermal Contact/ingestion. Potential for migration via surface water run-off	Health Risks	Humans: Site workers	Any unwanted waste on site is to be removed from site during site preparatory works and disposed of in accordance with current legislation. Normal health and safety precautions.	Low

12 CONCLUSIONS AND RECOMMENDATIONS

Based on the site investigation, intrusive works and subsequent data assessment, the following conclusions and recommendations have been drawn in respect of the site at Land off Southern Way, Folkestone, Kent.

Environmental

- The site is located above a Unproductive Strata. The site is not located within an Environment Agency defined groundwater Source Protection Zone.
- Potential significant sources of contamination are considered to be associated with the varying uses of the site associated with the railway industry.
- Based on the proposed commercial end use, concentrations of toxic metals were low and below their respective guidelines in all of the soil samples analysed on site and therefore are not considered to pose a significant risk to human health.
- Based on the proposed commercial end use, no significantly elevated PAH or mobile organic concentrations, including Benzo(a)Pyrene or TPH were encountered across the site in such concentrations as would cause harm to human health, therefore these contaminants do not pose a significant risk of significant harm to human health.
- Current development proposals do not include areas of soft landscaping. However, given that there is no suitable growth media on site, should development proposals change to incorporate soft landscaped areas, it is likely these will be in planters or it would be necessary to excavate the Made Ground material in such areas and replace it with clean sub soil and topsoil to a depth of approximately 600mm. This will also serve to isolate any residual contamination not identified during the site investigation.
- No asbestos-containing material was encountered within any of the soil samples analysed as part of this current investigation.
- It is noted that dibenz(a,h)anthracene and asbestos were encountered during the previous intrusive site investigation. However, as the contaminated Made Ground materials are likely to be removed as part of site preparation works, and as the contaminants were encountered in areas which, according to current site proposals, are to be covered by hardstanding, the risk to future site users is considered to be low.
- The risks posed to workers involved in any future redevelopment of the site are not considered significant providing standard health and hygiene practices are adopted.
- The risks to buried services at the site are considered to be elevated, given the potential for organic contamination and the significant thickness of made ground, therefore the protection of services, notably potable water, are likely to be required on this site. Suitable systems include barrier pipe, iron ductile pipework or placement in trenches backfilled with clean imported material. It is recommended

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that the advice of the service provider is sought regarding the most suitable options for the site.

- Based on gas monitoring results, the site has been given a classification of CS2 which has a low hazard potential, and it is recommended that gas protection be incorporated into any new buildings constructed on the site. As an alternative, further rounds of monitoring could be undertaken in order to obtain greater confidence that there is an absence of any significant flow which could potentially allow the site to be re-classified as CS1, thereby no gas protection would be required.
- Concentrations of significant mobile organic contamination were generally low, with the exception of one sample in which slightly elevated concentrations of Total PAH were encountered. However, it is anticipated that contaminated Made Ground in this part of the site will be removed as part of site preparation. Furthermore, this part of the site will be covered by hardstanding, thus preventing rainwater from coming into contact with contaminated Made Ground and percolating downwards. Moreover, the site overlies Unproductive Strata and is not in a Groundwater Source Protection Zone. The risk to groundwater in the underlying Unproductive Strata, is therefore considered to be low.
- Based on the WAC testing undertaken as part of this current investigation, the majority of any surplus soil material to be removed off site is likely to be classified as non-hazardous. The disposal route would ultimately be determined by the haulier and would be at the discretion of the intended waste transfer site.

Following the remedial works as proposed in this report, the site would be suitable for its intended use and there would be no risks to future site users or sensitive receptors if the site is used for its intended proposed commercial re-development.

Based on the principles and definitions outlined under section 57 of the Environment Act 1995, the site would not be considered to be "Contaminated Land" based on its proposed Commercial end use and following the implementation of the above remedial measures and recommendations.



KEY:

- ⊕ WS - WINDOW SAMPLE
- ⊕ BH - BOREHOLE
- (I) - INSTALLATION
- TP - TRIAL PIT
- HDTP - HAND DUG TRIAL PIT
- SP - SOAKAGE PIT
- ▲ DCP - DYNAMIC CONE PENETRATION
- DP - DYNAMIC PROBE
- HA - HAND AUGER
- PT - PERCOLATION TEST
- GM - GAS MONITORING STANDPIPE
- S - SAMPLE LOCATION

CLIENT:
Oliver James Homes

SITE ADDRESS:
Land off Southern Way
Folkestone

DRAWING NO.:
Figure 1

DRAWING TITLE:
Exploratory Hole Location Plan

PROJECT NO.:
13574

DATE:
09/2025

DRAWN:
PJ

REVISION:
00

GROUND AND ENVIRONMENTAL SERVICES (GES) LIMITED
UNIT 2
MONTPELIER BUSINESS PARK
DENCORA WAY
ASHFORD
KENT TN23 4FG
TEL: 01233 646 237





APPENDIX 1
PROPOSED DEVELOPMENT PLAN



APPENDIX 2

**WINDOW SAMPLE LOGS
AND INSTALLATION DETAILS**



Ground and Environmental Services Limited

Unit 2 Montpelier Business Park
Dencora Way, Ashford
Kent TN23 4FG

Tel: 01233 646237

Window Sampler Log No. WS01

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: 35mm Standpipe Installation	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
--	--	-----------------------------

Co-ordinates: E: N:	Ground Level (m):	Date Started: 26/08/2025 Date Completed: 26/08/2025
----------------------------------	--------------------------	--

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.40		TUB			MADE GROUND:; Soft dark brown sandy gravelly silty matrix. Gravel comprising of clinker, brick and concrete	-0.40		(0.40)
1.00		D			MADE GROUND:; Soft to firm greyish brown silty clay with occasional fine flint gravel and occasional fine rootlets			0.40
1.80		D			...from 1.80 containing brick fragments			(2.00)
2.60		D			Soft to firm pale greyish brown silty slightly sandy CLAY, Also containing fine white chalk gravel (Colluvium)	-2.40		2.40
						-3.00		3.00
						End of W/S 3.00 m (Thickness of basal layer not proven)		

Remarks: Notes: For explanation of symbols and abbreviations, see Key Sheet.	Logged By: PAD	Checked By: CSS
	Scale: 1:25	Approved By:
	FIG No.	



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Unit 2 Montpelier Business Park
Dencora Way, Ashford
Kent TN23 4FG

