Phase 2 Site Investigation

Gravelly Bottom Road - Kingswood

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Non-Technical Summary

What is Proposed?	Redevelopment of the site comprising a replacement low rise industrial building and external hardstanding for parking spaces. A strip of soft landscaping is proposed along the south boundary of the site, where native trees will be planted to provide screening.
What is the Problem?	No viable sources of contamination have been identified which would pose an unacceptable risk to future site users or controlled waters in the context of the proposed redevelopment.
What is the Result?	No formal remedial measures are considered necessary to support the proposed redevelopment, however the following recommendations should be considered: ► At TP2 the first stratum was Made Ground which comprised black gravelly SAND containing tarmac, clinker, burnt wood and ash should be removed. This stratum was recorded between surface and 0.10m bgl. ► A layer of clean certified topsoil, 150mm in thickness, should be placed across the proposed area of soft landscaping on the southern boundary in order to provide a suitable growth medium of the tree screening.
What are the Next Steps?	This report should be submitted to the local planning authority to discharge planning condition 4.1 on permission 22/505903/FULL.

Report Record

Project Name	Gravelly Bottom Road - Kingswood
Client	Individual
Report Type	Phase 2 Site Investigation
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Report Revisions

Revision Ref	Date	Author	Details

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1.0 Introduction

1.1 This report presents the findings of a Phase 2 Site Investigation (Environmental) – an intrusive contamination assessment that has been prepared in line with best practice guidance and planning policy.

What is a Phase 2 Site Investigation?

1.2 Phase 2 Site Investigation is the second stage of a phased contaminated land assessment that is often required to discharge planning conditions or remove objections once planning permission has been granted. A Phase 2 is usually required following a Phase 1 Desk Study, where potential sources of contamination have been identified, and the risks from which require further understanding.

1.3 The purpose of a Phase 2 Site Investigation is to physically inspect the condition of the soil, groundwater etc that may have been impacted by the sources of contamination identified in the Phase 1 Desk Study. The Phase 2 Site Investigation is site specific with the methods of investigation chosen being dependent on a number of factors, such as access, operational constraints, geology, potential contaminant sources and the receptors to be targeted.

1.4 Recommendations may include the preparation of a Remediation Strategy to detail how any identified risks can be mitigated/remediated, or possibly further investigation. If no unacceptable risks are identified, then typically no further environmental assessment is required other than a Watching Brief during the construction phase. Find out more about Phase 2 Site Investigations here.

The Subject Site

Table 1 Site Details	
Address	The Homestead, Gravelly Bottom Road, in Kingswood, Kent, ME17 3NU
Eastings, Northings	583025, 150906
Area	0.3 ha

1.5 The site, irregular in plan, currently comprises an access road leading to a yard and a fire damaged structure, which was previously used as an industrial complex. There is another

industrial building at the address that lies just north of the site boundary, as can be seen in Figure 1, which is not part of the current assessment. The site is located within a rural agricultural area with fields adjacent, and a number of residential dwellings to the south.

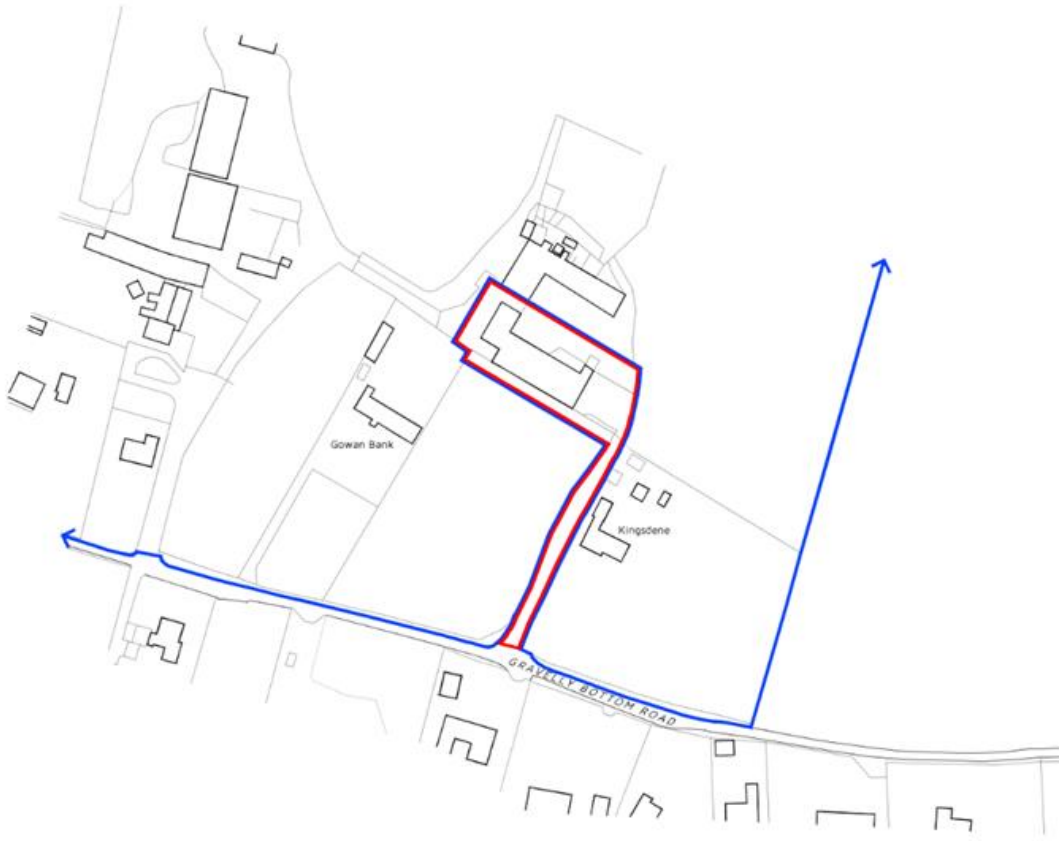


Figure 1 Site Location Plan

The Proposed Development

1.6 It is understood that the site has planning permission from Maidstone Borough Council, for redevelopment to provide a commercial/industrial scheme, under application reference 22/505903/FULL. This report should be submitted to the Council in order to discharge planning condition 4.

1.7 Figure 2 displays the proposed site plan, comprising a replacement low rise industrial building and external hardstanding for parking spaces. A strip of soft landscaping is proposed along the south boundary of the site, where native trees will be planted to provide

screening. There are no basements, undercroft car parking or other underground structures anticipated with below ground features limited to foundations and buried services.

1.8 Enabling works to permit the development are understood to involve the full clearance of the site. It is understood that site levels will remain relatively similar to that present.

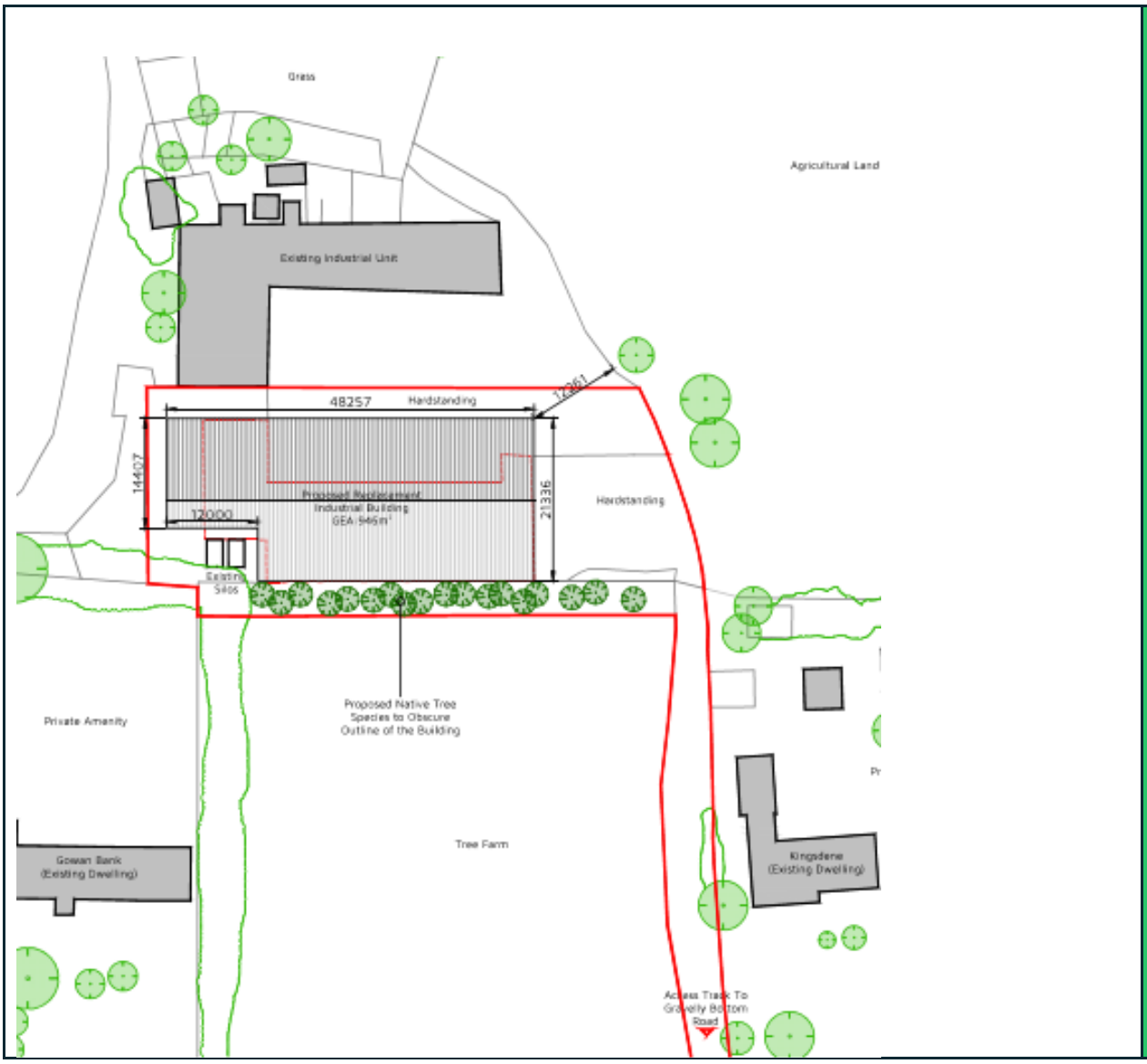


Figure 2 Proposed Development Plan

The Stakes & Objectives

1.9 As noted above, this Phase 2 Site Investigation forms the second stage of an iterative contaminated land assessment, to further investigate the potential sources of contamination

and unacceptable risks identified during a Phase 1 Desk Study[1]. Key findings and stakes relating to this investigation are summarised below.

Current and Former Site Uses: From c. 1946 the site had an agricultural purpose with the erection of livestock pens around 1955. In 1967 it was labelled a piggery with a residential dwelling to the southeast of the site. Succeeding c.1987 the site was no longer used for agriculture, instead being labelled works on maps, that went on to comprise a furniture and tarpaulin manufacturer. In 2019 a fire occurred on site leaving a fire damaged and therefore disused structure. One record of an onsite non-coal mining cavity was found for mining of sand.

Geology, Hydrogeology and Hydrology: A layer of Made Ground is expected over superficial Head deposits (of clay, silt, sand and gravel). This type of superficial deposit is classified as a secondary undifferentiated aquifer, due to its variable rock characteristics and therefore fluctuational permeability. The bedrock is of the Hythe formation, which is a Principal Aquifer.

Potential Sources of Contamination: Major potential sources of contamination relate to the fire damage and the suppression of the fire, in addition to the previous light industrial activities onsite. Toxins and particulates are emitted during combustion from burning materials, there is a risk of these contaminants entering soils and/or groundwater and migrating offsite. General waste was scattered across the yard including plastics, fabrics, glass, metals, building materials and electrical appliances. The waste itself is a contamination source but also possible leakage from the waste into the ground.

Initial Risk Ratings: Low/Moderate risk was assessed to current and future site users as well as off-site users and groundwater and surface water. Cracked hardstanding covered most of the site which reduces the risk of an effective pollutant pathway into the soils and groundwater. There is however a very high risk of asbestos inhalation. Overall risk of contamination at the site is moderate.

[1] 9701 Phase 1 Preliminary Risk Assessment Rev0 (Phlorum, 2020)

1.10 Full reference should be made to the desk study to understand the preliminary conceptual model and basis of this investigation. The methodology adopted in this site investigation is based on the source-pathway-receptor model as set out in the Land contamination risk management guidance (LCRM, October 2020).

1.11 The main objective of this investigation is to reduce uncertainty and validate the findings of the Phase 1, associated with the preliminary conceptual site model and risk assessment. This investigation aims to determine the general presence or absence of contamination within the context of an Exploratory Investigation. It is noted that an Exploratory Investigation usually requires a lower density sample spacing than a Main Investigation, and that further works may be required in the future. Noting the likely acceptable levels of uncertainty, access restrictions, project constraints etc at this stage of the project, an Exploratory Investigation, as defined in BS 10175, has been adopted and is considered appropriate to assess the general suitability of the site for the proposed development.

Report Structure, Limitations & Changes

1.12 The investigation methodology is included in Chapter 2, with details on the ground conditions observed in Chapter 3. A summary of the generic risk assessments undertaken is presented in Chapter 4 and a wider discussion on the preliminary findings in the context of the CSM is provided in Chapter 5. Report conclusions and recommendations are set out in Chapter 6. Advisory items are detailed in Chapter 7.

1.13 This assessment has been undertaken in accordance with our Terms & Conditions. Full details on limitations and reliance are provided in those Terms. Third party information which has been reviewed and used to inform the assessments presented herein, including public records held by various regulatory authorities and environmental database data has been assumed to be true and accurate.

1.14 This assessment has been carried out to determine the potential risks posed to future end users, along with other key receptors, based on the current development. Should revisions in the development proposals result in a change any assessment parameters detailed in this report, a re-assessment of the risk should be carried out.

2.0 Site Investigation Methodology

2.1 The intrusive site investigation works were undertaken on 12/07/2023 under the direct co-ordination of a suitably trained and qualified consultant employed by Lustre. The intrusive works were carried out with due regard to existing standards and good practice guidelines including *BS10175: 2011+ A2:2017*[2], *BS5930: 2015*[3] and guidance produced by the *AGS*[4].

Enabling Works

2.2 Prior to the site works commencing the client cleared the fire debris from the location of each trial pit in addition to breaking out the hardstanding and undertaking shallow trial pits (approx. 0.60m bgl) with a wheeled back-hoe excavator.

2.3 Each of the locations were extended laterally and vertically to enable representative soil samples to be taken of the underlying soils.

Site Investigation Rationale

2.4 Exploratory locations advanced in this investigation are summarised below comments on rationale, termination depth and monitoring installations.

Table 2 Exploratory Position Details

Hole ID	Base Depth (m bgl)	Objective	Monitoring Well
TP1	0.8	General Coverage – inside fire damaged building footprint	No
TP2	0.8	General Coverage	No
TP3	0.9	General Coverage	No
TP4	0.9	General Coverage – inside fire damaged building footprint	No
TP5	1.0	General Coverage – inside fire damaged building footprint	No
TP6	0.9	General Coverage	No

[2] British Standard – Code of Practice for Investigation of potentially contaminated sites. BS 10175: 2011 + A2:2017.
[3] British Standard – Code of Practice for Site Investigation. BS 5930: 2015.
[4] Association of Geotechnical & Geoenvironmental Specialists, AGS Guide to Environmental Sampling, 2010.

2.5 Exploratory holes were located to obtain the required information to meet the project objectives, whilst avoiding services, access and egress routes. Drawing 4728-001 shows the positions of all exploratory locations.

Trial Pits

2.6 A total of six trial pits were excavated using a wheeled back-hoe excavator. The pits were extended through the surface soil and proved natural strata where possible, with base depths between 0.8 m bgl and 1.0 m bgl. Trial pits were positioned to provide good coverage across the site, including within the fire damaged structure (TP1, TP4 and TP5).

2.7 Upon completion the excavations were backfilled with arisings and soils compacted with the excavator bucket.

In-Situ Field Tests

2.8 At appropriate depths, soil samples were deposited in sealable plastic bags to allow on-site headspace analysis. Samples were left for at least 20 minutes before analysis. A photoionisation detector (PID) with 10.6eV lamp was used to measure the concentration of volatile organic compounds (VOC) within the headspace. Soil samples were agitated during analysis to encourage the release of any volatiles.

Chemical Analysis (Environmental)

2.9 A total of 12 soil samples were scheduled for chemical testing. Samples were analysed for a range of determinands, which considers the potential contaminants associated with the current/historical site uses, as follows:

- Metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc;
- Inorganics: cyanide, boron, water soluble sulphate, selenium, organic carbon and carbonate
- pH;
- Total phenols (monohydric);
- Speciated Polycyclic Aromatic Hydrocarbons (PAHs, total and speciated EPA 16);
- Speciated Total Petroleum Hydrocarbons (TPH CWG);
- BTEX;

- Asbestos screen;

NB: Not all samples were analysed for the full suite of determinands listed above.

2.10 The suspected use of fire suppression chemicals previously onsite may have caused residual contamination so additional testing was scheduled as follows on three samples:

- Potassium,
- Ammoniacal nitrogen,
- PFOS (Perfluoroctane Sulphate)
- PFOA (Perfluorooctanonic Acid)
- PFAs (Per-polyfluoroalyl Substances) and
- Phosphate.

2.11 For PFOS, PFOA, PFAs and phosphate, the three soil samples underwent leachate preparation, with the subsequent testing undertaken on the leachate sample.

2.12 Five further soil samples were also scheduled for leachate preparation, with the subsequent testing on the leachate sample comprising:

- Metals and inorganics: arsenic, boron, cadmium, chromium, copper, cyanide, lead, mercury, nickel, selenium, zinc;
- pH;
- Total phenols (monohydric);
- Speciated Polycyclic Aromatic Hydrocarbons (PAHs, total and speciated EPA 16);
- Total Petroleum Hydrocarbons (TPH CWG);
- Sulphate;
- Total Organic Carbon.
- Total hardness.

2.13 The environmental analysis was undertaken by i2 Analytical Limited at their UKAS accredited laboratory. The results of the chemical analysis are reported in Chapter 4 and copies of the laboratory test certificates are included in Appendix C

2.14 Generally, where PID results indicated the potential of presence volatile contaminants or visual / olfactory evidence of contamination was noted, appropriate testing was scheduled in preference of those samples.

3.0 Ground Conditions

3.1 This chapter collates all the factual information from the site investigation, including field observations and in-situ testing, to present a summary of the ground conditions encountered during the intrusive works. Exploratory holes logs are presented in Appendix B.

3.2 A brief interpretation of any visual /olfactory contamination is provided at the end of the chapter, in the context of the potential sources of contamination. Field observations on the physical composition of the shallow soils is also considered in determining the suitability of the soils for retention in the proposed development (presence of sharps or deleterious materials).

Table 3 Summary Ground Model

Strata	Min Depth (m bgl)	Max Depth (m bgl)	Min Thickness (m)	Max Thickness (m)	Exploratory Holes
Concrete	0.0	0.15	0.08	0.15	All but TP2
Made Ground	0.0	0.6	0.2	0.52	All
Head	0.3	1.0	0.25	0.7	All

Concrete

3.1 The average thickness of the Concrete was calculated at 0.11m, with a minimum recorded thickness of 0.1m and a maximum recorded thickness of 0.2m. Concrete was present at the surface of all the trial pits except TP2.

Made Ground

3.2 Made Ground was recorded in all exploratory holes with a minimum depth of 0.0m bgl and a maximum base depth of 0.6m bgl. The average thickness of the Made Ground was calculated to be 0.28m with a minimum thickness of 0.2m and a maximum thickness of 0.52m.

Spatial Distribution and Extent

3.3 Multiple types of Made Ground were identified at the site:

- The Made Ground in TP1 consisted of a soft to firm dark brown slightly sandy slightly gravelly CLAY. Both sands and gravels were fine to coarse with gravels of concrete, brick, tile, flint and clinker. Occasional roots and rootlets present.
- At TP2 the first stratum was Made Ground composed of black gravelly SAND containing tarmac, clinker, burnt wood and the sand was predominantly of ash. Roots and rootlets were frequently observed.
- Underlying the Made Ground at TP2 and the concrete at TP4 and TP6 there was Made Ground composed of grey silty gravelly fine to coarse SAND. The gravels typically comprised concrete, flint, brick, tile, plastic, metal, wood and clinker, and rootlets were frequently observed.
- Beneath the concrete at TP3 a greyish brown slightly sandy silty GRAVEL was identified. It was similar to the grey silty gravelly SAND found in other pits but due to its medium cobble content was categorised as a gravel. Gravels were comprised of flint, concrete, brick and clinker.
- In TP5 a layer of light yellowish brown slightly sandy slightly gravelly SILT was found. Gravels were typically fine to course of brick, flint, clinker and concrete. A similar stratum was identified in TP2 and TP3 but due to the gravels being of natural material as opposed to anthropogenic, this was classed as Head and not Made Ground.

Made Ground of gravelly ashy sand in TP2

Concrete over gravelly Made Ground and clayey Head in TP5

Anthropogenic Components & Evidence of Contamination

3.4 In terms of composition, man-made components within the Made Ground generally included gravels of tarmac, clinker, burnt wood, concrete, brick, tile, plastic, wood and metal. In the surface Made Ground at TP2 the sand was predominantly of ash.

3.5 With the exception of the ashy Made Ground at TP2, no visual or olfactory evidence of hydrocarbon or solvent-type contamination was noted within the Made Ground or the natural materials.

3.6 In-situ headspace readings within the soils did not indicate the presence of volatile compounds with concentrations not exceeding 0.1ppm.

3.7 Based on observations onsite, fragments of suspected asbestos containing material (ACM) were recorded at surface level across the site, in the form of cement-bound corrugated sheeting associated with the fire-damaged structure. It should be noted that ACM was not recorded within excavated soils.

Head

3.8 Head was recorded in all exploratory holes with a top depth of 0.3m bgl to a maximum base depth of 1m bgl. The average thickness of the Head was calculated at 0.52m, with a minimum recorded thickness of 0.2m and a maximum recorded thickness of 0.7m.

3.9 Two types of Head were found on site:

- A yellowish-brown sandy SILT with occasional gravels of flint and ironstone was found in TP2 and TP3.
- In every trial pit soft to firm orangish brown mottled red CLAY was found, occasionally being slightly sandy or silty and containing roots/rootlets

3.10 The deepest trial pit was 1m bgl which allowed for access to natural head materials, however, was not deep enough to encounter the bedrock formation or groundwater.

3.11 In-situ headspace readings within the Head materials did not indicate the presence of volatile compounds with a maximum concentration not exceeding 0.1 ppm.

Head and Made Ground arisings from TP4

Yellowish-brown sandy silt in TP3

Summary of Land Quality Field Observations

Table 4 Field Observations

	Consideration Needed?
Evidence of Contamination	
Visual evidence of contamination has been identified during the site investigation in the form of ashy soils and potential ACM. The Made Ground at TP2 (0 to 0.1m bgl) was predominantly of ash, likely due to the fire that occurred in 2019. The fire damaged structure likely contains asbestos fragments and other potential ACMs were observed at surface level across the site. In-situ headspace testing and olfactory observations did not indicate the presence of any volatile-type contamination. The selection of samples for chemical testing and determinants analysed for has been based on the above field observations in the context of the conceptual site model and proposed development layout. These results are discussed in Chapter 4.	Yes
Gas Generation Potential	
Field observations during the investigation did not identify any significant amounts of potential gas-generating materials (such as thick ashy soils, decayed organic matter, deleterious/putrescible wastes).	No
Physical Suitability	
Based on the physical composition of the shallow soils, which were noted to contain tarmac, clinker, burnt wood, concrete, brick, tile, plastic, wood and metal, the shallow Made Ground may not be considered suitable for use as topsoil in areas of proposed soft landscaping. Topsoils generally need to be free from significant sharps, excessive stones and waste/ deleterious materials.	Yes
Drainage Potential (Shallow Soils)	

Table 4 Field Observations	
	Consideration Needed?
Evidence of Contamination	
Given the expected low permeability of the clay-rich shallow soils, these soils may not sufficiently drain when converted to soft landscaping, which may lead to waterlogging	Yes

4.0 Quantitative Risk Assessment

4.1 Factual information from the site investigation and subsequent analytical data has been subjected to several semi-quantitative risk assessments. The results of these assessments are presented in Appendix D and summarised in this Chapter. This stage of risk assessment considers all laboratory data against the respective risk criteria, regardless of factors such as location, depth and proposed layout/exposure pathways; Chapter 5 considers any identified risks in the context of the proposed site layout. The assessments undertaken include:

- Human health risk assessment (soils);
- Water pipeline suitability test;
- Phytotoxicity assessment;
- Soil Aggressivity (buried concrete);
- Groundwater quality risk assessment; and

Human Health Risk Assessment (Soils)

4.2 The Environment Agency 'Model Procedures for the Management of Land Contamination, CLR 11' report provides a risk management methodology for identifying hazards and assessing risk associated with land affected by contamination. CLR 11 adopts a tiered approach to determining risk, with the first tier involving the evaluation of pollutant linkages using assessment criteria / screening levels for contamination – this is known as a Generic Quantitative Risk Assessment. We have adopted LQM/CIEH Suitable 4 Use Levels (S4ULs) where available. Lead has been assessed using the Category 4 Screening Level (C4SL).

4.3 SGVs, GACs and S4ULs for a commercial land use scenario have been adopted with a soil organic matter content parameter of 1% for both the Made Ground and natural soils, based on site-specific organic matter content data. The commercial land use scenario is consistent with the proposed development plans set out in Chapter 1. Chemical analysis data has been compared to these risk thresholds, as presented in the Environmental Assessment Appendix; this screening process forms the generic quantitative risk assessment (GQRA).

Human Health GQRA – Made Ground

4.4 Samples recovered from the Made Ground underwent chemical analysis for a range of general determinands, including asbestos (seven samples), inorganics and metals (seven samples), PAH (seven samples) and TPH (seven samples).

4.5 Asbestos was analysed for in seven samples and was not detected.

4.6 All determinands were found to be either below the limit of detection or below their respective screening criteria: all metals and inorganics, all 16 PAH compounds, all 14 TPH fractions, BTEX, phenols.

4.7 In summary, none of the determinands analysed for in the Made Ground exceeded the risk thresholds and the chemical quality of the shallow soils is not considered to present a risk to human health based on a commercial end use.

Human Health GQRA – Natural Soils

4.8 Samples recovered from the natural ground underwent chemical analysis for a range of general determinands, including asbestos (five samples), inorganics and metals (five samples), PAH (five samples), TPH (five samples).

4.9 All determinands were found to be either below the limit of detection or below their respective screening criteria: all metals and inorganics, all 16 PAH compounds, all 14 TPH fractions, BTEX, phenols.

4.10 In summary, none of the determinands analysed for in the natural ground exceeded the risk thresholds and the chemical quality of the natural ground is not considered to present a risk to human health, based on a commercial end use.

Fire Suppression Chemicals within the Made Ground

4.11 Due to the presence of a fire damaged structure onsite and the use of fire suppression chemicals to extinguish the fire, three samples from the Made Ground were analysed for Potassium, Ammoniacal nitrogen, PFOS (Perfluoroctane Sulphate), PFOA (Perfluorooctanonic Acid), PFAs suite (Per-polyfluoroalyl Substances) and Phosphate. These

samples were taken from the shallow Made Ground within TP2, TP4 and TP5 which were located within the former building footprint or where evidence of fire damage was noted.

4.12 Typical chemicals used in fire suppression include monoammonium phosphate, sodium bicarbonate, potassium bicarbonate and potassium chloride. In addition, PFOS, PFOA and PFAs are also found in fire extinguishing foam, specifically aqueous film forming foams, which are used to extinguish flammable liquid based fires. The concern with PFOS, PFOA and PFAs is that they break down very slowly and can accumulate inside people and in the environment over time. Therefore, the chemicals analysed for the determinands as listed above aimed to assess the potential presence of fire suppression chemicals within the shallow soils onsite.

4.13 Within TP2, TP4 and TP5, analysis of the leachate samples for PFOA, PFOS and PFAs suite recorded concentrations of all determinands below laboratory detection limits. Phosphate was also tested for on the prepared leachate sample, with concentrations ranging from 33µg/l in TP4 to 900µg/l in TP2. It is noted that TP2 recorded a high percentage of ashy / fire impacted soils and that therefore this elevated concentration of phosphate is considered to be an indication of the presence of ammonium phosphate within the shallow soils, which is a fire extinguishing agent.

4.14 Water soluble phosphate as P and as PO4 were also tested for. In TP4 and TP5 the concentrations did not exceed laboratory detection limits, however in TP2 concentrations of 3.6mg/kg and 3.3mg/kg respectively were recorded, which is likely another indication that the shallow soils at TP2 have been impacted by the use of fire suppression chemicals.

4.15 Ammoniacal nitrogen as N and as NH4 were tested for on the three samples, as another indicator for the presence of the fire suppression chemical monoammonium phosphate, however concentrations recorded did not exceed laboratory detection limits.

4.16 In order to provide an indication of the presence of potassium bicarbonate and potassium chloride, potassium was also tested for, with concentrations ranging from 1700mg/kg in TP2 to 3300mg/kg in TP4. This indicate that the shallow soils across the building footprint may have been locally impacted by the use of fire suppression chemicals.

4.17 With regards to risks to human health and controlled waters, risk threshold values are not readily available in the UK to help quantify the potential level of risk from the recorded concentrations. The absence of PFOA, PFOS and PFAs chemicals indicates that the risks posed to human health and controlled waters from these chemicals is low. However, elevated concentrations of phosphate and potassium, particularly within the shallow soils at TP2, indicate that there is the potential for contamination to be present as a result of the use of fire suppression chemicals and that this risk requires further assessment within the context of the site conceptual model.

Water Pipeline Suitability Test

4.18 The development is likely to require the installation of new potable water pipes. UK Water Industry Research (UKWIR) guidance[5] sets chemical concentration thresholds that are used to specify a pipe design that is considered safe. Water pipes will likely be placed at a minimum depth of 750mm as normally required by UK water authorities.

4.19 The available testing results indicate that Made Ground concentrations pose a risk to potable water pipes. The Made Ground data failed the tests relating to PE (polyethene) pipes for Mineral Oils (C11 to C20).