T: 01233 646237

Hole ID. WS01

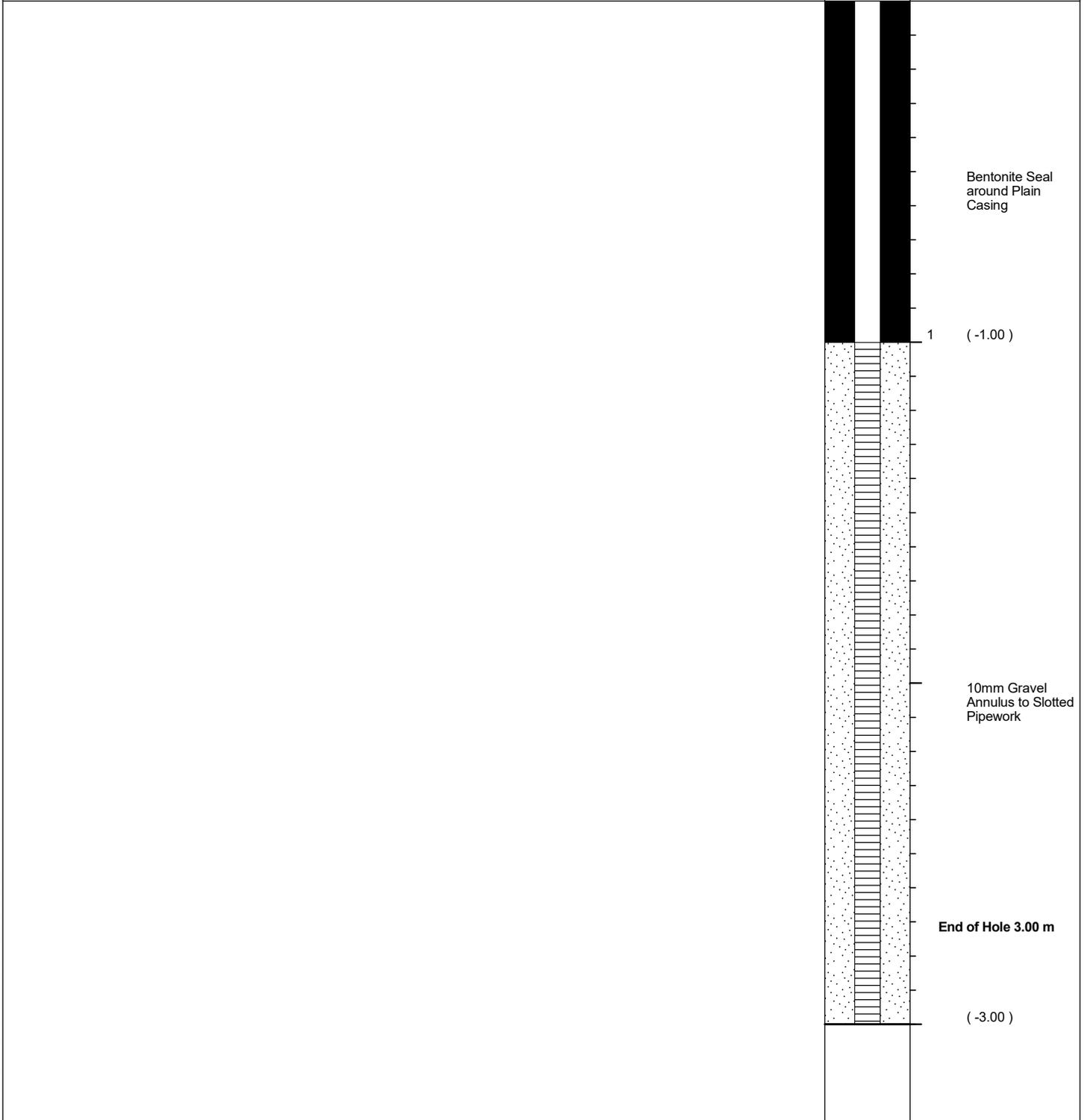
Installation Details & Readings

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact _Support Used:None _Backfill: 35mm Standpipe Installation	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
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Co-ordinates: E: N:	Ground Level (m):	Date Started: 26/08/2025 Date Completed: 26/08/2025
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Installation Date : 26/08/2025 Depth to TOP Response Zone : 1 (m) Installation Type : SP Depth to BASE Response Zone : 3 (m)	Installation Diagram	Depth Related Remarks (Elevation)
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Compiled By:	Checked By:
PAD	CSS
Scale:	Approved By:
FIG No.	

GSG PIEZO/STANDPIPE LOG LOGS.GPJ GSG-AGS3-STD TEMPLATE.GDT 11/9/25

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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Tel: 01233 646237

Window Sampler Log No. WS02

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: Arisings	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
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Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
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Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)	
Depth (m)	No.	Type	Result						
0.30		TUB			MADE GROUND:; Dark greyish brown sandy gravelly silty clayey matrix. Gravel comprising of frequent brick and flint and white chalk. Also containing fine roots				
0.90		D							(1.70)
1.60		D							
2.00		D			Soft to firm dry greyish brown silty CLAY (Colluvium)	-1.70		1.70	
						-2.00		2.00	
						End of W/S 2.00 m (Thickness of basal layer not proven)			

Remarks:	Logged By: PAD	Checked By: CSS
	Scale: 1:25	Approved By:
	FIG No.	

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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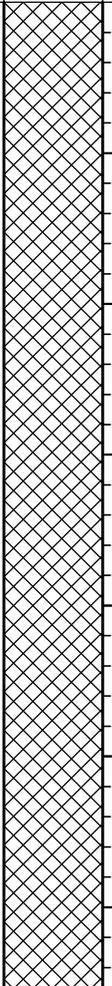
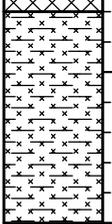
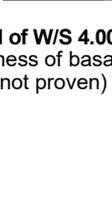
Tel: 01233 646237

Window Sampler Log No. WS03

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: Arisings	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
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Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
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Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.50		TUB			MADE GROUND:; Dark greyish brown sandy gravelly silty clayey matrix. Gravel comprising of occasional brick and flint and white chalk. Also containing fine roots			
1.10		D		...from 1.40 to 1.70 containing frequent brick fragments				
2.00		D						
2.90		D			Soft dark greenish brown slightly organic silty CLAY (Colluvium)	-3.30		3.30
						-4.00		4.00
						End of W/S 4.00 m (Thickness of basal layer not proven)		

Remarks:	Logged By: PAD	Checked By: CSS
	Scale: 1:25	Approved By:
	FIG No.	

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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Unit 2 Montpelier Business Park
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Kent TN23 4FG

Tel: 01233 646237

Window Sampler Log No. WS04

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: Arisings	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
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Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
---------------------------	-------------------	--

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.40		TUB			MADE GROUND: Hardcore fill comprising medium to coarse gravel (railway ballast). Some brick rubble.	-0.40		(0.40)
1.00		D			MADE GROUND: Mid brown to dark brown/grey sandy GRAVEL. Gravel is flint, ballast and occasional chalk.	-1.30		0.40 (0.90)
2.00		D			MADE GROUND: Chalk fill	-1.40		1.30 (0.10) 1.40
2.90		D			MADE GROUND: Dark greyish brown sandy gravelly silty clayey matrix. Gravel comprising of frequent brick and flint and white chalk. Also containing fine roots	-3.30		(1.90)
3.60		D			Soft dark greenish brown slightly organic silty CLAY (Colluvium)	-4.00		3.30 (0.70)
								4.00

End of W/S 4.00 m
(Thickness of basal layer not proven)

Remarks:	Logged By: PAD	Checked By: CSS
	Scale: 1:25	Approved By:
	FIG No.	

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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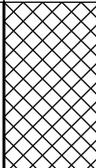
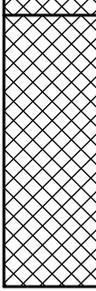
Tel: 01233 646237

Window Sampler Log No. WS05

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: Arisings	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
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Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
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Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.40		TUB			MADE GROUND:, Soft dark brown sandy gravelly silty matrix			(0.60)
1.00		D			MADE GROUND:, Soft to firm greyish brown silty clay with occasional fine flint and brick fragments	-0.60		0.60 (0.90)
1.50		D				-1.50		1.50

End of W/S 1.50 m
(Thickness of basal layer not proven)

Remarks: Hole refused on unknown obstruction at depth of 1.5m	Logged By: PAD	Checked By: CSS
	Scale: 1:25	Approved By:
	FIG No.	

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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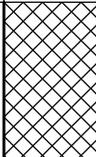
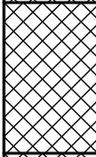
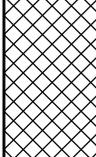
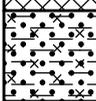
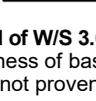
Tel: 01233 646237

Window Sampler Log No. WS06

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: 35mm Standpipe Installation	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
--	--	-----------------------------

Co-ordinates: E: N:	Ground Level (m):	Date Started: 26/08/2025 Date Completed: 26/08/2025
----------------------------------	--------------------------	--

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.20		TUB			MADE GROUND: Overgrown vegetation over white chalk fill			(1.00)
1.00		D			MADE GROUND:; Greyish brown silty clay	-1.00		1.00 (0.30)
1.60		D			MADE GROUND:; Brown sandy silty gravelly matrix. Gravel comprising of frequent fine brick and occasional flint and concrete fragments	-1.30		1.30 (0.50)
2.40		D			MADE GROUND:; Brown silty clay with occasional red brick fragments	-1.80		1.80 (0.90)
3.00		D			Soft to firm pale brown silty slightly sandy CLAY, Also containing occasional medium to coarse sub angular flint gravel (Colluvium)	-2.70		2.70 (0.30)
						-3.00		3.00

End of W/S 3.00 m
(Thickness of basal layer not proven)

Remarks: Notes: For explanation of symbols and abbreviations, see Key Sheet.	Logged By: PAD	Checked By: CSS
	Scale: 1:25	Approved By:
	FIG No.	