4.20 However, considering the maximum depth of Made Ground was recorded as 0.6m bgl and potable water pipes are typically placed at a depth of 0.75m bgl as required by UK water authorities, potable water pipes will be lain in natural soils on site, within which Mineral Oils (C11 to C20) were identified as not exceeding the limit of detection. Therefore, a low risk to potable water pipes has been determined and PE pipes are considered suitable for use.

Phytotoxicity Assessment

4.21 The recorded concentrations of copper, nickel and zinc have been compared against the BS3882: 2015[6] thresholds for phytotoxic contaminants in soils to determine if a potential risk to healthy plant growth exists.

[5] UK Water Industry Research (UKWIR). Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites. Ref. 10/WM/03/21. 2010
[6] British Standard BS 3882:2015 (Specification for topsoil and requirements for use)

4.22 As shown in the Environmental Assessment Appendix, from the Made Ground, the following were noted above risk criteria considered protective of healthy plant growth - zinc was recorded above criteria (300mg/kg) in three samples:

- TP2 (0.10-0.20 m bgl) at 320mg/kg,
- TP2 (0.30-0.40 m bgl) at 320mg/kg,
- TP1 (0.20-0.30 m bgl) at 390mg/kg.

4.23 The presence of elevated phytotoxic metals in the Made Ground may therefore impact healthy plant growth.

4.24 For the natural soils, concentrations of phytotoxic metals were below the risk criteria.

Soil Aggressivity (Buried Concrete)

4.25 The analytical data for soil pH and water-soluble sulphate is summarised in the Environmental Assessment Appendix, along with the corresponding BRE classification[7]. The 'brownfield' scenario was applied to the results from the Made Ground and the 'natural' scenario to results from the natural ground. A static groundwater scenario was selected for the buried concrete assessment for both the Made Ground and natural soils based on groundwater conditions observed on site.

4.26 From the Made Ground, seven samples were tested along with five samples from the natural soils. The characteristic values for the Made Ground for pH and water-soluble sulphate were determined as 6.6 and 1.6g/l respectively, giving a Design Sulphate (DS) classification of DS1 and an associated Aggressive Chemical Environment for Concrete (ACEC) classification of AC-1s. The characteristic values for the natural soils for pH and water-soluble sulphate were determined as 4.9 and 0.4g/l respectively, giving a DS classification of DS1 and an associated ACEC classification of AC-1s.

4.27 The potential for oxidisable sulphide has not been considered in this assessment as either pyrite is unlikely to be present in significant amounts, or the concrete is unlikely to be exposed to disturbed ground which might be vulnerable to oxidation.

[7]BRE Guidance Special Digest 1. Concrete in Aggressive Ground. 3rd Edition, 2005.

Groundwater Quality Risk Assessment

4.28 Soil contamination has the potential to leach into underlying shallow groundwater. On-site groundwater quality can also be adversely impacted by off-site groundwater contamination migrating down hydraulic gradient onto site. Although groundwater was not encountered in the site investigation, the risk of contaminants in the soils must be considered due to the high sensitivity of the groundwater body within the Hythe Formation, which is classified as a Principal Aquifer and directly underlies the superficial Head deposits across the site.

4.29 In order to assess the risks to groundwater within the Hythe Formation, five samples from the Made Ground were submitted for leachate analysis for a range of general determinands, including inorganics and metals, PAHs and TPH CWG. The purpose of the leachate analysis was to determine if any of the contaminants within the Made Ground were readily leachable and could therefore be mobilised and enter either localised shallow groundwater within the Head deposits or the deeper groundwater body within the Hythe Formation. The results of the leachate analysis have been compared to the UK DWS and the WHO DWS based on the classification of the Hythe Formation as a Principal Aquifer.

4.30 All determinands were found to be either below the limit of detection or below their respective UK DWS and WHO DWS. Therefore, it is considered unlikely that the concentrations of contaminants within the Made Ground pose an unacceptable risk to groundwater quality within the Hythe Formation. Furthermore, the presence of low permeability Head Deposits directly underlying the Made Ground, will also act as barrier to the potential vertical migration of any mobilised contamination, which will further reduce the risk posed to groundwater within the Hythe Formation.

Summary of Quantitative Risk Assessments

Table 5 Assessment Summary

	Possible Issue Identified?
Human Health Risk Assessment (soils)	No
Water Pipeline Suitability Test	No
Phytotoxicity Assessment	Yes
Soil Aggressivity (buried concrete)	No

Table 5 Assessment Summary	
Groundwater Quality Assessment	No
Fire Suppression Chemicals (soils and groundwater)	Yes

5.0 Phase 2 Conceptual Model & Risk Assessment

Introduction

5.1 A preliminary conceptual site model was included within the previous Desk Study report[1], which identified potential sources of contamination attributable to the historical and current site uses. This Phase 2 Site Investigation was subsequently designed to further assess the identified potential sources of contamination whilst also gathering information on the environmental setting and receptors (e.g. ground conditions, groundwater etc).

5.2 This chapter considers the results from the quantitative risk assessments in the context of the wider conceptual site model, particularly the proposed development layout, field observations and ground conditions recorded during the investigation, and any other relevant information such as groundwater flow etc, anticipated enabling work etc. Considering the quantitative risk assessment results alongside these factors provides an updated qualitative risk rating and represents a secondary more site-specific tier of assessment.

5.3 Where potential issues have been identified following the quantitative risk assessment in Chapter 4, these have been considered in this next phase of assessment, supplemented with the field observations set out in Chapter 3. Quantitative assessments which did not identify any issues have not been considered further.

Acceptably Low Risks – Final Development Context

5.4 Considering the risk assessment results in the context of the proposed site use and configuration of specific areas of active exposure pathways (such as areas of soft landscaping) and the spatial distribution of contamination, or the wider context of controlled water sensitivity, the risk ratings may change.

5.5 Water Pipeline Suitability Test: Soil concentrations of Mineral Oils (C11 to C20) within the Made Ground failed tests for PE pipes, highlighting a risk to potable water pipes. However, considering the maximum depth of Made Ground was recorded as 0.6m bgl and potable water pipes are typically placed at a depth of 0.75m bgl as required by UK water authorities, potable water pipes will be lain in natural soils on site, within which Mineral Oils (C11 to

C20) were identified as not exceeding the limit of detection. Therefore, a low risk to potable water pipes has been determined.

5.6 Phytotoxicity: Soil concentrations for zinc within the Made Ground exceeded risk criteria considered protective of healthy plant growth in two locations (TP1 and TP2). However, it is noted that these elevated concentrations were located on the northern site of the site, whilst any proposed soft landscaping is adjacent to the southern boundary only. Furthermore, two exploratory hole locations adjacent to the proposed soft landscaping did not identify elevated concentrations of zinc. Therefore, a low risk to flora has been determined.

Identified Risks of Concern – Final Development Context

Any issue(s) identified following the second phase of assessment have been grouped into relevant Contamination Issues. A Contamination Issue can either have a common source, contaminant or receptor, and either one or more risk ratings as a result. The following table(s) summarise the identified contamination issues.

CONTAMINATION ISSUE 1	
Area of Site	
Area of the site impacted by the onsite fire, mainly the northern and central areas – TP2, TP4 and TP5	
Contaminants of Concern	**Receptor Category at Risk**
Phosphate and Potassium	Human Health and Groundwater

Source Details (occurrence and distribution)

An elevated concentration of phosphate were recorded within the shallow Made Ground at TP2, which could be indicative of a localized impact on the shallow soils from the fire suppression chemicals given that TP2 was located adjacent to the footprint of the building which was damaged by fire and ashy material was also noted across this area. Similarly, potassium was also marginally elevated within the shallow soils in TP2, as well as TP4 and TP5, which were located within the footprint of the fire damaged building. However, given the former agricultural use of the site, the elevated concentrations could also be linked to this. In addition, the concentrations of PFOs, PFAs and PFOA (other fire suppression chemicals) were recorded below laboratory detection limits within TP2, TP4 and TP5.

Given the presence of low permeability Head Deposits beneath the site, the presence of any potential fire suppression chemicals within the shallow Made Ground are considered to pose a low risk to groundwater quality within the Hythe Formation, as the Head Deposits will limit the potential for the vertical migration of any mobilized contamination and therefore limit the potential for contaminants to entre the Hythe Formation.

Context of Proposed Development and Layout

Based on the proposed layout plans, TP2, TP4 and TP5 will be situated under hardstanding (either the proposed new building or external hardstanding) therefore the presence of hardstanding will break the pathway between future site users and the potentially fire suppression impacted Made Ground. In addition, the presence of hardstanding across these areas will also limit the potential for mobilization of contaminants by stopping infiltration, which further reduces risks to groundwater.

Risk Summary

Acknowledging the proposed building and hardstanding configuration, resultant risks to end users are only present in areas of proposed soft landscaping.

Receptor	Risk Rating	Notes
Human Health	Low	Presence of hardstanding will break the pathway
Groundwater	Low	Presence of hardstanding will limit infiltration

Impact to Development

No unacceptable impacts to development have been identified. It is recommended that during the development works, the ashy soils / material at TP2 is removed.

6.0 Conclusions & Next Steps

6.1 A Phase 2 Site Investigation has been undertaken to support the proposed redevelopment of a site located off Gravelly Bottom Road in Kingswood, Kent, in order to comply with Condition 4 of the relevant Planning Decision Notice - Reference 22/505903/FULL. The objective of the works was to provide information on the contaminative status of the site whilst obtaining information on the shallow ground conditions.

6.2 It is understood that the development proposals for the site involve the full clearance of the fire damaged structure to create a new industrial/commercial scheme. The proposed site plan includes a replacement low rise industrial building, external hardstanding for parking spaces and an area of soft landscaping along the southern site boundary for tree screening. There are no basements, undercroft car parking or other underground structures anticipated with below ground features limited to foundations and buried services.

Ground Condition Summary

6.3 Made Ground was found in every exploratory hole from surface to a maximum depth of 0.6m bgl. The predominant material was found to be sand. The average thickness of the Made Ground was calculated to be 0.28m. All types of Made Ground contained anthropogenic materials such as clinker, tarmac, concrete, brick, plastic and metal. No visual or olfactory evidence of hydrocarbon contamination was identified.

3.12 Underlying the Made Ground was various types of Head material comprising sands, silts and gravels, that went on to become an orangish brown clay deeper down. The head materials had a minimum depth of 0.3m bgl and a maximum depth of 1m bgl (base of holes). The average thickness of the Head was calculated at 0.52m.

Contamination Risk

6.4 This investigation has shown that the contaminative status of the site should not be prohibitive to the proposed redevelopment of the site.

6.5 As illustrated in Chapter 4 all of the contamination risks attributable to viable pollutant linkages were considered to be low and very low and as such no remedial measures are

considered necessary in order to support the proposed redevelopment. However, it is recommended that following are implemented:

- At TP2 the first stratum was Made Ground which comprised black gravelly SAND containing tarmac, clinker, burnt wood and ash should be removed. This stratum was recorded between surface and 0.10m bgl.
- A layer of clean certified topsoil, 150mm in thickness, should be placed across the proposed area of soft landscaping on the southern boundary in order to provide a suitable growth medium of the tree screening.

Planning Considerations & Next Steps

6.6 This Phase 2 report should be submitted to the local planning authority to discharge planning condition 4.1 under application reference 22/505903/FULL. As noted above, no formal remedial works are considered necessary, however the Local Planning Authority may require the above recommendations to be formalised within a Remediation Strategy, which would be required to discharge condition 4.2.

Non-specialist Environmental Watching Brief

6.7 It is prudent to ensure a watching brief is carried out by a suitable person on-site throughout the works who is experienced and capable of identifying signs of potential contamination, including, but not limited to, staining, unfamiliar odours and visual evidence of potentially contaminated/ hazardous materials such as asbestos.

6.8 If any suspected ground contamination such as unusual odours, visually impacted soils/water, suspected asbestos or any potentially hazardous waste not recorded during this investigation is encountered during the works, further sampling and testing should be carried out under supervision by Lustre. This will allow the determination of the appropriate management and mitigation measures to address any potential risks as part of the development of the site.

Unforeseen Ground Contamination

6.9 A reasonable amount of skill and care, as expected, has been used to deliver this investigation in accordance with the agreed scope of work and meet the required objectives.

However, the potential for unforeseen contamination to be present, or encountered during future groundworks, maintenance works and/or site clearance/redevelopment works cannot be entirely eliminated. This will be particularly important when working within the vicinity of areas that were not investigated, or the method of investigation employed was limited due to safety (i.e. live underground services), access, financial, public relations, third party intervention and/or risk etc. which influenced the scope of the investigation. A site investigation can only provide a snapshot of the ground conditions encountered at the time covering a relatively small proportion of the site, with samples only representing discrete parcels of ground. Care and diligence are advised even if a site investigation records a low or very low risk of contamination. Lustre cannot be held responsible for unforeseen contamination that may be present or encountered in the future.

Statutory Designation

6.10 It is our opinion, based on the findings of this Phase 2 Site Investigation, that the site would not be designated as statutory contaminated land by the Local Authority in accordance with the published Statutory Guidance. It is advisable however that any recommendations to reduce the risk ratings noted in the previous chapter are implemented fully, to ensure the site becomes safe and compliant.

7.0 Construction Phase Advisory Matters

7.1 Aside from land contamination issues that require consideration under the planning regime, the findings of this investigation impact other aspects of the construction phase. These items often require action to ensure that you continue to have a safe and compliant site and include matters such as waste soil classification, managing contamination during construction, drainage conditions, impacts of piling etc.

Waste Classification of Soils

7.2 The development will require soils to be removed from site as part of the groundworks and construction process. Guidance set out in the Waste Framework Directive and the Environment Agency's Technical Guidance WM3 Hazardous Waste, provides information and controls on how sites should manage and dispose of waste soils. Waste producers have a duty of care under the waste regulations which initially requires them to classify the waste they produce before it is collected, disposed of or recovered, to identify any controls that apply to the waste movement, to complete relevant documents and records, to identify suitably authorised waste management options and to prevent harm to people and the environment.

7.3 This section provides information on the preliminary waste classification of soils, which may require removal from site. It is important to note that the regulations require waste producers to classify any waste soils; however, the soils assessed as part of this investigation may not be representative of the soils being removed from site during redevelopment and therefore consideration should be given by the waste producer if further testing of waste soils is needed prior to disposal, to ensure the actual waste soils leaving the site is classified appropriately.

USEFUL INFORMATION ON WASTE, CODES AND DISPOSAL	
When do Soils Become a Waste?	Any man-made soils (such as Made Ground) or contaminated soils become a waste when excavated from the ground and must be disposed of off-site, unless suitable permits are granted to allow re-use. Uncontaminated natural soils which are excavated and have a certainty for re-use on site as part of redevelopment works are not considered a waste.
What are Mixed Soil Wastes?	Mixed wastes are soils which contain materials that could be classified differently. Mixed waste should be assessed separately and undergo a form of pre-treatment and/or segregation prior to disposal. Mixed wastes could

USEFUL INFORMATION ON WASTE, CODES AND DISPOSAL	
	include soils contaminated with ACM – in this case both the ACM fragments and soils would require separate assessment and disposal. Mixing of hazardous wastes and soils with different hazardous substances (hydrocarbons, asbestos etc) is prohibited under the Waste Framework Directive.
Do I Need to Segregate My Wastes?	Measures should be implemented on site to segregate waste streams with natural material stockpiled separately from any Made Ground. Any oversized and waste materials (such as construction waste, ACMs, plastics, metals etc), will require segregation from the soil (where practicable), and separate and appropriate disposal.
What are the Available Waste Classifications?	Waste soils must fall into one of two categories: Hazardous or Non-Hazardous. Each classification results in the following European Waste Codes (EWC codes): **Hazardous soils**: 17-05-03 (soil and stones containing hazardous substances) **Non-Hazardous soils**: 17-05-04 (soil and stones) The term 'inert' is not strictly a classification of waste. These codes relate to Chapter 17 in the List of Waste, as construction and demolition wastes (including excavated soil from contaminated sites). The case for hazardous waste is unrelated to soils that may have been identified as "hazardous" from a human health risk assessment.
What Makes a Waste Hazardous?	Concentrations of contaminants which exceed established hazardous properties (HP) and/or statements. This can include the presence of asbestos >0.1%, high concentrations of certain metals, significant hydrocarbon contamination etc. The Hazardous properties thresholds for waste classification are different to screening values for assessing risks to human health. A waste soil could be classified as hazardous based on the accumulative effect of contaminant concentrations, but not pose a risk to human health based individual contaminant concentrations.
What are the Landfill Options?	Waste soils can be disposed of at hazardous landfills, non-hazardous landfills and inert landfills. Some sites, which are not landfills such as recovery and restoration sites, often have similar but more stringent criteria for receiving inert soils. It is the responsibility of the waste producer to ensure that the chosen waste recovery or disposal site is able to accept the waste soils and that the EWC codes for waste soils from construction and demolition are included on the receiving sites Environmental Permit.
Soils Suitable for Disposal at an Inert Landfill	'Inert' is not a waste classification, but a category of waste recipient which can only accept waste that acts in an inert way when deposited. Soils suitable for disposal at an inert landfill must not undergo any significant physical, chemical or biological transformations (dissolve, burn, physically or chemically react, biodegrade etc) in a way likely to cause environmental pollution or harm to human health. **Practically it must be non-hazardous, not contain organic materials, plastics, metals, contamination etc, and meet the criteria for 'inert' disposal through Waste Acceptance Criteria (WAC) testing.** Given the variability of Made Ground and potential for this soil type to contain a significant amount of non-inert materials which cannot be readily segregated, Made Ground won't often be considered suitable for disposal at an inert landfill. However, if the soils contain an incidental amount of non-inert materials (following segregation), are relatively homogenous, non-

USEFUL INFORMATION ON WASTE, CODES AND DISPOSAL	
	hazardous and meet the inert WAC criteria then this material can be disposed of at an inert landfill. However, it is noted that certain wastes may be disposed of as inert without testing. Council Decision 20003/33/EC Annex, 2.1.1 lists those wastes that meet the definition of inert waste in Article 2(e) of the Landfill Directive. In the case of suspicion of contamination testing should be applied.
When do I Need a WAC Test?	WAC testing is only needed when soils are found to be hazardous or could be disposed of at an inert landfill. WAC testing is not required if the soils are non-hazardous and plan to be disposed of as a non-hazardous landfill. A WAC test does not classify the waste!

Preliminary Waste Assessment of Soils

7.4 Detailed information on the process adopted in this preliminary waste assessment is set out in Appendix A. The table below summaries the findings of the preliminary waste assessment based on the results of the chemical testing discussed earlier in this report.

Table 6 Preliminary Waste Assessment of Soils

Soil Type	Area / Type	Waste Classification	Waste Code	Disposal Route / WAC Result	Comments
Made Ground	Site Wide	Non-hazardous	17 05 04	Non-hazardous landfill	Presence of non-inert materials (organics)
Natural Soils	Site wide	Non-hazardous	17 05 04	Inert (TBC by WAC)	Homogenous natural soils

7.5 Copies of all HazWasteOnline results are provided in Appendix D.

Asbestos in Soils and Waste Classification

7.6 If asbestos contaminated soils are present on site, specific measures need to be put in place to safely manage these arisings. Any visible ACM fragments (>50mm) in soils will result in that material being classified as hazardous waste. If the visible fragments are removed and the free fibre content is below 0.1%, the soils would become non-hazardous waste (17-05-04, assuming no other hazardous properties have been identified in that material).

Waste Related Recommendations

7.7 As noted above, it is advisable that the waste producer considers the classification of soils above in the context of the exploratory locations advanced in this investigation and the actual locations and depths of soils requiring disposal (once this information is known).

7.8 If any tanks, drums, scrap metal or other wastes are present on site, these will require separate assessment and disposal to remove these materials. Records should be kept of the removal of these waste items.

7.9 In addition, the following site-specific recommendations are made regarding waste classification. It is noted that these recommendations only apply if soils in these locations require excavation and off-site disposal; if soils in these locations remain in-situ, these points do not require actioning):

- Any oversized, non-inert and non-soil materials within the Made Ground (such as construction waste, metals, plastic and wood) should be segregated from the Made Ground for separate and appropriate disposal or recovery.
- WAC testing may be required by the waste recipient if the disposal route is likely to be an inert landfill or a hazardous landfill.

General Responsibilities (Waste)

7.10 The Client and contractors involved in the excavation, segregation and off-site disposal are responsible for the correct management and pre-treatment of waste spoil generated by all earthworks. These parties have a duty of care which requires suitable management and disposal of wastes in accordance with the regulations. Given that Lustre does not have any significant involvement during the earthworks phase, full responsibility for waste management rests with the principal contractor/waste producer.

7.11 The waste producer must retain a copy of *all* waste consignment notes, waste hauler documentation and waste recipient documentation and licenses.

Preferential Pathways (Foundations)

7.12 Deep foundations could result in the creation of preferential pathways and movement of potentially contaminated soils to depth. Depending on the site circumstances, these

processes can result in a deterioration of groundwater quality. The use of deep foundations is considered unlikely to impact groundwater given that significant soil contamination has not been identified which could be potentially mobilised to impact groundwater through piling.

Asbestos in Soils

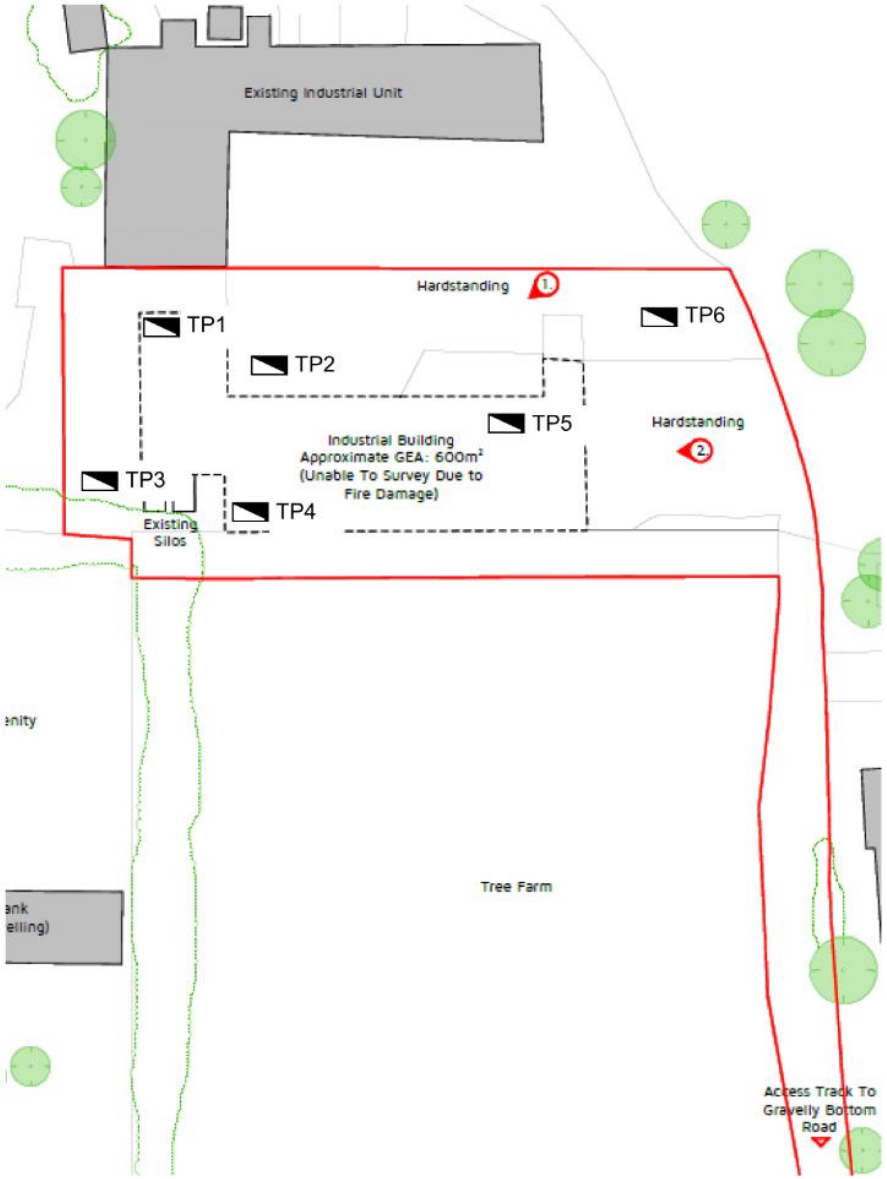
7.13 This report does not specifically consider the risk from asbestos in soils to construction workers. It is generally recommended that if asbestos has been recorded in soils on site, the groundworks contractor should prepare a detailed method statement for the excavation, handling and storage of asbestos contaminated soil (ACS), in addition to implementing an asbestos watching brief. As a minimum, the groundworks contractor should hold the appropriate level of asbestos awareness training and be competent in managing ACS. The risk from asbestos to groundworkers should be clearly understood and communicated to those working with soils on site.

Imported Soils and Recycled Crush

7.14 Any soils or crushed concrete imported to site during the development which will be retained on site should be checked to ensure they do not contain contaminants which may pose a risk to future site users. Evidence of due diligence in this regard is often requested by regulators to demonstrate that imported materials do not contain contaminants such as asbestos

RETURN

Drawings



N

Key

- Site Boundary
- Trial Pit

Notes

Do not scale from this drawing. Approximate positions only. Report all errors and omissions to author.

Rev	Date	Description

Client / Project

Individual
Gravelly Bottom Road - Kingswood
Gravelly Bottom Road, Maidstone, Kent, ME17 3NU

Drawing Title

Proposed Site Investigation Plan

Project Number	Drawing Number	Date	Designed by	Approved by
4728	001	10/07/23	JW	MC

LUSTRE CONSULTING

Lustre Consulting Limited
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APPENDIX A: Reference Information

PHASE 2 REFERENCE INFORMATION

APPROACH TO INVESTIGATIONS & CONTAMINATED LAND DEFINITIONS

RETURN

Environmental site investigations are prepared in keeping with best practice and current planning guidance, where practicable and in accordance with the approved scope of work. The National Planning Policy Framework (NPPF)[8] advises regulatory consultees to ensure that adequate site investigation information is provided at the initial planning stage, whilst the Land contamination risk management guidance (LCRM, October 2020) requires a phased, risk based approach when dealing with land affected by contamination in the UK.

References to the term "contaminated land" in our reports relate to the statutory definition of contaminated land under the recently published Contaminated Land Statutory Guidance unless otherwise stated (also known as Category 1 and 2 under Part 2A). That definition is: "any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances on in or under the land that –

a) Significant harm is being caused or there is a significant possibility of such harm being caused; or
b) Significant pollution of water environment is being caused or there is significant possibility of such pollution being caused".

Other terms such as "land affected by contamination" or "land contamination" refer to the much broader categories of land where contaminants are present but usually not at a significant level of risk to be classified as contaminated land under the definition Part 2A (also known as Category 3 or Category 4 under Part 2A).

The National Planning Policy Framework (NPPF) states that "land should be suitable for its new use and as a minimum, after carrying out remediation (if required), the land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990".

NOTES ON LOGGING & SAMPLING

RETURN

For all exploratory holes excavated, soil arisings are recovered and logged to BS5930: 2015[9]. Where possible, observations on groundwater ingress and excavation stability are made. Soil arisings are then typically inspected for visual and olfactory evidence of contamination with samples recovered at varying depths for analysis depending on the scope of works. Disturbed and undisturbed samples (where applicable) are taken in accordance with guidance and deposited in suitable containers, prepared and dispatched to a UKAS (United Kingdom Accreditation Service) accredited laboratory.

If appropriate to the nature of the works, soil samples from the Made Ground or potentially contaminated soils are also deposited in sealable plastic bags to allow on-site headspace analysis. Samples are then left for at least 20 minutes before analysis and a photo-ionisation detector (PID) with 10.6eV lamp used to measure the concentration of volatile organic compounds (VOC) within the headspace. Soil samples are gently agitated during analysis to encourage the release of any volatiles.

QUANTITATIVE RISK ASSESSMENTS

RETURN

[8] Department for Communities and Local Government, National Planning Policy Framework, 2019.

[9] British Standard – Code of Practice for Site Investigation. BS 5939: 2015.

Human Health GQRA

To determine whether contamination presents an unacceptable level of risk to human health, concentrations of potential contaminants are screened against risk threshold values. Historically, these values had been in the form of Generic Assessment Criteria (GAC) and Soil Guideline Values (SGVs), published by regulatory and advisory bodies. However, in response to revised Part 2A Statutory Guidance, Defra published Category 4 Screening Levels (C4SLs) for six determinands to provide a simple test for deciding when land is 'suitable for use' and demonstrably not 'contaminated land'. The supporting documentation from Defra[10] acknowledges that where C4SLs exist, these values represent a greater risk threshold (i.e. low risk) rather than the previous SGVs/GACs (i.e. no risk). Acknowledging that the C4SLs were primarily intended for use under Part 2A Statutory Guidance, LQM in collaboration with the Chartered Institute of Environmental Health (CIEH), subsequently published a third set of generic assessment criteria known as LQM/CIEH Suitable 4 Use Levels (S4ULs)[11]. The S4ULs are based on the 'minimal or tolerable level of risk' as defined in previous Environment Agency guidance (namely SR2[12]) which underpinned all previous SGVs/GACs. The National Planning Policy Framework (NPPF)[13] requires that planning decisions undertaken by the Local Planning Authority should decide if a site is suitable for its new use and not just whether the site is determinable under Part 2A. Whilst Defra states that the C4SLs could be applied under the planning regime, it is acknowledged that these screening levels were primarily published to support the Part 2A Statutory Guidance. Taking this into account, the S4ULs are often used in the first instance. Where an exceedance above these levels is identified, comparison against C4SLs will generally be undertaken, with consideration given to the applicability of a less conservative threshold.

Water Pipeline Suitability Test

Often, at the time of site investigation, the route of any proposed potable water pipes are not known, or are largely inaccessible if an existing development is present. As such, potable water pipe assessments are based on the shallow soils across the site as a whole. In accordance with UKWIR guidance, we consider determinands for assessment based on the historical use of the site. Available analytical data is then compared against the UKWIR thresholds. The assessment of ethers, nitrobenzene, ketones, aldehydes and amines are often not considered applicable. The assessment of mineral oil is undertaken using the results from any speciated TPH test data, which provides a breakdown of the hydrocarbon fractions.