Ground and Environmental Services Limited

Unit 2 Montpelier Business Park
Dencora Way, Ashford
Kent TN23 4FG

T: 01233 646237

Hole ID. WS06

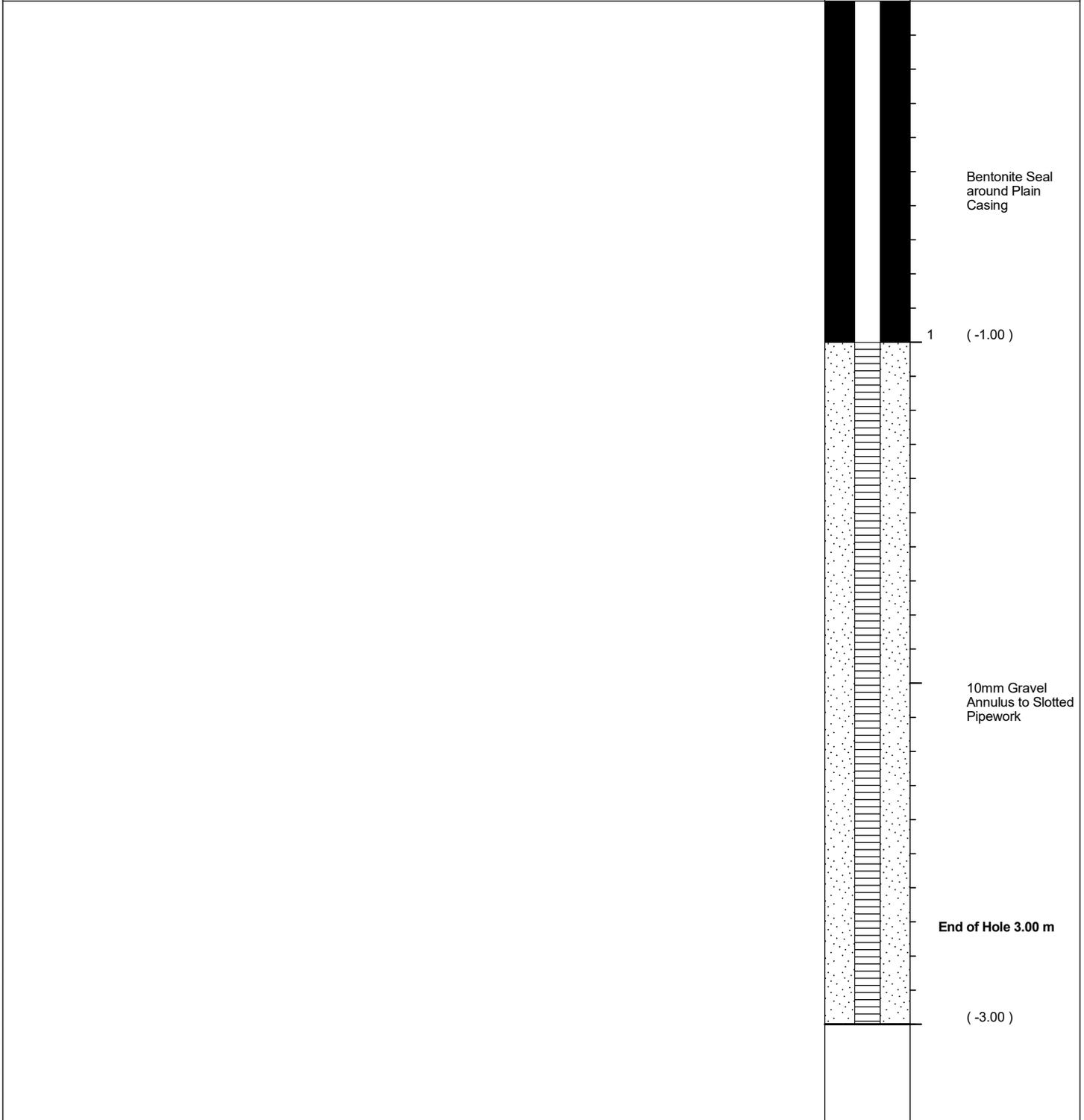
Installation Details & Readings

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact _Support Used:None _Backfill: 35mm Standpipe Installation	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
---	---	------------------

Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
---------------------------	-------------------	--

Installation Date : 26/08/2025	Depth to TOP Response Zone : 1 (m)	Installation Diagram	Depth Related Remarks (Elevation)
Installation Type : SP	Depth to BASE Response Zone : 3 (m)		



Compiled By: PAD	Checked By: CSS
Scale:	Approved By:
FIG No.	

GSG PIEZO/STANDPIPE LOG LOGS.GPJ GSG-AGS3-STD TEMPLATE.GDT 11/9/25

Notes: For explanation of symbols and abbreviations, see Key Sheet.



Ground and Environmental Services Limited

Unit 2 Montpelier Business Park
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Kent TN23 4FG

Tel: 01233 646237

Window Sampler Log No. WS07

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: Arisings	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
--	---	------------------

Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
---------------------------	-------------------	--

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.40		TUB			MADE GROUND: Grass and brambles over mid brown sandy silty topsoil	-0.20		(0.20) 0.20
					MADE GROUND: Loose dark grey rail ballast and black coal. Occasional brick rubble			(0.55)
1.00		D			MADE GROUND: Off white chalk fill	-0.75		0.75 (0.15)
					MADE GROUND: Firm light brown/grey and mottled orange slightly silty clay with frequent chalk fragmnets. Occasional flint.			0.90 (0.70)
1.80		D			MADE GROUND: Orange brown slightly clayey silty sand with random brick fragments	-1.60		1.60 (0.30)
					Firm mid grey /brown mottled orange CLAY			1.90 (0.40)
2.60		D			Soft mid to dark greenish grey CLAY	-2.30		2.30 (0.70)
								3.00
						End of W/S 3.00 m (Thickness of basal layer not proven)		

Remarks:	Logged By: PAD	Checked By: CSS
	Scale: 1:25	Approved By:
	FIG No.	

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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Dencora Way, Ashford
Kent TN23 4FG

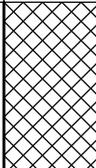
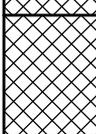
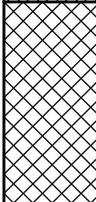
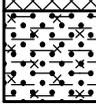
Tel: 01233 646237

Window Sampler Log No. WS08

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact _Support Used:None _Backfill: Arisings	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
--	---	------------------

Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
---------------------------	-------------------	--

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.40		TUB			MADE GROUND:; Overgrown vegetation over fine light brown sandy gravelly matrix. Gravel comprising of brick and flint			(0.60)
					...from 0.40 becoming dark grey/black in colour			
1.00		D			MADE GROUND:; White chalk fill	-0.60		0.60 (0.40)
					MADE GROUND:; Orangish brown silty clay with occasional chalk gravel	-1.00		1.00 (0.70)
1.70		D			Soft to firm dry orangeish brown silty slightly sandy CLAY (Colluvium)	-1.70		1.70 (0.30)
						-2.00		2.00
						End of W/S 2.00 m (Thickness of basal layer not proven)		

Remarks:	Logged By: PAD	Checked By: CSS
	Scale: 1:25	Approved By:
	FIG No.	

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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Unit 2 Montpelier Business Park
Dencora Way, Ashford
Kent TN23 4FG

Tel: 01233 646237

Window Sampler Log No. WS09

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: Arisings	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
--	---	------------------

Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
---------------------------	-------------------	--

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.50		TUB			MADE GROUND: Grass and vegetation over a sandy silty topsoil MADE GROUND: Dark brown slightly silty sand and gravel fill. Gravel is fine to coarse angular to subangular limestone, flint and brick	-0.10		(0.10) (0.45)
					MADE GROUND: White chalk fill	-0.55		0.55 (0.45)
1.20		D			MADE GROUND: Firm orange brown slightly gravelly CLAY. Gravel is fine to coarse sub angular to rounded flint	-1.00		1.00 (0.50)
					Firm mid grey speckled white slightly fissured CLAY with frequent chalk fragments (Colluvium)	-1.50		1.50 (0.30)
2.00		D			Firm to stiff mid grey closely fissured CLAY (Gault Clay)	-1.80		1.80 (1.20)
2.70		D				-3.00		3.00
						End of W/S 3.00 m (Thickness of basal layer not proven)		

Remarks:	Logged By: PAD	Checked By: CSS
	Scale: 1:25	Approved By:
	FIG No.	

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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Unit 2 Montpelier Business Park
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Tel: 01233 646237

Window Sampler Log No. WS10

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: 35mm Standpipe Installation	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
--	--	-----------------------------

Co-ordinates: E: N:	Ground Level (m):	Date Started: 26/08/2025 Date Completed: 26/08/2025
----------------------------------	--------------------------	--

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.40		TUB			MADE GROUND:, Grass cover over soft brown friable silty clay	-0.15		(0.15)
					MADE GROUND:, White chalk fill			0.15
1.20		D			MADE GROUND:, Orangeish brown silty clay with rare fine brick fragments and rare fine chalk gravel	-1.00		1.00
					Firm mid grey speckled white slightly fissured CLAY with frequent chalk fragments (Colluvium)	-1.40		1.40
2.10		D			Firm to stiff mid grey closely fissured CLAY (Gault Clay)	-2.10		2.10
								(0.90)
3.00		D				-3.00		3.00
						End of W/S 3.00 m (Thickness of basal layer not proven)		

Remarks:	Logged By:	Checked By:
	PAD	CSS
	Scale: 1:25	Approved By:
FIG No.		

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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Unit 2 Montpelier Business Park
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T: 01233 646237