Groundwater GQRA

When assessing the risks to groundwater, the screening criteria adopted includes the UK Drinking Water Standards (DWS) as specified in Water Quality Regulations 2000[14], Environmental Quality Standards (EQS) for freshwater[15] and World Health Organisation (WHO) standards for drinking water quality[16]. The hierarchy that these are adopted is based on the conceptual site model and the most sensitive receptors in the context of the site and the local use of any groundwater. In the absence of UK published guidance values for total petroleum hydrocarbons, the WHO guideline values (provided in Petroleum Products in Drinking Water guidance) are adopted[17]. The use of the lowest screening criteria for an individual TPH fraction has been adopted as set out in the guidance, which provides a conservative assessment for TPH.

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[10] SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document, March 2014

[11] The LQM/CIEH S4ULs for Human Health Risk Assessment, 2015. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3455. All rights reserved

[12] Environment Agency, Human Health Toxicological Assessment of Contaminants in Soil (SR2), January 2009

[13] Department for Communities and Local Government, National Planning Policy Framework, 2019

[14] The Water Supply (Water Quality) Regulations 2000

[15] Environmental Quality Standards, The Water Supply (Water Quality) Regulations 2002

[16] World Health Organisation (WHO) Guidelines for Drinking Water Quality, 1984

[17] Petroleum Products in Drinking-water, WHO (WHO/SDE/WSH/05.08/123)

Ground Gas Risk Assessments

Ground gases such as methane and carbon dioxide can be generated naturally from the ground, particularly where decaying organic matter is present. These gases can also be generated by buried degradable waste or other organic compounds in Made Ground / infilled ground. Carbon dioxide and methane can migrate through the soil over significant distances and enter buildings via the subfloor void or other entry points. The hazard associated with methane is explosion, whilst for carbon dioxide the hazard is asphyxiation, particularly in confined spaces. BS 8485:2015[18] sets out a series of gas screening values to enable the assessment of risk, depending on the type and sensitivity of the proposed buildings on site.

CONCEPTUAL MODEL & QUALITATIVE RISK ASSESSMENTS

RETURN

The objective of a conceptual model is to firstly identify potential contaminant sources, pathways and receptors relating to the site and surrounding area based on the findings of this investigation. This information is then collated, and a qualitative risk assessment carried out in line with good practice and current guidance[19,20] to assess any viable source-pathway-receptor pollution linkages. The potential for a pollution event to occur is then evaluated using a risk classification tool[21.] The level of risk is assigned by considering the likelihood that a pollution event might occur with the consequence its occurrence. The consequence is essentially a measurement of the severity of a hazard or source (e.g. contaminated soil) and sensitivity of the receptor (e.g. aquifer type or end user).

REMEDIATION AND VALIDATION

RETURN

Following the identification of unacceptable risks to receptors in a site investigation, either more investigation is required to better understand the risk, or often remediation is required. Remediation aims to lower the risk to an acceptable level by either removing the source or breaking / reducing the pathway. The methodology for carrying out any remediation is documented in a Remediation Strategy, and typically forms the third stage in the iterative risk-based approach. The strategy requires regulatory approval before commencing the actual remedial work. Remediation requires careful management and planning, with inspections and testing by the consultant to verify that the remediation has been undertaken in accordance with Remediation Strategy. Information collected over the course of the remedial work is then compiled into a Verification Report in line with the Environment Agency's Evidence, Verification of Remediation of Land Contamination[22].

NOTES ON WASTE CLASSIFICATION (SOILS)

RETURN

Guidance set out in the Waste Framework Directive and the Environment Agency's Technical Guidance WM3 Hazardous Waste , provides information and controls on how sites should manage and control waste soils. The first stage of the waste assessment, as set out in Technical Guidance WM3 Hazardous Waste, requires the chemical composition of the soils to be determined by analytical testing, in order to determine if the soils should be classified as hazardous or not hazardous. The second stage requires a Waste Acceptance Criteria (WAC) test to determine the case of inert or non-hazardous waste disposal routes for the soil. Landfills have set criteria for wastes which they can legally accept, and the WAC test therefore provides information on which type of landfill can accept the waste.

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

[19] Guidance for the Safe Development of Housing on Land Affected by Contamination R&D66, NHBC, 2008.

[20] Construction Industry Research and Information Association (CIRIA). Contaminated Land Risk Assessment. A Guide to Good Practice. CIRIA C552 2001.

[21] Department of the Environment, Transport and the Regions, Environment Agency and Institute of Environmental Health. Guidelines for Environmental Risk Assessment and Management. HMSO July 2000.

[22] Environment Agency, Evidence, Verification of Remediation of Land Contamination, SC030114/R1, 2010

Only contaminated soils which are excavated will require classification and assessment for waste disposal as under the Waste Framework Directive, as these soils cannot be re-used on site. In-situ, unexcavated contaminated soils do not require classification. Also uncontaminated soils and other naturally occurring material excavated in the course of construction activities, when it is certain that the material will be used for the purposes of construction in its natural state, on the site from which it was excavated, also do not require classification.

Waste Classification Methodology

The first stage of this assessment is to assign a waste code to the soils requiring classification. This is obtained from the 20 Chapters of The List of Waste (England) Regulations 2005 and includes the consideration of both mirror entries and absolute entries. For mirror entries the soils requiring disposal will be assessed within the HazWasteOnline tool to determine if hazardous properties are present and therefore if the mirror hazardous or mirror non-hazardous code is applicable to the waste classification.

The results of the laboratory analysis are screened in a propriety hazardous waste assessment tool (HazWasteOnline) to determine if the soils would be considered hazardous from a waste disposal perspective. Concentrations of each contaminant are screened to determine if they exceed any of the sixteen hazardous properties (HP) and/or statements as set out the Environment Agency's Technical Guidance WM3 (Guidance on the classification and assessment of waste, 1st edition 2015).

The initial waste assessment on HazWasteOnline identifies those contaminants which exceed any of the sixteen hazardous properties / statements. This is based on the presence of individual anions or cations identified during the chemical analysis of the soils. However, this analysis does not always identify which specific components are present. Where possible, further information has been obtained on which precise substances are likely to be present within the soils, based on the known historical and current site uses and operations. This information can be used to rule out the presence of 'worst case' substances within the HazWasteOnline tool. Further information on the specific assumptions made during the waste assessment are provided in the Assumptions Section below and in the HazWasteOnline output sheet included as an attachment to this letter report.

Following the application of project specific assumptions, a detailed waste assessment has been generated. As part of the detailed waste assessment, consideration has also been given to whether the soils should be considered as a single population or as sub populations based on field observations or the presence of specific contaminants.

Waste Assessment Assumptions

Based on our current understanding of historical and current site operations, the following assumptions have been applied within the HazWasteOnline tool, unless explicitly stated in Chapter 7:

- HP3 Flammable has been discounted as a viable Hazardous Property as the soils considered within this assessment are a solid waste without a free draining liquid phase. This is likely due to advice from the laboratory indicates that testing for flammability was not appropriate due to the low level of TPH. The waste does not display this hazardous property.
- Metallic compounds are not considered to be present in their chromate form as the laboratory analysis has demonstrated that insufficient concentrations of hexavalent chromium are present to enable the formation of chromates within the soils.
- Based on the data available it is considered likely that any metallic compounds present within the soils underlying the site are most likely present in their oxide form, rather than as chlorides, sulphates, sulphides, carbonates or phosphates.

RETURN

APPENDIX B: Exploratory Hole Logs

Trial Pit Log

Trialpit No **TP1**

Sheet 1 of 1

Project Name: Gravelly Bottom Road	Project No. 4728	Co-ords: - Level:	Date 12/07/2023
Location: Kingswood		Dimensions (m): 2 × 0.8, Depth 0.80	Scale 1:25
Client: Rob Schroeder			Logged Morwenna Corry

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.08			Concrete. (CONCRETE)
	0.20 - 0.30	ES	PID=0				Soft to firm dark brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse angular to subangular of concrete, brick, tile, flint and clinker. Occasional roots and rootlets. (MADE GROUND)
				0.60			Soft to firm orangish brown mottled red CLAY. Occasional rootlets. (HEAD)
	0.70 - 0.80	ES	PID=0	0.80			End of pit at 0.80 m

Remarks: Plant reference:

Stability:

LUSTRE CONSULTING

Trial Pit Log

Trialpit No
TP2
Sheet 1 of 1

Project Name: Gravelly Bottom Road	Project No. 4728	Co-ords: - Level:	Date 12/07/2023
Location: Kingswood		Dimensions (m): 2 × 0.8, Depth 0.80	Scale 1:25
Client: Rob Schroeder			Logged Morwenna Corry

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.20	ES	PID=0	0.10			Black gravelly fine to coarse SAND predominantly of ash. Gravel is fine to coarse angular to subangular of tarmac, clinker and burnt wood. Frequent roots and rootlets. (MADE GROUND)
	0.30 - 0.40	ES	PID=0	0.30			Grey silty gravelly fine to coarse SAND. Gravel is fine to coarse subangular to subrounded of concrete, flint, brick, clinker, tile, plastic, wood and metal. Rare medium gravel sized fragments of glass. Frequent roots and rootlets. (MADE GROUND)
				0.60			Light yellowish brown slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded of flint and ironstone. (HEAD)
				0.80			Firm to stiff fissured orangish brown mottled red friable CLAY. Fissures are very closely spaced, sub-horizontal planar and rough. (HEAD)
							End of pit at 0.80 m

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5

Remarks: Plant reference:

Stability:

AGS

Trial Pit Log

LUSTRE CONSULTING

Trialpit No **TP3** Sheet 1 of 1

Project Name: Gravelly Bottom Road	Project No. 4728	Co-ords: - Level:	Date 12/07/2023
Location: Kingswood		Dimensions (m): Depth 0.90 — 2 × 0.8	Scale 1:25
Client: Rob Schroeder			Logged Morwenna Corry

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.10			Concrete. (CONCRETE)
	0.30 - 0.40	ES	PID=0	0.30			Greyish brown silty slightly sandy fine to coarse angular to subrounded GRAVEL of flint, concrete, brick and clinker with a medium cobble content. Sand is fine to coarse. Cobbles are subangular of concrete. (MADE GROUND)
	0.50 - 0.60	ES	PID=0	0.70			Light yellowish brown slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded of flint and ironstone. (HEAD)
				0.90			Soft to firm orangish brown mottled red CLAY. (HEAD)
							End of pit at 0.90 m

1 2 3 4 5

Remarks: Plant reference:

Stability:

AGS

Trial Pit Log

LUSTRE CONSULTING

Trialpit No **TP4**

Sheet 1 of 1

Project Name: Gravelly Bottom Road	Project No. 4728	Co-ords: - Level:	Date 12/07/2023
Location: Kingswood		Dimensions (m): 2 × 0.8, Depth 0.90	Scale 1:25
Client: Rob Schroeder			Logged Morwenna Corry

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.15 - 0.25	ES	PID=0	0.15			Concrete. (CONCRETE)
				0.40			Grey silty gravelly fine to coarse SAND. Gravel is fine to coarse subangular to subrounded of concrete, flint, brick, clinker, tile, plastic, wood and metal. Frequent roots and rootlets. (MADE GROUND)
	0.70 - 0.80	ES	PID=0				Firm to stiff orangish brown mottled red silty CLAY. (HEAD)
				0.90			End of pit at 0.90 m

Remarks: Plant reference:

Stability:

AGS

Trial Pit Log

Trialpit No **TP5**

Sheet 1 of 1

Project Name: Gravelly Bottom Road	Project No. 4728	Co-ords: - Level:	Date 12/07/2023
Location: Kingswood		Dimensions (m): 2 × 0.8, Depth 1.00	Scale 1:25
Client: Rob Schroeder			Logged Morwenna Corry

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.10			Concrete. (CONCRETE)
	0.30 - 0.40	ES	PID=0	0.30			Light yellowish brown slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of brick, flint, clinker and concrete. Rare medium gravel sized fragments of metal. Frequent roots and rootlets. (MADE GROUND)
	0.90 - 1.00	ES	PID=0	1.00			Soft to firm orangish brown mottled red slightly sandy CLAY. Sand is fine to coarse. (HEAD)
							End of pit at 1.00 m

Remarks: Plant reference:

Stability:

LUSTRE CONSULTING

Trial Pit Log

Trialpit No
TP6
Sheet 1 of 1

Project Name: Gravelly Bottom Road	Project No. 4728	Co-ords: - Level:	Date 12/07/2023
Location: Kingswood		Dimensions (m): Depth 0.90 — 2 × 0.8	Scale 1:25
Client: Rob Schroeder			Logged Morwenna Corry

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.10			Concrete. (CONCRETE)
	0.20 - 0.30	ES	PID=0	0.30			Grey silty slightly gravelly fine to coarse SAND. Gravel is fine to coarse subangular to subrounded of concrete, flint, brick, clinker, tile, plastic, wood and metal. Frequent roots and rootlets. (MADE GROUND)
	0.60 - 0.70	ES	PID=0				Soft to firm orangish brown mottled red CLAY. (HEAD)
				0.90			End of pit at 0.90 m

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Remarks: Plant reference:

Stability:

AGS

APPENDIX C: Laboratory Test Certificates

RETURN

Maddie Edwards
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Analytical Report Number : 23-44839-2

Replaces Analytical Report Number: 23-44839, issue no. 1
Additional analysis undertaken.
PFAS Analysis undertaken for all leachate samples .

Project / Site name:	Gravely Bottom Road - Kingswood	**Samples received on:**	13/07/2023
Your job number:	4728	**Samples instructed on/ Analysis started on:**	13/07/2023
Your order number:	4728	**Analysis completed by:**	27/07/2023
Report Issue Number:	2	**Report issued on:**	04/08/2023
Samples Analysed:	3 leachate samples - 12 soil samples		

Signed: JSzwagrak

Joanna Szwagrzak
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

Excel copies of reports are only valid when accompanied by this PDF certificate.

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

Analytical Report Number: 23-44839
Project / Site name: Gravely Bottom Road - Kingswood
Your Order No: 4728

Lab Sample Number				2747335	2747336	2747337	2747338	2747339
Sample Reference				TP2	TP2	TP1	TP1	TP6
Sample Number				D1	D1	D1	D2	D1
Depth (m)				0.10-0.20	0.30-0.40	0.20-0.30	0.70-0.80	0.20-0.30
Date Sampled				12/07/2023	12/07/2023	12/07/2023	12/07/2023	12/07/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	6.6	8.4	13	18	9.6
Total mass of sample received	kg	0.001	NONE	1	1	1	1	1
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SFS	SFS	SFS	SFS	SFS
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.9	8.4	8.1	7.6	8.5
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	170	73	290	690	160
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.084	0.036	0.15	0.35	0.08
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	84	36.4	147	346	80
Water Soluble Phosphate as PO4 (2:1)	mg/kg	0.3	NONE	3.6	-	-	-	-
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	NONE	3.3	-	-	-	-
Ammoniacal Nitrogen as N	mg/kg	0.5	MCERTS	< 0.5	-	-	-	-
Ammoniacal Nitrogen as NH4	mg/kg	0.5	MCERTS	< 0.5	-	-	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	5.4	3.8	1.9	0.8	1.4
Carbonate as CaCO3	%	0.1	NONE	9.4	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.64	0.26	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	1.3	0.62	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	2.9	0.86	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	2.8	0.87	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	30	8.2	0.15	0.06	0.18
Anthracene	mg/kg	0.05	MCERTS	9.9	2.9	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	45	14	0.31	0.08	0.37
Pyrene	mg/kg	0.05	MCERTS	38	12	0.3	0.12	0.36
Benzo(a)anthracene	mg/kg	0.05	MCERTS	19	6.3	0.16	< 0.05	0.18
Chrysene	mg/kg	0.05	MCERTS	18	5.9	0.29	0.07	0.21
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	21	7.7	0.38	< 0.05	0.28
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	8.2	3.2	0.12	< 0.05	0.12
Benzo(a)pyrene	mg/kg	0.05	MCERTS	19	7.2	0.23	< 0.05	0.16
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	10	4	0.15	< 0.05	0.13
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	2.3	0.97	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	10	4.4	0.18	< 0.05	0.2
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	239	80.1	2.27	< 0.80	2.19

Analytical Report Number: 23-44839
Project / Site name: Gravely Bottom Road - Kingswood
Your Order No: 4728

Lab Sample Number				2747335	2747336	2747337	2747338	2747339
Sample Reference				TP2	TP2	TP1	TP1	TP6
Sample Number				D1	D1	D1	D2	D1
Depth (m)				0.10-0.20	0.30-0.40	0.20-0.30	0.70-0.80	0.20-0.30
Date Sampled				12/07/2023	12/07/2023	12/07/2023	12/07/2023	12/07/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	16	15	25	14
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	1.9	2.1	1.4	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1	1	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	33	22	53	32
Copper (aqua regia extractable)	mg/kg	1	MCERTS	26	24	24	18	37
Lead (aqua regia extractable)	mg/kg	1	MCERTS	76	61	49	24	39
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	15	13	27	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	320	320	390	170	140
Potassium (aqua regia extractable)	mg/kg	20	ISO 17025	1700	-	-	-	-
Monoaromatics & Oxygenates ~								
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	7.2	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	13	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	110	52	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	130	52	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	15	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	34	5.1	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	130	40	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	480	230	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	660	280	< 10	< 10	< 10

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

Analytical Report Number: 23-44839
Project / Site name: Gravely Bottom Road - Kingswood
Your Order No: 4728

Lab Sample Number				2747340	2747341	2747342	2747343	2747344
Sample Reference				TP6	TP3	TP3	TP4	TP4
Sample Number				D2	D1	D2	D1	D2
Depth (m)				0.60-0.70	0.30-0.40	0.50-0.60	0.15-0.25	0.70-0.80
Date Sampled				12/07/2023	12/07/2023	12/07/2023	12/07/2023	12/07/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	34	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	19	5.1	11	6	18
Total mass of sample received	kg	0.001	NONE	1	1	1	1	1
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SFS	SFS	SFS	SFS	SFS
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.4	8.8	7.9	6.8	4.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	75	130	15	240	94
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.037	0.065	0.0075	0.12	0.047
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	37.4	64.7	7.5	122	46.9
Water Soluble Phosphate as PO4 (2:1)	mg/kg	0.3	NONE	-	-	-	< 0.30	-
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	NONE	-	-	-	< 0.10	-
Ammoniacal Nitrogen as N	mg/kg	0.5	MCERTS	-	-	-	< 0.5	-
Ammoniacal Nitrogen as NH4	mg/kg	0.5	MCERTS	-	-	-	< 0.5	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.4	1.1	0.5	0.6	0.5
Carbonate as CaCO3	%	0.1	NONE	-	-	-	4.2	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.17	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.44	< 0.05	0.06	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.45	< 0.05	0.07	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.28	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.28	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.29	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.09	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.18	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.12	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.14	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	2.44	< 0.80	< 0.80	< 0.80

Analytical Report Number: 23-44839
Project / Site name: Gravely Bottom Road - Kingswood
Your Order No: 4728

Lab Sample Number				2747340	2747341	2747342	2747343	2747344
Sample Reference				TP6	TP3	TP3	TP4	TP4
Sample Number				D2	D1	D2	D1	D2
Depth (m)				0.60-0.70	0.30-0.40	0.50-0.60	0.15-0.25	0.70-0.80
Date Sampled				12/07/2023	12/07/2023	12/07/2023	12/07/2023	12/07/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	26	20	16	17	25
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.5	1.3	0.2	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	61	28	42	37	65
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	8.9	7.8	26	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	11	32	11	17	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	38	12	23	20	30
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	70	86	41	130	65
Potassium (aqua regia extractable)	mg/kg	20	ISO 17025	-	-	-	3300	-
Monoaromatics & Oxygenates ~								
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

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

Analytical Report Number: 23-44839
Project / Site name: Gravely Bottom Road - Kingswood
Your Order No: 4728

Lab Sample Number				2747345	2747346
Sample Reference				TP5	TP5
Sample Number				D1	D2
Depth (m)				0.30-0.40	0.90-1.00
Date Sampled				12/07/2023	12/07/2023
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	7.4	18
Total mass of sample received	kg	0.001	NONE	1	1
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SFS	SFS

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.6	5.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	3200	790
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.6	0.4
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	1580	396
Water Soluble Phosphate as PO4 (2:1)	mg/kg	0.3	NONE	< 0.30	-
Water Soluble Phosphate as P (2:1)	mg/kg	0.1	NONE	< 0.10	-
Ammoniacal Nitrogen as N	mg/kg	0.5	MCERTS	< 0.5	-
Ammoniacal Nitrogen as NH4	mg/kg	0.5	MCERTS	0.5	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.9	0.4
Carbonate as CaCO3	%	0.1	NONE	3.8	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.1	0.09
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.11	0.08
Pyrene	mg/kg	0.05	MCERTS	0.11	0.07
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80

Analytical Report Number: 23-44839
Project / Site name: Gravely Bottom Road - Kingswood
Your Order No: 4728

Lab Sample Number				2747345	2747346
Sample Reference				TP5	TP5
Sample Number				D1	D2
Depth (m)				0.30-0.40	0.90-1.00
Date Sampled				12/07/2023	12/07/2023
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Heavy Metals / Metalloids					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	24
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	61
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	16
Lead (aqua regia extractable)	mg/kg	1	MCERTS	24	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	36
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	190	150
Potassium (aqua regia extractable)	mg/kg	20	ISO 17025	1900	-
Monoaromatics & Oxygenates ~					
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0
Petroleum Hydrocarbons					
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	< 0.10	< 0.10
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	4.2
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	6.4
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	12
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	< 0.10	< 0.10
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	< 0.10	< 0.10
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	< 0.10	< 0.10
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10

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

Analytical Report Number: 23-44839
Project / Site name: Gravely Bottom Road - Kingswood

Your Order No: 4728

Lab Sample Number				2747347	2747348	2747349
Sample Reference				TP2	TP4	TP5
Sample Number				D1	D1	D1
Depth (m)				0.10-0.20	0.15-0.25	0.30-0.40
Date Sampled				12/07/2023	12/07/2023	12/07/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
General Inorganics						
Phosphate as P	µg/l	20	NONE	900	33	43
Environmental Forensics						
PFOA C8 Carboxylic acid	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
PFOS C8 Sulphonate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
PFAS						
Perfluorobutane sulphonate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluoropentane sulphonate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorohexane sulphonate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluoroheptane sulphonate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorooctane sulphonate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorononane sulphonate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorodecane sulphonate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluoroundecane sulphonate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorododecane sulphonate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorobutanoic acid	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorohexanoic acid	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluoroheptanoic acid	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorooctanoic acid	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorononanoic acid	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorodecanoic acid	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluoroundecanoic acid	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05
Perfluorododecanoic acid	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05

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

Analytical Report Number : 23-44839
Project / Site name: Gravely Bottom Road - Kingswood

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2747335	TP2	D1	0.10-0.20	Brown loam and sand with gravel and vegetation.
2747336	TP2	D1	0.30-0.40	Brown loam and sand with gravel and vegetation.
2747337	TP1	D1	0.20-0.30	Brown loam and clay with gravel and vegetation.
2747338	TP1	D2	0.70-0.80	Brown clay and sand with gravel and rubble.
2747339	TP6	D1	0.20-0.30	Brown loam and sand with gravel and vegetation.
2747340	TP6	D2	0.60-0.70	Brown clay and sand with gravel.
2747341	TP3	D1	0.30-0.40	Brown loam with gravel and stones.
2747342	TP3	D2	0.50-0.60	Brown loam and clay with gravel and vegetation.
2747343	TP4	D1	0.15-0.25	Brown loam and clay with gravel.
2747344	TP4	D2	0.70-0.80	Brown clay and loam with gravel.
2747345	TP5	D1	0.30-0.40	Brown clay and sand with gravel and rubble.
2747346	TP5	D2	0.90-1.00	Brown loam and clay with gravel and vegetation.

Analytical Report Number : 23-44839
Project / Site name: Gravely Bottom Road - Kingswood

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Carbonate in soil	Determination of Carbonate by extraction with 1M HCl followed by titration with 1M NaOH.	In house method.	L034-PL	D	NONE
Cations in soil by ICP-OES	Determination of cations in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Phosphate in soil	Determination of ortho phosphate in soil by extraction with water then by addition of ammonium molybdate, potassium antimonyl tartrate and ascorbic acid followed by discrete analyser (colorimetry).	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS

Analytical Report Number : 23-44839
Project / Site name: Gravely Bottom Road - Kingswood

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammoniacal Nitrogen as N in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method,10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Water Soluble Phosphate as P in soil	Determination of ortho phosphate in soil by extraction with water then by addition of ammonium molybdate, potassium antimonyl tartrate and ascorbic acid followed by discrete analyser (colorimetry).	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	D	NONE
Phosphate as P in leachate	Determination of ortho phosphate in leachate by addition of ammonium molybdate, potassium antimonyl tartrate and ascorbic acid followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

Analytical Report Number : 23-44839
Project / Site name: Gravely Bottom Road - Kingswood

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
EF - PFAS suite 2 in leachates by LC-MS/MS	PFAS suite 2 in leachates by LC-MS/MS	In-house method PFAS suite 2 in leachates by LC-MS/MS	UK	W	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

~ - Quality control surrogate recovery outside of limits, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

UKAS TESTING
4041

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Analytical Report Number : 23-49206

Project / Site name:	Gravelly Bottom Road - Kingswood	**Samples received on:**	13/07/2023
Your job number:	4728	**Samples instructed on/ Analysis started on:**	01/08/2023
Your order number:		**Analysis completed by:**	10/08/2023
Report Issue Number:	1	**Report issued on:**	11/08/2023
Samples Analysed:	5 leachate samples		

Signed:

Dominika Warjan
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

Excel copies of reports are only valid when accompanied by this PDF certificate.

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

Analytical Report Number: 23-49206
Project / Site name: Gravelly Bottom Road - Kingswood

Lab Sample Number				2771693	2771694	2771695	2771696	2771697
Sample Reference				TP2	TP1	TP3	TP4	TP5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.40	0.20-0.30	0.30-0.40	0.15-0.25	0.30-0.40
Date Sampled				12/07/2023	12/07/2023	12/07/2023	12/07/2023	12/07/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH (automated)	pH Units	N/A	ISO 17025	7.7	7.3	7.4	8	7.6
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO_4	mg/l	0.1	ISO 17025	3.6	6.6	2	13.2	255
Total Organic Carbon (TOC)	mg/l	0.1	NONE	10.6	8.38	6.21	9.92	12.4
Hardness - Total	mgCaCO 3/l	1	NONE	18.8	29.2	13.5	87.2	321
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1	ISO 17025	5.2	1.6	< 1.0	< 1.0	< 1.0
Boron (dissolved)	µg/l	10	ISO 17025	35	86	11	< 10	25
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.3	< 0.4	< 0.4	< 0.4	0.5
Copper (dissolved)	µg/l	0.7	ISO 17025	20	21	11	13	18
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	1	1.2	< 1.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1	1.3	0.6	0.3	0.8
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	4.6	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	17	32	6.9	16	26
Calcium (dissolved)	mg/l	0.012	ISO 17025	6.1	9.2	4.5	33	130
Magnesium (dissolved)	mg/l	0.005	ISO 17025	0.9	1.5	0.58	1	1.9

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Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.40	0.20-0.30	0.30-0.40	0.15-0.25	0.30-0.40
Date Sampled				12/07/2023	12/07/2023	12/07/2023	12/07/2023	12/07/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6## $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8## $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10## $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)## $_{HS+EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

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

Analytical Report Number : 23-49206
Project / Site name: Gravelly Bottom Road - Kingswood

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Total Hardness of leachates	Determination of hardness in leachates by calculation from calcium and magnesium.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	NONE
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
pH at 20oC in leachate (automated)	Determination of pH in leachate by electrometric measurement.	In house method.	L099B	W	ISO 17025
TPHCWG (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	ISO 17025
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in leachate	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
BTEX and MTBE in leachates (Monoaromatics)	Determination of BTEX and MTBE in leachates by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

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Analytical Report Number : 23-49206
Project / Site name: Gravelly Bottom Road - Kingswood

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

RETURN

APPENDIX D: Assessment Tables

HUMAN HEALTH QUANTITATIVE RISK ASSESSMENT - SOILS
MADE GROUND
4728
Gravelly Bottom Road - Kingswood

LUSTRE CONSULTING

Assessment Scenario: Commercial
Assessment Criteria Source: SGVs, GACs and S4ULs
Soil Organic Matter (%): SOM = 1%