Hole ID. WS10

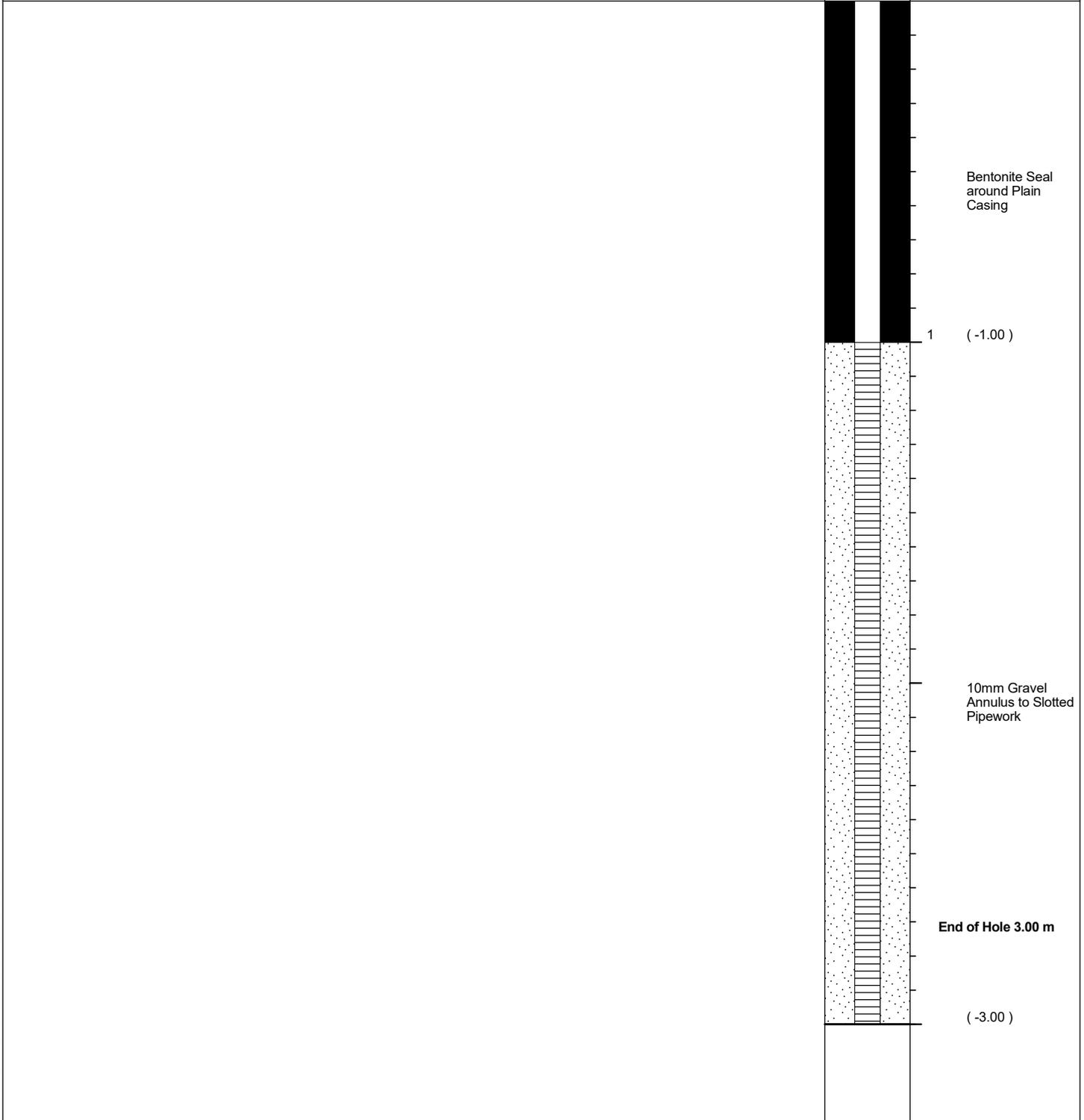
Installation Details & Readings

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact _Support Used:None _Backfill: 35mm Standpipe Installation	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
--	--	-----------------------------

Co-ordinates: E: N:	Ground Level (m):	Date Started: 26/08/2025 Date Completed: 26/08/2025
----------------------------------	--------------------------	--

Installation Date : 26/08/2025 Depth to TOP Response Zone : 1 (m) Installation Type : SP Depth to BASE Response Zone : 3 (m)	Installation Diagram	Depth Related Remarks (Elevation)
---	-----------------------------	--



Compiled By: PAD	Checked By: CSS
Scale:	Approved By:
FIG No.	

GSG PIEZO/STANDPIPE LOG LOGS.GPJ GSG-AGS3-STD TEMPLATE.GDT 11/9/25

Notes: For explanation of symbols and abbreviations, see Key Sheet.



Ground and Environmental Services Limited

Unit 2 Montpelier Business Park
Dencora Way, Ashford
Kent TN23 4FG

Tel: 01233 646237

Window Sampler Log No. WS11

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: 35mm Standpipe Installation	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
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Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
---------------------------	-------------------	--

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.40		TUB			MADE GROUND:; Grey very gravelly clayey matrix. Gravel comprising of frequent fine to coarse sub angular and sub rounded flint and concrete fragments			(0.60)
0.90		D			MADE GROUND:; Grey slightly gravelly silty clay. Gravel comprising of fine to coarse flint with occasional brick fragments ...from 0.80 also containing single timber fragment	-0.60		0.60
1.60		D						(1.80)
2.60		D			Firm mid grey slightly organic silty CLAY (Colluvium)	-2.40		2.40
						-3.00		3.00
						End of W/S 3.00 m (Thickness of basal layer not proven)		

Remarks:	Logged By:	Checked By:
	PAD	CSS
	Scale: 1:25	Approved By:
FIG No.		

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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Unit 2 Montpelier Business Park
Dencora Way, Ashford
Kent TN23 4FG

T: 01233 646237

Hole ID. WS11

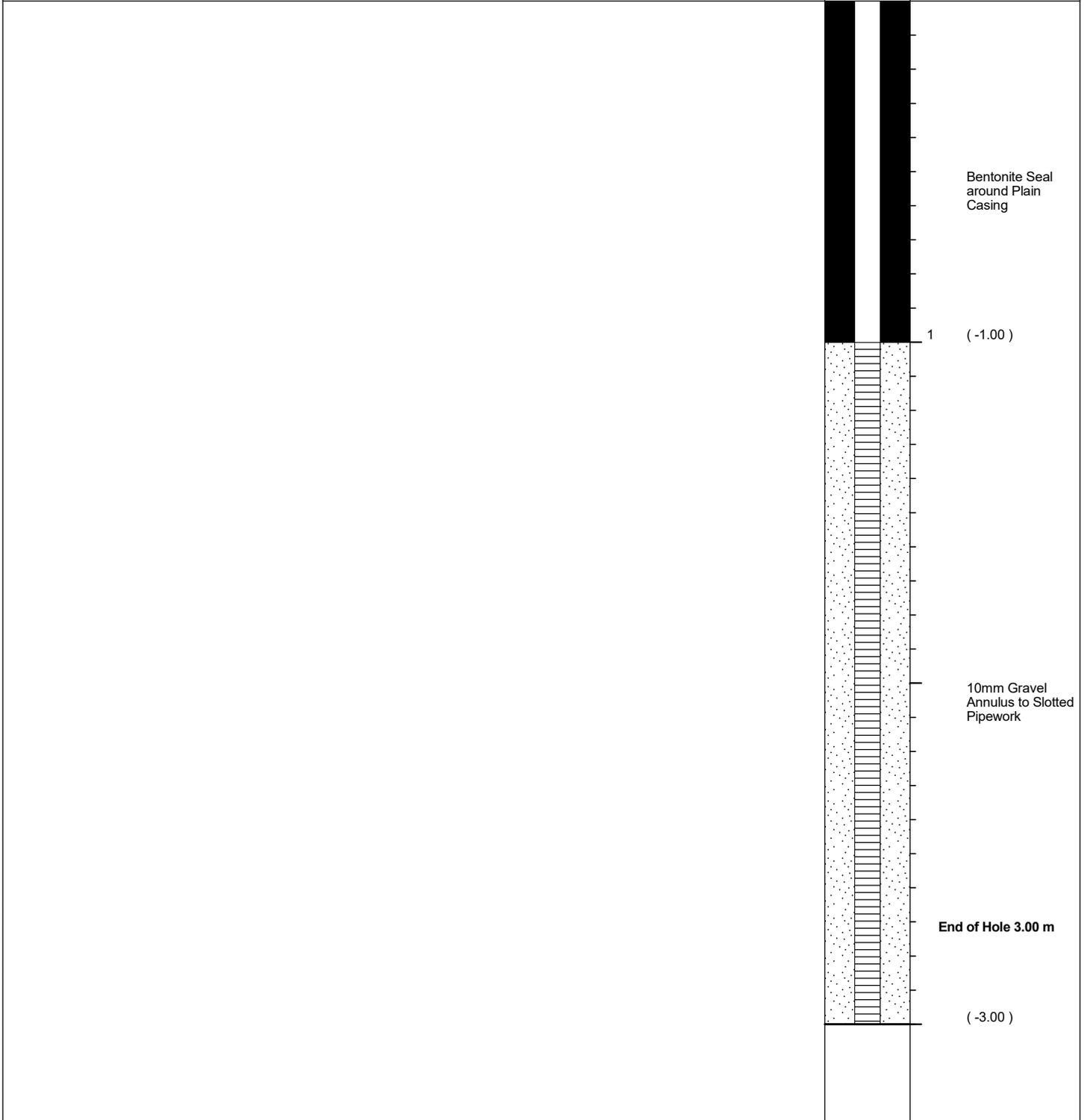
Installation Details & Readings

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact _Support Used:None _Backfill: 35mm Standpipe Installation	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
---	---	------------------

Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
---------------------------	-------------------	--

Installation Date : 26/08/2025	Depth to TOP Response Zone : 1 (m)	Installation Diagram	Depth Related Remarks (Elevation)
Installation Type : SP	Depth to BASE Response Zone : 3 (m)		



Bentonite Seal around Plain Casing

1 (-1.00)

10mm Gravel Annulus to Slotted Pipework

End of Hole 3.00 m

(-3.00)

Compiled By: PAD	Checked By: CSS
Scale:	Approved By:
FIG No.	

GSG PIEZO/STANDPIPE LOG LOGS.GPJ GSG-AGS3-STD TEMPLATE.GDT 11/9/25

Notes: For explanation of symbols and abbreviations, see Key Sheet.