								Sample Ref	*2747335*	*2747336*	*2747337*	*2747339*	*2747341*	*2747343*	*2747345*
DETERMINAND	**UNITS**	**MINIMUM**	**AVERAGE**	**MAXIMUM**	**No. of TESTS**	**ASSESSMENT CRITERIA**	**No. > AC**		*TP2*	*TP2*	*TP1*	*TP6*	*TP3*	*TP4*	*TP5*
									0.10-0.20	*0.30-0.40*	*0.20-0.30*	*0.20-0.30*	*0.30-0.40*	*0.15-0.25*	*0.30-0.40*
Asbestos in Soil	N/A	N/A	N/A	N/A	7	Detected	0		Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
pH - Automated	no units	6.60	7.87	8.80	7	No Criteria	0		7.9	8.4	8.1	8.5	8.8	6.8	6.6
Total Cyanide	mg/kg	<LOD	<LOD	<LOD	7	53.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Arsenic	mg/kg	11.00	15.29	20.00	7	640.00	0		11	16	15	14	20	17	14
Cadmium	mg/kg	<LOD	0.46	1.00	7	190.00	0		1	1	<LOD	<LOD	<LOD	<LOD	<LOD
Chromium	mg/kg	22.00	30.29	37.00	7	8600.00	0		30	33	22	32	28	37	30
Copper	mg/kg	8.90	23.56	37.00	7	68000.00	0		26	24	24	37	8.9	26	19
Lead	mg/kg	17.00	42.57	76.00	7	2330.00	0		76	61	49	39	32	17	24
Mercury	mg/kg	<LOD	<LOD	<LOD	7	3600.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Nickel	mg/kg	12.00	14.86	20.00	7	980.00	0		15	15	13	15	12	20	14
Selenium	mg/kg	<LOD	<LOD	<LOD	7	12000.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Zinc	mg/kg	86.00	225.14	390.00	7	730000.00	0		320	320	390	140	86	130	190
Naphthalene	mg/kg	<LOD	0.16	0.64	7	190.00	0		0.64	0.26	<LOD	<LOD	<LOD	<LOD	<LOD
Acenaphthylene	mg/kg	<LOD	0.31	1.30	7	83000.00	0		1.3	0.62	<LOD	<LOD	<LOD	<LOD	<LOD
Acenaphthene	mg/kg	<LOD	0.57	2.90	7	84000.00	0		2.9	0.86	<LOD	<LOD	<LOD	<LOD	<LOD
Fluorene	mg/kg	<LOD	0.56	2.80	7	63000.00	0		2.8	0.87	<LOD	<LOD	<LOD	<LOD	<LOD
Phenanthrene	mg/kg	<LOD	5.55	30.00	7	22000.00	0		30	8.2	0.15	0.18	0.17	<LOD	0.1
Anthracene	mg/kg	<LOD	1.86	9.90	7	520000.00	0		9.9	2.9	<LOD	<LOD	<LOD	<LOD	<LOD
Fluoranthene	mg/kg	0.06	8.61	45.00	7	23000.00	0		45	14	0.31	0.37	0.44	0.06	0.11
Pyrene	mg/kg	0.07	7.33	38.00	7	54000.00	0		38	12	0.3	0.36	0.45	0.07	0.11
Benzo(a)anthracene	mg/kg	<LOD	3.72	19.00	7	170.00	0		19	6.3	0.16	0.18	0.28	<LOD	<LOD
Chrysene	mg/kg	<LOD	3.54	18.00	7	350.00	0		18	5.9	0.29	0.21	0.28	<LOD	<LOD
Benzo(b)fluoranthene	mg/kg	<LOD	4.25	21.00	7	44.00	0		21	7.7	0.38	0.28	0.29	<LOD	<LOD
Benzo(k)fluoranthene	mg/kg	<LOD	1.69	8.20	7	1200.00	0		8.2	3.2	0.12	0.12	0.09	<LOD	<LOD
Benzo(a)pyrene	mg/kg	<LOD	3.84	19.00	7	35.00	0		19	7.2	0.23	0.16	0.18	<LOD	<LOD
Indeno(1,2,3-cd)pyrene	mg/kg	<LOD	2.07	10.00	7	500.00	0		10	4	0.15	0.13	0.12	<LOD	<LOD
Dibenz(a,h)anthracene	mg/kg	<LOD	0.50	2.30	7	3.50	0		2.3	0.97	<LOD	<LOD	<LOD	<LOD	<LOD
Benzo(ghi)perylene	mg/kg	<LOD	2.15	10.00	7	3900.00	0		10	4.4	0.18	0.2	0.14	<LOD	<LOD
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	<LOD	<LOD	<LOD	7	3200.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	<LOD	<LOD	<LOD	7	7800.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	<LOD	<LOD	<LOD	7	2000.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	<LOD	<LOD	<LOD	7	9700.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	<LOD	1.46	7.20	7	59000.00	0		7.2	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	<LOD	2.29	13.00	7	800000.00	0		13	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	<LOD	25.29	110.00	7	800000.00	0		110	52	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	<LOD	<LOD	<LOD	7	26000.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	<LOD	<LOD	<LOD	7	56000.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	<LOD	<LOD	<LOD	7	3500.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	<LOD	2.57	15.00	7	16000.00	0		15	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	<LOD	5.94	34.00	7	36000.00	0		34	5.1	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	<LOD	24.64	130.00	7	14000.00	0		130	40	<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	<LOD	103.57	480.00	7	14000.00	0		480	230	<LOD	<LOD	<LOD	<LOD	<LOD
Benzene	mg/kg	<LOD	<LOD	<LOD	7	27.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Toluene	mg/kg	<LOD	<LOD	<LOD	7	56000.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Ethylbenzene	mg/kg	<LOD	<LOD	<LOD	7	5700.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
p & m-xylene	mg/kg	<LOD	<LOD	<LOD	7	5900.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
o-Xylene	mg/kg	<LOD	<LOD	<LOD	7	6600.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Total Phenols (monohydric)	mg/kg	<LOD	<LOD	<LOD	7	440.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	<LOD	<LOD	<LOD	7	7900.00	0		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.04	0.31	1.60	7	No Criteria	0		0.084	0.036	0.15	0.08	0.065	0.12	1.6

HUMAN HEALTH QUANTITATIVE RISK ASSESSMENT - SOILS
NATURAL GROUND
4728
Gravelly Bottom Road - Kingswood

LUSTRE CONSULTING

Assessment Scenario: Commercial
Assessment Criteria Source: SGVs, GACs and S4ULs
Soil Organic Matter (%): SOM = 1%

DETERMINAND	UNITS	MINIMUM	AVERAGE	MAXIMUM	No. of TESTS	Sample Ref / ASSESSMENT CRITERIA	No. > AC	2747338 TP1 0.70-0.80	2747340 TP6 0.60-0.70	2747342 TP3 0.50-0.60	2747344 TP4 0.70-0.80	2747346 TP5 0.90-1.00	
Asbestos in Soil	N/A	N/A	N/A	N/A	5	Detected	0	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	
pH - Automated	no units	4.90	6.74	7.90	5	No Criteria	0	7.6	7.4	7.9	4.9	5.9	
Total Cyanide	mg/kg	<LOD	<LOD	<LOD	5	53.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Arsenic	mg/kg	16.00	23.20	26.00	5	640.00	0	25	26	16	25	24	
Cadmium	mg/kg	<LOD	<LOD	<LOD	5	190.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Chromium	mg/kg	42.00	56.40	65.00	5	8600.00	0	53	61	42	65	61	
Copper	mg/kg	7.80	14.96	18.00	5	68000.00	0	18	16	7.8	17	16	
Lead	mg/kg	11.00	15.40	24.00	5	2330.00	0	24	11	11	15	16	
Mercury	mg/kg	<LOD	<LOD	<LOD	5	3600.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Nickel	mg/kg	23.00	30.80	38.00	5	980.00	0	27	38	23	30	36	
Selenium	mg/kg	<LOD	<LOD	<LOD	5	12000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Zinc	mg/kg	41.00	99.20	170.00	5	730000.00	0	170	70	41	65	150	
Naphthalene	mg/kg	<LOD	<LOD	<LOD	5	190.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Acenaphthylene	mg/kg	<LOD	<LOD	<LOD	5	83000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Acenaphthene	mg/kg	<LOD	<LOD	<LOD	5	84000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Fluorene	mg/kg	<LOD	<LOD	<LOD	5	63000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Phenanthrene	mg/kg	<LOD	0.06	0.09	5	22000.00	0	0.06	<LOD	<LOD	<LOD	0.09	
Anthracene	mg/kg	<LOD	<LOD	<LOD	5	520000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Fluoranthene	mg/kg	<LOD	0.06	0.08	5	23000.00	0	0.08	<LOD	<LOD	<LOD	0.08	
Pyrene	mg/kg	<LOD	0.07	0.12	5	54000.00	0	0.12	<LOD	<LOD	<LOD	0.07	
Benzo(a)anthracene	mg/kg	<LOD	<LOD	<LOD	5	170.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Chrysene	mg/kg	<LOD	0.05	0.07	5	350.00	0	0.07	<LOD	<LOD	<LOD	<LOD	
Benzo(b)fluoranthene	mg/kg	<LOD	<LOD	<LOD	5	44.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Benzo(k)fluoranthene	mg/kg	<LOD	<LOD	<LOD	5	1200.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Benzo(a)pyrene	mg/kg	<LOD	<LOD	<LOD	5	35.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Indeno(1,2,3-cd)pyrene	mg/kg	<LOD	<LOD	<LOD	5	500.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Dibenz(a,h)anthracene	mg/kg	<LOD	<LOD	<LOD	5	3.50	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Benzo(ghi)perylene	mg/kg	<LOD	<LOD	<LOD	5	3900.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	<LOD	<LOD	<LOD	5	3200.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	<LOD	<LOD	<LOD	5	7800.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	<LOD	<LOD	<LOD	5	2000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	<LOD	1.24	4.20	5	9700.00	0	<LOD	<LOD	<LOD	<LOD	4.2	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	<LOD	1.68	6.40	5	59000.00	0	<LOD	<LOD	<LOD	<LOD	6.4	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	<LOD	<LOD	<LOD	5	800000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	<LOD	<LOD	<LOD	5	800000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	<LOD	<LOD	<LOD	5	26000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	<LOD	<LOD	<LOD	5	56000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	<LOD	<LOD	<LOD	5	3500.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	<LOD	<LOD	<LOD	5	16000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	<LOD	<LOD	<LOD	5	36000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	<LOD	<LOD	<LOD	5	14000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	<LOD	<LOD	<LOD	5	14000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Benzene	mg/kg	<LOD	<LOD	<LOD	5	27.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Toluene	mg/kg	<LOD	<LOD	<LOD	5	56000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Ethylbenzene	mg/kg	<LOD	<LOD	<LOD	5	5700.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
p & m-xylene	mg/kg	<LOD	<LOD	<LOD	5	5900.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
o-Xylene	mg/kg	<LOD	<LOD	<LOD	5	6600.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Total Phenols (monohydric)	mg/kg	<LOD	<LOD	<LOD	5	440.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	<LOD	<LOD	<LOD	5	7900.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	<LOD	<LOD	<LOD	5	7900.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Benzene	mg/kg	<LOD	<LOD	<LOD	5	27.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Toluene	mg/kg	<LOD	<LOD	<LOD	5	56000.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
o-Xylene	mg/kg	<LOD	<LOD	<LOD	5	6600.00	0	<LOD	<LOD	<LOD	<LOD	<LOD	
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.01	0.17	0.40	5	No Criteria	0	0.35	0.037	0.0075	0.047	0.4	

CONTROLLED WATERS RISK ASSESSMENT

4728

Gravelly Bottom Road - Kingswood

Water Quality Standard (WQS) Selection Hierarchy:	
Level 1	UK DWS
Level 2	EQS FW
Level 3	WHO DWS

Average $CaCO_3$:

93940 µg/l

Data Source: Environment Agency H1 Environmental Risk Assessment – Annex J, v2.0, April 2010 & Petroleum Products in Drinking-Water, WHO (WHO/SDE/WSH/05.08/123)

											Sample Ref				*2747347*	*2747348*	*2747349*	*2771693*	*2771694*	*2771695*	*2771696*	*2771697*
DETERMINAND	**UNITS**	**MINIMUM**	**AVERAGE**	**MAXIMUM**	**No. of TESTS**	**UK DWS**	**No. > AC**	**EQS FW**	**No. > AC**	**WHO**	**No. > AC**				**TP2**	**TP4**	**TP5**	**TP2**	**TP1**	**TP3**	***TP4***	***TP5***
															07/12/2023	*07/12/2023*	*07/12/2023*	*07/12/2023*	*07/12/2023*	*07/12/2023*	*07/12/2023*	*07/12/2023*
Total Cyanide	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
Sulphate as SO_4	µg/l	2	56	255	5	250000	0	400000	0	250000	0							3.6	6.6	2	13.2	255
Hardness - Total	mg/l	13.50	93.94	321.00	5	No criteria	0	No criteria	0	No criteria	0							18.8	29.2	13.5	87.2	321
Total Organic Carbon (TOC)	µg/l	6.21	9.50	12.40	5	No criteria	0	No criteria	0	No criteria	0							10.6	8.38	6.21	9.92	12.4
Arsenic (dissolved)	µg/l	1.60	3.40	5.20	5	10.00	0	50.00	0	10.00	0							5.2	1.6	<LOD	<LOD	<LOD
Copper (dissolved)	µg/l	11.00	16.60	21.00	5	2000.00	0	200.00	0	2000.00	0							20	21	11	13	18
Lead (dissolved)	µg/l	1.00	1.10	1.20	5	10.00	0	250.00	0	10.00	0							<LOD	<LOD	1	1.2	<LOD
Mercury (dissolved)	µg/l	<LOD	<LOD	<LOD	5	1.00	0	1.00	0	1.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
Nickel (dissolved)	µg/l	0.30	0.80	1.30	5	20.00	0	28.00	0	20.00	0							1	1.3	0.6	0.3	0.8
Selenium (dissolved)	µg/l	4.60	4.60	4.60	5	10.00	0	No criteria	0	10.00	0							<LOD	4.6	<LOD	<LOD	<LOD
Zinc (dissolved)	µg/l	6.90	19.58	32.00	5	5000.00	0	500.00	0	3000.00	0							17	32	6.9	16	26
Total Phenols (monohydric)	µg/l	<LOD	<LOD	<LOD	5	0.50	0	30.00	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH C10 - C40	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	300.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >C10 - C12	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	300.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >C12 - C16	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	300.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >C16 - C21	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	300.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >C21 - C35	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	300.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >C5 - C6	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	15000.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >C6 - C8	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	15000.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aliphatic >C8 - C10	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	300.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >C10 - C12	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	100.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >C12 - C16	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	100.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >C16 - C21	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	90.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >C21 - C35	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	90.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >C5 - C7	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	10.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >C7 - C8	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	50.00	0	300.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
TPH-CWG - Aromatic >C8 - C10	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	20.00	0	300.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
Anthracene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	0.02	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
Fluoranthene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	0.02	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
Naphthalene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	10.00	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
Benzo(a)pyrene	µg/l	<LOD	<LOD	<LOD	5	0.01	0	0.03	0	0.70	0							<LOD	<LOD	<LOD	<LOD	<LOD
Benzo(b)fluoranthene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
Benzo(ghi)perylene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
Benzo(k)fluoranthene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
Indeno(1,2,3-cd)pyrene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
MTBE (Methyl Tertiary Butyl Ether)	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
Benzene	µg/l	<LOD	<LOD	<LOD	5	1.00	0	30.00	0	10.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
Ethylbenzene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	300.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
Toluene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	50.00	0	700.00	0							<LOD	<LOD	<LOD	<LOD	<LOD
p & m-xylene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD
o-xylene	µg/l	<LOD	<LOD	<LOD	5	No criteria	0	No criteria	0	No criteria	0							<LOD	<LOD	<LOD	<LOD	<LOD

PHYTOTOXICITY RISK ASSESSMENT

4728

Gravelly Bottom Road - Kingswood

Risk Criteria: British Standard BS 3882:2007 (Specification for topsoil and requirements for use)

TABLE SHOWING PHYTOTOXICITY ASSESSMENT FOR MADE GROUND

DETERMINAND	UNITS	MINIMUM	AVERAGE	MAXIMUM	No. of TESTS	ASSESSMENT CRITERIA	No. > AC	DETAILS
Copper	mg/kg	8.90	-	37.00	7	200.00	0	-
Nickel	mg/kg	12.00	-	20.00	7	110.00	0	-
Zinc	mg/kg	86.00	225.14	390.00	7	300.00	3	TP2 (0.10-0.20 m bgl) at 320mg/kg, TP2 (0.30-0.40 m bgl) at 320mg/kg, TP1 (0.20-0.30 m bgl) at 390mg/kg

TABLE SHOWING PHYTOTOXICITY ASSESSMENT FOR NATURAL GROUND

DETERMINAND	UNITS	MINIMUM	AVERAGE	MAXIMUM	No. of TESTS	ASSESSMENT CRITERIA	No. > AC	DETAILS
Copper	mg/kg	7.80	-	18.00	5	200.00	0	-
Nickel	mg/kg	23.00	-	38.00	5	110.00	0	-
Zinc	mg/kg	41.00	-	170.00	5	300.00	0	-

POTABLE WATER PIPELINE RISK ASSESSMENT

4728

Gravelly Bottom Road - Kingswood

TABLE SHOWING WATER PIPELINE ASSESSMENT

DETERMINAND	UNITS	THRESHOLD		THRESHOLD		MAXIMUM CONCENTRATION
		PE	EXCEEDED	PVC	EXCEEDED	
GROUP 1						
Total VOC (with TICs)*	µg/kg	500.00	NO	125.00	NO	<LOD
BTEX & MTBE	µg/kg	100.00	NO	30.00	NO	<LOD
GROUP 2						
**Total SVOC Suite (with TIC)	mg/kg	2.00	NO	1.40	NO	
Phenols	mg/kg	2.00	NO	0.40	NO	
Cresols & Chlorinated Phenols	mg/kg	2.00	NO	0.04	NO	
†Ethers	mg/kg	0.50	-	1.00	-	
†Nitrobenzene	mg/kg	0.50	-	0.40	-	
†Ketones	mg/kg	0.50	-	0.02	-	
†Aldehydes	mg/kg	0.50	-	0.02	-	
GROUP 3						
Mineral Oils (C11 to C20)	mg/kg	10.00	YES	No effect	NO	130.00
GROUP 4						
Mineral Oils (C21 to C40)	mg/kg	500.00	NO	No effect	NO	480.00
GROUP 5^						
Conductivity	µ2/cm	-	-	-	-	-
Redox Potential	mV	-	-	-	-	-
pH	-	-		-		-
GROUP 6						
†Amines	ug/kg	N/A	-	No effect	-	-

NOTES:

*Minus total concentration of BTEX + MTBE.