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Unit 2 Montpelier Business Park
Dencora Way, Ashford
Kent TN23 4FG

Tel: 01233 646237

Window Sampler Log No. WS12

Sheet: 1 of 1

Equipment & Methods. Premier 110 Compact Support Used:None Backfill: Arisings	Project Name: Land off Southern Way Project Location: Folkestone Client: Oliver James Homes Ltd	Job No: 13574
--	---	------------------

Co-ordinates: E: N:	Ground Level (m):	Date Started:26/08/2025 Date Completed:26/08/2025
---------------------------	-------------------	--

Samples and In situ Testing				Field Records	DESCRIPTION	Reduced Level (m)	Legend	Depth (Thick) (m)
Depth (m)	No.	Type	Result					
0.50		TUB			MADE GROUND: Dark grey and black ballast	-0.30		(0.30) 0.30
					MADE GROUND: Chalk fill with occasional flint			(0.70) 1.00
1.20		D			MADE GROUND; Firm mid grey mottled orange clay with occasional rounded flint gravel	-1.00		(1.10) 2.10
2.10		D			MADE GROUND: Soft mid brown/grey mottled white slightly sandy gravelly CLAY. Gravel is fine to medium chalk, flint and occasional brick	-2.10		(0.50) 2.60
2.80		D			Soft dark greenish grey mottled dark grey slightly organic sandy CLAY. (Colluvium)	-2.60		(0.40) 3.00
						-3.00		3.00
						End of W/S 3.00 m (Thickness of basal layer not proven)		

Remarks:	Logged By: PAD	Checked By: CSS
	Scale: 1:25	Approved By:
	FIG No.	

Notes: For explanation of symbols and abbreviations, see Key Sheet.



APPENDIX 3
SOIL GAS AND GROUNDWATER LEVEL
MONITORING RESULTS



APPENDIX 4
ANALYTICAL TEST RESULTS

Paolo Di Pasquale
Ground & Environmental Services Ltd
Unit 2
Montpelier Business Park
Dencora Way
Ashford
Kent
TN23 4FG

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

DETS Report No: 25-07789

Site Reference: Land off Southern Way, Folkestone

Project / Job Ref: 13574

Order No: 6140.13574

Sample Receipt Date: 29/08/2025

Sample Scheduled Date: 29/08/2025

Report Issue Number: 1

Reporting Date: 08/09/2025

Authorised by:

Steve Knight
Customer Support 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.

For Topsoil and WAC analysis the expanded uncertainty measurement should be considered while evaluating results against compliance values.

Soil Analysis Certificate						
DETS Report No: 25-07789	~Date Sampled	26/08/25	26/08/25	26/08/25	26/08/25	26/08/25
Ground & Environmental Services Ltd	~Time Sampled	None Supplied				
~Site Reference: Land off Southern Way, Folkestone	~TP / BH No	WS1	WS2	WS3	WS4	WS5
~Project / Job Ref: 13574	~Additional Refs	None Supplied				
~Order No: 6140.13574	~Depth (m)	0.40	0.30	0.50	0.40	0.40
Reporting Date: 08/09/2025	DETS Sample No	788137	788138	788139	788140	788141

Determinand	Unit	RL	Accreditation	26/08/25	26/08/25	26/08/25	26/08/25	26/08/25
Stone Content	%	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Asbestos Screen ⁽⁵⁾	N/a	N/a	ISO17025	Not Detected				
pH	pH Units	N/a	MCERTS	7.8	7.8	7.8	7.8	7.8
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	18	17	16	< 10	< 10
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.02	0.02	0.02	< 0.01	< 0.01
Organic Matter (SOM)	%	< 0.1	MCERTS	1.2	12.7	35.9	6.2	21.6
Arsenic (As)	mg/kg	< 2	MCERTS	24	15	18	12	22
Barium (Ba)	mg/kg	< 2.5	MCERTS	371.8	174.5	264.4	94.9	190.4
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.7	0.8	0.8	1.4	0.6
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.3	0.2	0.3	0.5	1
Chromium (Cr)	mg/kg	< 2	MCERTS	13	13	11	15	21
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	15	119	671	43	141
Lead (Pb)	mg/kg	< 3	MCERTS	16	174	143	17	559
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	2.7	< 1	< 1	1.5
Nickel (Ni)	mg/kg	< 3	MCERTS	25	20	19	20	21
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	16	25	38	33	34
Zinc (Zn)	mg/kg	< 3	MCERTS	44	91	170	64	157
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Mineral Oil (C10 - C40)	mg/kg	< 10	MCERTS	< 10	< 10	< 10	53	71

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: 25-07789	~Date Sampled	26/08/25	26/08/25	26/08/25	26/08/25	26/08/25
Ground & Environmental Services Ltd	~Time Sampled	None Supplied				
~Site Reference: Land off Southern Way, Folkestone	~TP / BH No	WS6	WS7	WS8	WS9	WS10
~Project / Job Ref: 13574	~Additional Refs	None Supplied				
~Order No: 6140.13574	~Depth (m)	0.20	0.40	0.40	0.50	0.40
Reporting Date: 08/09/2025	DETS Sample No	788142	788143	788144	788145	788146

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)	(n)	(n)
Stone Content	%	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Asbestos Screen ⁽⁵⁾	N/a	N/a	ISO17025	Not Detected				
pH	pH Units	N/a	MCERTS	8.2	8.0	7.9	7.9	8.0
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	< 10	25	56	22	15
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	< 0.01	0.03	0.06	0.02	0.02
Organic Matter (SOM)	%	< 0.1	MCERTS	1.2	8.2	48.1	12.5	1.4
Arsenic (As)	mg/kg	< 2	MCERTS	< 2	35	16	< 2	< 2
Barium (Ba)	mg/kg	< 2.5	MCERTS	9.0	296.0	215.1	19.9	7.9
Beryllium (Be)	mg/kg	< 0.5	MCERTS	< 0.5	0.8	0.8	< 0.5	< 0.5
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.3	1.3	0.5	< 0.2	0.3
Chromium (Cr)	mg/kg	< 2	MCERTS	< 2	21	18	< 2	< 2
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	< 4	54	47	29	4
Lead (Pb)	mg/kg	< 3	MCERTS	< 3	89	495	11	< 3
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	< 3	22	19	4	< 3
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	2	60	38	3	3
Zinc (Zn)	mg/kg	< 3	MCERTS	9	77	209	18	14
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Mineral Oil (C10 - C40)	mg/kg	< 10	MCERTS	< 10	< 10	16	< 10	< 10

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: 25-07789	~Date Sampled	26/08/25	26/08/25	26/08/25	26/08/25
Ground & Environmental Services Ltd	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Land off Southern Way, Folkestone	~TP / BH No	WS11	WS12	WAC Composite 1	WAC Composite 2
~Project / Job Ref: 13574	~Additional Refs	None Supplied	None Supplied	WS1 - WS6	WS7 - WS12
~Order No: 6140.13574	~Depth (m)	0.40	0.50	None Supplied	None Supplied
Reporting Date: 08/09/2025	DETS Sample No	788147	788148	788149	788150

Determinand	Unit	RL	Accreditation				
Stone Content	%	< 0.1	NONE	69.2	74.1		
Asbestos Screen ⁽⁵⁾	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	8.0	7.8		
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	120	64		
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.12	0.06		
Organic Matter (SOM)	%	< 0.1	MCERTS	0.9	2.4		
Arsenic (As)	mg/kg	< 2	MCERTS	3	4	16	18
Barium (Ba)	mg/kg	< 2.5	MCERTS	34.8	51.6	251.0	156.0
Beryllium (Be)	mg/kg	< 0.5	MCERTS	< 0.5	< 0.5	0.8	0.8
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	0.5	0.3
Chromium (Cr)	mg/kg	< 2	MCERTS	4	6	16	18
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2		
Copper (Cu)	mg/kg	< 4	MCERTS	6	13	348	22
Lead (Pb)	mg/kg	< 3	MCERTS	23	101	330	41
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	1.4	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	4	5	18	23
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	7	7	33	28
Zinc (Zn)	mg/kg	< 3	MCERTS	18	67	118	47
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2		
Mineral Oil (C10 - C40)	mg/kg	< 10	MCERTS	32	< 10		

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 - Speciated PAHs						
DETS Report No: 25-07789	~Date Sampled	26/08/25	26/08/25	26/08/25	26/08/25	26/08/25
Ground & Environmental Services Ltd	~Time Sampled	None Supplied				
~Site Reference: Land off Southern Way, Folkestone	~TP / BH No	WS1	WS2	WS3	WS4	WS5
~Project / Job Ref: 13574	~Additional Refs	None Supplied				
~Order No: 6140.13574	~Depth (m)	0.40	0.30	0.50	0.40	0.40
Reporting Date: 08/09/2025	DETS Sample No	788137	788138	788139	788140	788141

Determinand	Unit	RL	Accreditation	26/08/25	26/08/25	26/08/25	26/08/25	26/08/25
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.15	0.19	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.16
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.11	0.49
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.15	0.50
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.30	2.35	8.26
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.54	3.14
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.14	0.66	5.59	36.10
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.12	0.62	4.96	30.50
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.41	2.90	17
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.11	0.50	2.81	9.53
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.13	0.60	3.56	14
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.22	1.13	4.78
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.11	0.48	3.25	13
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.36	1.87	4.98
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.41	1.21
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.24	1.62	3.96
**Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	4.5	31.4	148

Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 25-07789	~Date Sampled	26/08/25	26/08/25	26/08/25	26/08/25	26/08/25
Ground & Environmental Services Ltd	~Time Sampled	None Supplied				
~Site Reference: Land off Southern Way, Folkestone	~TP / BH No	WS6	WS7	WS8	WS9	WS10
~Project / Job Ref: 13574	~Additional Refs	None Supplied				
~Order No: 6140.13574	~Depth (m)	0.20	0.40	0.40	0.50	0.40
Reporting Date: 08/09/2025	DETS Sample No	788142	788143	788144	788145	788146

Determinand	Unit	RL	Accreditation	(n)		(n)		(n)	
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.16	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.13	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	0.25	2.44	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.84	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.20	14.60	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.14	13.80	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	9.54	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.13	7.22	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.12	9.65	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	3.71	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	9.77	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	5.73	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	1.20	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	5.29	< 0.1	< 0.1	< 0.1
**Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	84.1	< 1.6	< 1.6	< 1.6

Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 25-07789	~Date Sampled	26/08/25	26/08/25			
Ground & Environmental Services Ltd	~Time Sampled	None Supplied	None Supplied			
~Site Reference: Land off Southern Way, Folkestone	~TP / BH No	WS11	WS12			
~Project / Job Ref: 13574	~Additional Refs	None Supplied	None Supplied			
~Order No: 6140.13574	~Depth (m)	0.40	0.50			
Reporting Date: 08/09/2025	DETS Sample No	788147	788148			

Determinand	Unit	RL	Accreditation			
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	0.15	0.35	
Fluorene	mg/kg	< 0.1	MCERTS	0.16	0.29	
Phenanthrene	mg/kg	< 0.1	MCERTS	1.18	2.04	
Anthracene	mg/kg	< 0.1	MCERTS	0.38	0.88	
Fluoranthene	mg/kg	< 0.1	MCERTS	3.84	8.01	
Pyrene	mg/kg	< 0.1	MCERTS	3.52	7.16	
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	2.32	4.54	
Chrysene	mg/kg	< 0.1	MCERTS	1.59	3.16	
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	2.37	5.34	
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.89	1.43	
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	2.21	4.57	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	1.38	2.65	
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.26	0.51	
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	1.18	2.34	
**Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	21.4	43.3	

Soil Analysis Certificate - EPH Banded (Type D)						
DETS Report No: 25-07789	~Date Sampled	26/08/25	26/08/25	26/08/25	26/08/25	26/08/25
Ground & Environmental Services Ltd	~Time Sampled	None Supplied				
~Site Reference: Land off Southern Way, Folkestone	~TP / BH No	WS1	WS2	WS3	WS4	WS5
~Project / Job Ref: 13574	~Additional Refs	None Supplied				
~Order No: 6140.13574	~Depth (m)	0.40	0.30	0.50	0.40	0.40
Reporting Date: 08/09/2025	DETS Sample No	788137	788138	788139	788140	788141

Determinand	Unit	RL	Accreditation					
EPH (>C8 - C10)	mg/kg	< 1	MCERTS	< 1	< 1	2	2	2
EPH (>C10 - C12)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
EPH (>C12 - C16)	mg/kg	< 1	MCERTS	< 1	< 1	1	5	14
EPH (>C16 - C21)	mg/kg	< 1	MCERTS	< 1	< 1	5	37	143
EPH (>C21 - C35)	mg/kg	< 6	NONE	< 6	< 6	19	207	295
EPH (C8 - C35)	mg/kg	< 6	NONE	< 6	< 6	26	251	454

Soil Analysis Certificate - EPH Banded (Type D)						
DETS Report No: 25-07789	~Date Sampled	26/08/25	26/08/25	26/08/25	26/08/25	26/08/25
Ground & Environmental Services Ltd	~Time Sampled	None Supplied				
~Site Reference: Land off Southern Way, Folkestone	~TP / BH No	WS6	WS7	WS8	WS9	WS10
~Project / Job Ref: 13574	~Additional Refs	None Supplied				
~Order No: 6140.13574	~Depth (m)	0.20	0.40	0.40	0.50	0.40
Reporting Date: 08/09/2025	DETS Sample No	788142	788143	788144	788145	788146

Determinand	Unit	RL	Accreditation	(n)		(n)		(n)	
EPH (>C8 - C10)	mg/kg	< 1	MCERTS	< 1	1	2	< 1	< 1	< 1
EPH (>C10 - C12)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1	< 1
EPH (>C12 - C16)	mg/kg	< 1	MCERTS	< 1	< 1	6	< 1	< 1	< 1
EPH (>C16 - C21)	mg/kg	< 1	MCERTS	< 1	6	76	< 1	< 1	< 1
EPH (>C21 - C35)	mg/kg	< 6	NONE	8	< 6	233	< 6	< 6	< 6
EPH (C8 - C35)	mg/kg	< 6	NONE	8	7	317	< 6	< 6	< 6

Soil Analysis Certificate - EPH Banded (Type D)						
DETS Report No: 25-07789	~Date Sampled	26/08/25	26/08/25			
Ground & Environmental Services Ltd	~Time Sampled	None Supplied	None Supplied			
~Site Reference: Land off Southern Way, Folkestone	~TP / BH No	WS11	WS12			
~Project / Job Ref: 13574	~Additional Refs	None Supplied	None Supplied			
~Order No: 6140.13574	~Depth (m)	0.40	0.50			
Reporting Date: 08/09/2025	DETS Sample No	788147	788148			

Determinand	Unit	RL	Accreditation				
EPH (>C8 - C10)	mg/kg	< 1	MCERTS	1	< 1		
EPH (>C10 - C12)	mg/kg	< 1	MCERTS	< 1	< 1		
EPH (>C12 - C16)	mg/kg	< 1	MCERTS	7	4		
EPH (>C16 - C21)	mg/kg	< 1	MCERTS	41	40		
EPH (>C21 - C35)	mg/kg	< 6	NONE	59	95		
EPH (C8 - C35)	mg/kg	< 6	NONE	107	138		

Waste Acceptance Criteria Analytical Certificate																																	
DETS Report No: 25-07789		~Date Sampled	26/08/25		Landfill Waste Acceptance Criteria Limits <table border="1"> <thead> <tr> <th>Inert Waste Landfill</th> <th>Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill</th> <th>Hazardous Waste Landfill</th> </tr> </thead> <tbody> <tr> <td>3%</td> <td>5%</td> <td>6%</td> </tr> <tr> <td>--</td> <td>--</td> <td>10%</td> </tr> <tr> <td>6</td> <td>--</td> <td>--</td> </tr> <tr> <td>1</td> <td>--</td> <td>--</td> </tr> <tr> <td>500</td> <td>--</td> <td>--</td> </tr> <tr> <td>100</td> <td>--</td> <td>--</td> </tr> <tr> <td>--</td> <td>>6</td> <td>--</td> </tr> <tr> <td>--</td> <td>To be evaluated</td> <td>To be evaluated</td> </tr> </tbody> </table>		Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	3%	5%	6%	--	--	10%	6	--	--	1	--	--	500	--	--	100	--	--	--	>6	--	--	To be evaluated	To be evaluated
Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill																															
3%	5%	6%																															
--	--	10%																															
6	--	--																															
1	--	--																															
500	--	--																															
100	--	--																															
--	>6	--																															
--	To be evaluated	To be evaluated																															
Ground & Environmental Services Ltd		~Time Sampled	None Supplied																														
~Site Reference: Land off Southern Way, Folkestone		~TP / BH No	WAC Composite 1																														
~Project / Job Ref: 13574		~Additional Refs	WS1 - WS6																														
~Order No: 6140.13574		~Depth (m)	None Supplied																														
Reporting Date: 08/09/2025		DETS Sample No	788149																														
Determinand	Unit	MDL																															
TOC ^{MU}	%	< 0.1	13.2																														
Loss on Ignition ^{MU}	%	< 0.01	13																														
BTEX ^{MU}	mg/kg	< 0.05	< 0.05																														
Sum of PCBs	mg/kg	< 0.1	< 0.1																														
Mineral Oil ^{MU}	mg/kg	< 10	< 10																														
Total PAH ^{MU}	mg/kg	< 1.7	2.6																														
pH ^{MU}	pH Units	N/a	7.8																														
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	2.4																														
Eluate Analysis			10:1 mg/l		Cumulative 10:1 * mg/kg	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)																											
Arsenic		0.0011			0.011	0.5 2 25																											
Barium		0.0300			0.300	20 100 300																											
Cadmium		< 0.0002			< 0.002	0.04 1 5																											
Chromium		0.0007			0.007	0.5 10 70																											
Copper		0.0053			0.053	2 50 100																											
Mercury		< 0.00004			< 0.0004	0.01 0.2 2																											
Molybdenum		0.0028			0.028	0.5 10 30																											
Nickel		< 0.0002			< 0.002	0.4 10 40																											
Lead		0.0018			0.018	0.5 10 50																											
Antimony		< 0.0002			< 0.002	0.06 0.7 5																											
Selenium		0.0003			0.003	0.1 0.5 7																											
Zinc		0.014			0.14	4 50 200																											
Chloride		< 1.0			< 10	800 15000 25000																											
Fluoride		< 0.5			< 5	10 150 500																											
Sulphate		1.6			16	1000 20000 50000																											
TDS		45			450	4000 60000 100000																											
Phenol Index		< 0.01			< 0.1	1 - -																											
DOC		5.4			54.4	500 800 1000																											
Leach Test Information																																	
Sample Mass (kg)		0.10																															
Dry Matter (%)		94.4																															
Moisture (%)		6																															
Stage 1																																	
Volume Eluate L10 (litres)		0.89																															
Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion. Stated limits are for guidance only and Normec DETS Limited cannot be held responsible for any discrepancies with current legislation.																																	

Soil Analysis Certificate - Sample Descriptions

DETS Report No: 25-07789	
Ground & Environmental Services Ltd	
~Site Reference: Land off Southern Way, Folkestone	
~Project / Job Ref: 13574	
~Order No: 6140.13574	
Reporting Date: 08/09/2025	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
788137	WS1	None Supplied	0.40	12.4	Grey clay
788138	WS2	None Supplied	0.30	8.4	Brown sandy clay with stones
788139	WS3	None Supplied	0.50	9.5	Black loamy sand with stones and chalk
788140	WS4	None Supplied	0.40	3.6	Brown sandy clay with chalk
788141	WS5	None Supplied	0.40	4.7	Black loamy sand with stones and concrete
788142	WS6	None Supplied	0.20	6.5	White chalk
788143	WS7	None Supplied	0.40	8.5	Brown loamy sand with stones and concrete
788144	WS8	None Supplied	0.40	7	Black loamy sand with stones and concrete
788145	WS9	None Supplied	0.50	12.5	White chalk
788146	WS10	None Supplied	0.40	11	White chalk
788147	WS11	None Supplied	0.40	6.3	Brown sandy clay with stones
788148	WS12	None Supplied	0.50	5.6	Brown loamy sand with stones and concrete
788149	WAC Composite 1	WS1 - WS6	None Supplied	5.6	Black loamy sand with stones and concrete
788150	WAC Composite 2	WS7 - WS12	None Supplied	9.7	Brown sandy clay with stones and chalk

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

Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 25-07789

Ground & Environmental Services Ltd

~Site Reference: Land off Southern Way, Folkestone

~Project / Job Ref: 13574

~Order No: 6140.13574

Reporting Date: 08/09/2025

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 diphenylcarbazide 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 FOC 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

Water Analysis Certificate - Methodology & Miscellaneous Information	
DETS Report No: 25-07789	
Ground & Environmental Services Ltd	
~Site Reference: Land off Southern Way, Folkestone	
~Project / Job Ref: 13574	
~Order No: 6140.13574	
Reporting Date: 08/09/2025	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	F	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	UF	Biological Oxygen Demand (BOD)	Determination using BOD sensors measuring the change of pressure	E133
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	F	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	F	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	F	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	F	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E115
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichloromethane	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Acidification, followed by high-temperature oxidation and IR detection.	E110
Water	F	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 liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	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 liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Parameter	Matrix Type	Expanded Uncertainty Measurement	Unit
TOC	Soil	11	%
Loss on Ignition	Soil	24	%
BTEX	Soil	11	%
Sum of PCBs	Soil	30	%
Mineral Oil	Soil	9	%
Total PAH	Soil	17	%
pH	Soil	0.2	Units
Acid Neutralisation Capacity	Soil	18	%
Clay Content	Soil	15	%
Silt Content	Soil	14	%
Sand Content	Soil	13	%
Loss on Ignition	Soil	24	%
pH	Soil	0.2	Units
Carbonate	Soil	12	%
Total Nitrogen	Soil	12	%
Phosphorus (Extractable)	Soil	24	%
Potassium (Extractable)	Soil	20	%
Magnesium (Extractable)	Soil	26	%
Zinc	Soil	26	%
Copper	Soil	24	%
Nickel	Soil	29	%
Available Sodium	Soil	23	%
Available Calcium	Soil	23	%
Electrical Conductivity	Soil	10	%

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



APPENDIX 5
GUIDELINES ON CONTAMINANT LEVELS



Guidelines on Contamination Levels.

CLEA Soil Guideline values (SGV)

The UK's primary contaminated land guidance is contained within the Contaminated Land Exposure Assessment (CLEA) framework. Within this framework a number of Soil Guideline Values (SGVs) were published for key contaminants along with toxicological guideline values relating to intake thresholds. The soil guideline values provided by the CLEA model represented intervention values for end uses based upon potential human exposure and soil concentrations of a contaminant above these values might represent an unacceptable risk to the health of the site users.

The Environment Agency had an ongoing programme of SGV publication with associated toxicological information for key contaminants. All CLEA SGVs were withdrawn for use by the Environment Agency in 2008.

Part 2A of the Environmental Protection Act 1990 was intended to ensure that the risks from land contamination to human health, property and the environment are managed appropriately. Defra subsequently revised the statutory guidance for Part 2A to address concerns regarding its real-world application. The revised guidance presents a four category system for classifying land under Part 2A, ranging from Category 4, where the level of risk posed is acceptably low, to Category 1, where the level of risk is clearly unacceptable.

Contamination levels below the C4SL are acceptably low and levels above should be assessed in the context of background levels and site specific risk assessment.

The C4SLs are more pragmatic compared to the SGVs. The C4SLs consist of cautious estimates of contaminant concentrations in soil that are still considered to present an acceptable level of risk.

To date (2024), fifteen C4SLs have been derived and published. In the absence of a published C4SL for a specific contaminant, the Land Quality Management and Chartered Institute of Environmental Health (LQM/CIEH) have derived values using the same principles applied in the derivation of the C4SLs. These values are the Suitable for Use Levels (S4UL).

In the absence of any published C4SL or S4UL data, GES have used appropriate screening tools or Generic Assessment Criteria Levels as assessment criteria guidelines for those determinands not currently assigned screening levels using the CLEA model, v1.06.

DEFRA Category four screening level (C4SL) and LQM/CIEH Suitable 4 Use Levels

Screening values proposed in the DEFRA document SP1010-Development of Category 4 Screening Levels for Assessment of Land affected by Contamination Final Project Report (C4SL) are considered along with the suitable for use levels (S4USL) derived by the Chartered Institute of Environmental Health (CIEH) in partnership with the Land Quality Management Organization (LQM).

The screening levels are given for residential, commercial, allotment or public open space end uses below. C4SLs are used in preference to S4UL where they are available.

Guidelines on Contamination Levels.



PARAMETER	Residential		Commercial	Allotment	Public open Space		Sources
	With Plant uptake	Without Plant uptake			near homes	park land	
Inorganics - mg/kg unless stated							
Arsenic	37	40	640	49	79	170	C4SL
Beryllium	1.7	1.7	12	35	2.2	63	LQM/S4UL
Boron	290	11,000	240,000	45	21,000	46,000	
Cadmium	22	150	410	3.9	220	880	C4SL
Chromium III	910	910	8,600	18,000	1,500	33,000	LQM/S4UL
Chromium VI	21	21	49	170	21	250	C4SL
Copper	2,400	7,100	68,000	520	12,000	44,000	LQM/S4UL
Lead	200	310	2,300	80	630	1,300	C4SL
Inorganic mercury	200	300	5100	86	610	1300	
Elemental mercury	1.2	1.2	58	21	16	30	LQM/S4UL
Methylmercury	11	15	320	6	40	68	
Nickel	180	180	980	230	230	3,400	
Selenium	250	430	12,000	88	1,100	1,800	
Vanadium	410	1,200	9,000	91	2,000	5,000	
Zinc	3,700	40,000	730,000	620	81,000	170,000	

CLEA does not currently provide guidance for total Polycyclic Aromatic Hydrocarbons (PAHs). A standalone Defra C4SL for benzo(a)pyrene has been assigned and is shown below.

In addition, the Chartered Institute of Environmental Health (CIEH) in partnership with the Land Quality Management Organization (LQM) used CLEA software to derive **Suitable 4 Use Levels (S4ULs)** for the following PAH compounds:

The values in the table below which are C4SL derived are highlighted grey.

Guidelines on Contamination Levels.



PARAMETER	Residential						Commercial			Allotment			POS _{resi}	POS _{park}	Source
	With Plant uptake			Without Plant uptake			1	2.5	6	1	2.5	6			
SOM %	1	2.5	6	1	2.5	6	1	2.5	6	1	2.5	6	6% SOM		
Organics - mg/kg unless stated															
Acenaphthene	210	510	1100	3000	4700	6000	84000	97000	10000	34	85	200			LQM/S4USL
Acenaphthylene	170	420	920	2900	4600	6000	83000	97000	10000	28	69	160			
Anthracene	2400	5400	11000	31000	35000	37000	520000	540000	540000	380	950	2200			
Benzo(a)anthracene	7.2	11	13	11	14	15	170	170	180	2.9	6.5	13			
Benzo(a)pyrene C4SL			5			5.3			77			5.7	10	21	
Benzo(b)fluoranthene	2.6	3.3	3.7	3.9	4	4	44	44	45	0.99	2.1	3.9			
Benzo(g,h,i)perylene	320	340	350	360	360	360	3900	4000	4000	290	470	640			
Benzo(k)fluoranthene	77	93	100	110	110	110	1200	1200	1200	37	75	130			
Chrysene	15	22	27	30	31	32	350	350	350	4.1	9.4	19			
Dibenzo(a,h)anthracene	0.24	0.28	0.3	0.31	0.32	0.32	3.5	3.6	3.6	0.14	0.27	0.43			
Fluoranthene	280	560	890	1500	1600	1600	23000	23000	23000	52	130	290			
Fluorene	170	480	860	2800	3800	4500	63000	68000	71000	27	67	160			
Indeno(1,2,3-cd)pyrene	27	36	41	45	46	46	500	510	510	9.5	21	40			
Naphthalene C4SL	15	36	85	15	36	85	1600	3700	8400	65	130	200	17000	1900	
Phenanthrene	95	220	440	1300	1500	1500	22000	22000	23000	15	38	90			
Pyrene	620	1200	2000	3700	3800	3800	54000	54000	55000	110	270	620			
Phenol C4SL	280	550	1100	750	1300	2300	760	1500	3200	66	140	280	3200	3200	

Petroleum Hydrocarbons represent a complex situation being a mixture of a range of compounds, the relative concentrations of which may change over time.

As discussed above, Generic Assessment Criteria (GAC) for total petroleum hydrocarbons according to both their molecular weight and chemical structure and also for a range of soil organic matter (SOM) content values have been derived using CLEA software.

The **LQM CIEH S4ULs** are again presented according to their soil organic matter content and proposed end use of the land. The generic assessment criteria for a 1%, 2.5% and 6% SOM content are tabulated below and presented according to the proposed end use.

Guidelines on Contamination Levels.



SOM %	LQM CIEH Generic Assessment Criteria (mg/kg dry weight soil)													
	Residential						Allotment Land Use			Commercial Land Use				
	With Plant Uptake			Without Plant Uptake			1	2.5	6	1	2.5	6		
Aliphatic														
EC 5 – 6	42	78	160	42	78	160	730	1700	3900	3200	5900	12000		
EC > 6 – 8	100	230	530	100	230	530	2300	5600	13000	7800	17000	40000		
EC > 8 – 10	27	65	150	27	65	150	320	770	1700	2000	4800	11000		
EC > 10 – 12	130	330	760	130	330	760	2200	4400	7300	9700	23000	47000		
EC > 12 – 16	1100	2400	4300	1100	2400	4300	11000	13000	13000	59000	82000	90000		
EC > 16 – 35	6500 0	9200 0	110000	65000	9200 0	1100 00	260000	270000	270000	160000 0	170000 0	180000 0		
EC > 35 – 44	6500 0	9200 0	110000	65000	9200 0	1100 00	260000	270000	270000	160000 0	170000 0	180000 0		
Aromatic														
EC 5 – 7 (benzene)	70	140	300	370	690	1400	13	27	57	26000	46000	86000		
EC > 7 – 8 (toluene)	130	290	660	860	1800	3900	22	51	120	56000	110000	180000		
EC > 8 – 10	34	83	190	4	110	270	8.6	21	51	3500	8100	17000		
EC > 10 – 12	74	180	380	250	590	1200	13	31	74	16000	28000	34000		
EC > 12 – 16	140	330	660	1800	2300	2500	23	57	130	36000	37000	38000		
EC > 16 – 21	260	540	930	1900	1900	1900	46	110	260	28000	28000	28000		
EC > 21 – 35	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000		
EC > 35 – 44	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000		
Ali & Aro EC>44-70	1600	1800	1900	1900	1900	1900	1200	2100	3000	28000	28000	28000		
Benzene C4SL			0.87			3.3			0.18			98	POS _{resi} 140	POS _{park} 230
													6% SOM	
Toluene	130	290	660	880	1900	3900	22	51	120	56000	110000	180000		
Ethylbenzene	47	110	260	83	190	440	16	39	91	5700	13000	27000		
o-xylene	60	140	330	88	210	480	28	67	160	6600	15000	33000		
m-xylene	59	140	320	82	190	450	31	74	170	6200	14000	31000		
p-xylene	56	130	310	79	180	430	29	69	160	5900	14000	30000		

Inert Material

The limit values for inert waste are given in the EC Landfill Directive 1999/31/EC as applied under the Environmental Permitting (England and Wales) (Amendment) (EU Exit) Regulations 2019 (S/2019/39) and as defined by the council decision establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC(2003/33/EC).

The regulations and associated guidance provide waste acceptance criteria, which set the limits of contaminants permitted in various waste categories going to landfill.

Inert waste is defined as waste which contains insignificant potential for pollution and does not endanger the quality of surface water or groundwater. The Landfill Directive states that inert waste will not adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health.



Guidelines on Contamination Levels.

For risk assessment purposes we would consider that any materials (soils) containing concentrations of potential contaminants that would result in them being classified as inert would be considered as uncontaminated and therefore representing a low risk to human health.

Similarly, such material would not be considered to represent a significant risk to water resources.

However, with regard to Planning and proposed re-development, limit values for inert waste would not be considered appropriate to determine the risks posed to people where any open contaminant to receptor pathway remained intact.

Selected inert waste acceptance criteria as given in Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills for the Landfill Directive are given below.

Landfill acceptance criteria for inert waste (mg/kg)	
Total organic carbon (TOC)	30,000
Mineral oils (C10 – C40)	500
PCBs	1
PAH	100

Risks to Plants

The CLEA framework does not provide a method for the assessment of phytotoxic risks to plants. However maximum permissible concentrations have been published in the Sludge (Use in Agriculture) Regulations 1989 (SI 1989, No. 1263). This legislation enforces the provisions of the EC Directive 86/278/EEC for potentially toxic elements (PTEs) on soils for agricultural use where sewage sludge has been applied (see table below). These limits relate to the potential risk to plants and not human health for which CLEA is the overriding risk assessment model. The limit value from the British topsoil and subsoil standards may also apply.

Maximum permissible concentration in agricultural soils following sewage sludge application (mg/kg).				
	pH 5.0<5.5	pH 5.5<6.0	pH 6.0-7.0	pH >7.0
Zinc	200	250	300	450
Copper	80	100	135	200
Nickel	50	60	75	110

Risks to buried concrete

The potential risks to buried concrete can be assessed by reference to the BRE Special Digest 1 (SD1) entitled 'Concrete in Aggressive Ground'. This document provides a methodology for the specification of concrete based on the ground conditions encountered and is based upon chemical analysis and associated factors (e.g. groundwater). The guidance provides a Design Sulphate Class (DS) based upon the ground conditions and it is considered that a low concentration of sulphate and pH (i.e. DS – 1 and DS – 2) is considered to represent a low risk to buildings.



Guidelines on Contamination Levels.

Risks to buried services

In addition, where water is supplied in plastic pipes which could come into contact with contaminated ground then this can lead to premature failures, resulting in leakage and loss of water quality. Risks to water supply pipes are assessed using guidance published by the UK Water Industry Research (UKWIR) entitled 'Guidance for the Selection of Water Pipes to be used in Brownfield Sites' (Report Ref. No. 10/WM/03/21). This is known as the UKWIR guidance.

Previous guidance from WRAS has been withdrawn but may still be in use by certain water supply companies. In general water companies have adopted a common set of guidelines as given in the **Contaminated Land Assessment Guidance from January 2014**. Additional threshold values for determining pipe material have also been published by certain water supply companies. If these threshold values are exceeded then consideration should be given to the selection of pipe material or to the use of barrier pipes. The UKWIR threshold values, together with those of certain water supply companies are presented in the table below for a range of potential hazards.

Substance ⁽¹⁾	Water UK Guidance	Thames Water
Total VOC	0.5	-
Total BTEX & MTBE	0.1	0.1 or either
Total SVOC	2	-
EC5-EC10 aliphatic and aromatic hydrocarbons	2	-
EC5-EC12 aliphatic hydrocarbons		0.5
EC5-EC12 aromatic hydrocarbons		0.5
EC10-EC16 aliphatic and aromatic hydrocarbons	10	-
EC12-EC21 aliphatic hydrocarbons		10
EC12-EC21 aromatic hydrocarbons		10
EC16-EC40 aliphatic and aromatic hydrocarbons	500	-
EC21-EC35 aliphatic hydrocarbons		500
EC21-EC35 aromatic hydrocarbons		500
Phenols	2	5*
Cresols and chlorinated phenols	2	2
Naphthalene	-	5
Ethers	0.5	-
Nitrobenzene	0.5	-
Ketones	0.5	-
Aldehydes	0.5	-
Amines	0	-
Corrosives pH and EC	#	
	##	

All units mg kg⁻¹ in soil;

pH <7 for wrapped steel, pH <5 wrapped ductile iron and copper and ##EC >400µS/cm;

*Phenol limit at 2mg/kg in presence of BTEX.



APPENDIX 6

PAH SOURCE INDICATOR RATIOS



Potential Sources of PAH Contamination Based on PAH Ratios