**Minus total concentration of phenols, cresols and chlorinated phenols.

†Only required if current or historical site use indicates they may be present.

^Only applicable when selecting suitable barrier pipe (see UKWIR Guidance document)

RISK CRITERIA:

UK Water Industry Research (UKWIR). Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites. Ref. 10/WM/03/21. 2010

BURIED CONCRETE ASSESSMENT

4728

Gravelly Bottom Road - Kingswood

TABLE SHOWING BURIED CONCRETE ASSESSMENT

SOIL GROUP	DETERMINAND	UNITS	NO. OF TESTS	MIN	MAX	CHARACTERISTIC VALUE	BRE CLASSIFICATION
MADE GROUND	Total Potential Sulfate	%	-	-	-	-	DS1
	Water Soluble Sulphate as SO4	g/l	7	0.04	1.60	1.600	
	pH	-	7	6.6	8.8	6.6	AC-1s
NATURAL GROUND	Total Potential Sulfate	%	-	-	-	-	DS1
	Water Soluble Sulphate as SO4	g/l	5	0.01	0.40	0.400	
	pH	-	5	4.9	7.9	4.9	AC-1s
GROUNDWATER	Sulphate as SO4	g/l	5	0.00	0.26	0.26	DS1
	pH	-	0				AC-1d

OTHER FACTORS CONSIDERED:

Pyritic soils (Made Ground) have not been encountered or considered in this assessment.

Pyritic soils (Natural Ground) have not been encountered in this assessment.

GENERAL NOTES:

The Characteristic Value is based on lowest pH value / highest SO4.

Where the DS Class if different for soluble sulphates and total potential sulphates, the highest DS Class is adopted in accordance with BRE Special Digest 1:2005, 3rd Edition, 'Concrete in Aggressive Ground.' However, if the assessment of TPS is not appropriate (owing to low oxidisable sulphates) only the soluble sulphates have been considered.

LUSTRE CONSULTING

HazWasteOnline™

Waste Classification Report

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

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

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

DB0UY-4TK88-E0RP4

Job name

23-44839_HWOL_Results

Description/Comments

Project

4728

Site

Gravelly Bottom Road

Classified by

Name:
Gemma Heyworth
Company:
Lustre Consulting
Date:
15 Aug 2023 10:29 GMT
Telephone:
01634 757 705

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

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	06 Oct 2022

Next 3 year Refresher due by Oct 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Gravelly Bottom Road, Kingswood, Kent **Post Code** ME17 3NU

SIC for the process giving rise to the waste

43110 Demolition

Description of industry/producer giving rise to the waste

Redevelopment of derelict industrial site

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

Waste created by foundation excavations

Description of the waste

Made Ground

Job summary

Related documents

#	Name	Description
1	23-44839_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	Contaminated Soils including Acid / Alkali Reserve	waste stream template used to create this Job

Report

Created by: Gemma Heyworth

Created date: 15 Aug 2023 10:29 GMT

Classification of sample: TP2-D1-12072023-0.10

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

Sample details

Sample name:
TP2-D1-12072023-0.10
Moisture content:
6.6%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 6.6% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11 mg/kg	1.32	13.565 mg/kg	0.00136 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.504 mg/kg	0.00015 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	1.067 mg/kg	0.000107 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		30 mg/kg	1.462	40.953 mg/kg	0.0041 %	✓	
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		26 mg/kg	1.126	27.341 mg/kg	0.00273 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	76 mg/kg		70.984 mg/kg	0.0071 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
9	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		15 mg/kg	1.545	21.648 mg/kg	0.00216 %	✓	
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
11	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		320 mg/kg	1.245	372.02 mg/kg	0.0372 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		790 mg/kg		737.86 mg/kg	0.0738 %	✓	
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.9	pH		7.9	pH	7.9 pH		
				PH									
20		naphthalene				0.64	mg/kg		0.598	mg/kg	0.0000598 %	✓	
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				1.3	mg/kg		1.214	mg/kg	0.000121 %	✓	
			205-917-1	208-96-8									
22		acenaphthene				2.9	mg/kg		2.709	mg/kg	0.000271 %	✓	
			201-469-6	83-32-9									
23		fluorene				2.8	mg/kg		2.615	mg/kg	0.000262 %	✓	
			201-695-5	86-73-7									
24		phenanthrene				30	mg/kg		28.02	mg/kg	0.0028 %	✓	
			201-581-5	85-01-8									
25		anthracene				9.9	mg/kg		9.247	mg/kg	0.000925 %	✓	
			204-371-1	120-12-7									
26		fluoranthene				45	mg/kg		42.03	mg/kg	0.0042 %	✓	
			205-912-4	206-44-0									
27		pyrene				38	mg/kg		35.492	mg/kg	0.00355 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				19	mg/kg		17.746	mg/kg	0.00177 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				18	mg/kg		16.812	mg/kg	0.00168 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				21	mg/kg		19.614	mg/kg	0.00196 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				8.2	mg/kg		7.659	mg/kg	0.000766 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				19	mg/kg		17.746	mg/kg	0.00177 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				10	mg/kg		9.34	mg/kg	0.000934 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				2.3	mg/kg		2.148	mg/kg	0.000215 %	✓	
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				10	mg/kg		9.34	mg/kg	0.000934 %	✓	
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
37		potassium { potassium cyanate }				1700	mg/kg	2.075	3294.122	mg/kg	0.329 %	✓	
		615-016-00-9	209-676-3	590-28-3									
										Total:	0.481 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because HP3 Flammable has been discounted as a viable Hazardous Property as the soils considered within this assessment are a solid waste without a free draining liquid phase. Advice from the laboratory indicates that testing for flammability was not appropriate due to the low level of TPH. The waste does not display this hazardous property.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0738%)

Classification of sample: TP2-D1-12072023-0.30

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

Sample details

Sample name:
TP2-D1-12072023-0.30
Moisture content:
8.4%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8.4% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16 mg/kg	1.32	19.351 mg/kg	0.00194 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.9 mg/kg	3.22	5.604 mg/kg	0.00056 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	1.046 mg/kg	0.000105 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		33 mg/kg	1.462	44.18 mg/kg	0.00442 %	✓	
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24 mg/kg	1.126	24.752 mg/kg	0.00248 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	61 mg/kg		55.876 mg/kg	0.00559 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
9	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		15 mg/kg	1.545	21.231 mg/kg	0.00212 %	✓	
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
11	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		320 mg/kg	1.245	364.851 mg/kg	0.0365 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		332 mg/kg		304.112 mg/kg	0.0304 %	✓	
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
		006-007-00-5											
19		pH				8.4	pH		8.4	pH	8.4 pH		
				PH									
20		naphthalene				0.26	mg/kg		0.238	mg/kg	0.0000238 %	✓	
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.62	mg/kg		0.568	mg/kg	0.0000568 %	✓	
			205-917-1	208-96-8									
22		acenaphthene				0.86	mg/kg		0.788	mg/kg	0.0000788 %	✓	
			201-469-6	83-32-9									
23		fluorene				0.87	mg/kg		0.797	mg/kg	0.0000797 %	✓	
			201-695-5	86-73-7									
24		phenanthrene				8.2	mg/kg		7.511	mg/kg	0.000751 %	✓	
			201-581-5	85-01-8									
25		anthracene				2.9	mg/kg		2.656	mg/kg	0.000266 %	✓	
			204-371-1	120-12-7									
26		fluoranthene				14	mg/kg		12.824	mg/kg	0.00128 %	✓	
			205-912-4	206-44-0									
27		pyrene				12	mg/kg		10.992	mg/kg	0.0011 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				6.3	mg/kg		5.771	mg/kg	0.000577 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				5.9	mg/kg		5.404	mg/kg	0.00054 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				7.7	mg/kg		7.053	mg/kg	0.000705 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				3.2	mg/kg		2.931	mg/kg	0.000293 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				7.2	mg/kg		6.595	mg/kg	0.00066 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				4	mg/kg		3.664	mg/kg	0.000366 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.97	mg/kg		0.889	mg/kg	0.0000889 %	✓	
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				4.4	mg/kg		4.03	mg/kg	0.000403 %	✓	
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
				P1186									
										Total:	0.0924 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because HP3 Flammable has been discounted as a viable Hazardous Property as the soils considered within this assessment are a solid waste without a free draining liquid phase. Advice from the laboratory indicates that testing for flammability was not appropriate due to the low level of TPH. The waste does not display this hazardous property.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0304%)

Classification of sample: TP1-D1-12072023-0.20

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

Sample details

Sample name:
TP1-D1-12072023-0.20
Moisture content:
13%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15 mg/kg	1.32	17.23 mg/kg	0.00172 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		2.1 mg/kg	3.22	5.883 mg/kg	0.000588 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		22 mg/kg	1.462	27.974 mg/kg	0.0028 %	✓	
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24 mg/kg	1.126	23.509 mg/kg	0.00235 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	49 mg/kg		42.63 mg/kg	0.00426 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
9	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		13 mg/kg	1.545	17.476 mg/kg	0.00175 %	✓	
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
11	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		390 mg/kg	1.245	422.331 mg/kg	0.0422 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<20 mg/kg		<20 mg/kg	<0.002 %		<LOD
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				0.15	mg/kg		0.13	mg/kg	0.000013 %	✓	
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				0.31	mg/kg		0.27	mg/kg	0.000027 %	✓	
			205-912-4	206-44-0									
27		pyrene				0.3	mg/kg		0.261	mg/kg	0.0000261 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				0.16	mg/kg		0.139	mg/kg	0.0000139 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.29	mg/kg		0.252	mg/kg	0.0000252 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.38	mg/kg		0.331	mg/kg	0.0000331 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.12	mg/kg		0.104	mg/kg	0.0000104 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.23	mg/kg		0.2	mg/kg	0.00002 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.15	mg/kg		0.13	mg/kg	0.000013 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				0.18	mg/kg		0.157	mg/kg	0.0000157 %	✓	
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
										Total:	0.0589 %		

Key

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

Classification of sample: TP1-D2-12072023-0.70

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

Sample details

Sample name:
TP1-D2-12072023-0.70
Moisture content:
18%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		25 mg/kg	1.32	27.067 mg/kg	0.00271 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.4 mg/kg	3.22	3.696 mg/kg	0.00037 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		53 mg/kg	1.462	63.519 mg/kg	0.00635 %	✓	
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		18 mg/kg	1.126	16.618 mg/kg	0.00166 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	24 mg/kg		19.68 mg/kg	0.00197 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
9	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		27 mg/kg	1.545	34.21 mg/kg	0.00342 %	✓	
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
11	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		170 mg/kg	1.245	173.513 mg/kg	0.0174 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<20 mg/kg		<20 mg/kg	<0.002 %		<LOD
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.6	pH		7.6	pH	7.6 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				0.06	mg/kg		0.0492	mg/kg	0.00000492 %	✓	
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				0.08	mg/kg		0.0656	mg/kg	0.00000656 %	✓	
			205-912-4	206-44-0									
27		pyrene				0.12	mg/kg		0.0984	mg/kg	0.00000984 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.07	mg/kg		0.0574	mg/kg	0.00000574 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
										Total:	0.0369 %		

Key

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

Classification of sample: TP6-D1-12072023-0.20

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

Sample details

Sample name:
TP6-D1-12072023-0.20
Moisture content:
9.6%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.6% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14 mg/kg	1.32	16.71 mg/kg	0.00167 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.455 mg/kg	0.000146 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		32 mg/kg	1.462	42.28 mg/kg	0.00423 %	✓	
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37 mg/kg	1.126	37.659 mg/kg	0.00377 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	39 mg/kg		35.256 mg/kg	0.00353 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
9	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		15 mg/kg	1.545	20.953 mg/kg	0.0021 %	✓	
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
11	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		140 mg/kg	1.245	157.531 mg/kg	0.0158 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<20 mg/kg		<20 mg/kg	<0.002 %		<LOD
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				8.5	pH		8.5	pH	8.5 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				0.18	mg/kg		0.163	mg/kg	0.0000163 %	✓	
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				0.37	mg/kg		0.334	mg/kg	0.0000334 %	✓	
			205-912-4	206-44-0									
27		pyrene				0.36	mg/kg		0.325	mg/kg	0.0000325 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				0.18	mg/kg		0.163	mg/kg	0.0000163 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.21	mg/kg		0.19	mg/kg	0.000019 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.28	mg/kg		0.253	mg/kg	0.0000253 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.12	mg/kg		0.108	mg/kg	0.0000108 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.16	mg/kg		0.145	mg/kg	0.0000145 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.13	mg/kg		0.118	mg/kg	0.0000118 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				0.2	mg/kg		0.181	mg/kg	0.0000181 %	✓	
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
										Total:	0.0344 %		

Key

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

Classification of sample: TP6-D2-12072023-0.60

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

Sample details

Sample name:
TP6-D2-12072023-0.60
Moisture content:
19%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 19% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		26 mg/kg	1.32	27.806 mg/kg	0.00278 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.4 mg/kg	3.22	1.043 mg/kg	0.000104 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		61 mg/kg	1.462	72.215 mg/kg	0.00722 %	✓	
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16 mg/kg	1.126	14.592 mg/kg	0.00146 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	11 mg/kg		8.91 mg/kg	0.000891 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
9	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		38 mg/kg	1.545	47.561 mg/kg	0.00476 %	✓	
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
11	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		70 mg/kg	1.245	70.575 mg/kg	0.00706 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<20 mg/kg		<20 mg/kg	<0.002 %		<LOD
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.4	pH		7.4	pH	7.4 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
27		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
										Total:	0.0274 %		

Key

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

Classification of sample: TP3-D1-12072023-0.30

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

Sample details

Sample name:
TP3-D1-12072023-0.30
Moisture content:
5.1%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 5.1% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		20 mg/kg	1.32	25.06 mg/kg	0.00251 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.528 mg/kg	0.000153 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		28 mg/kg	1.462	38.836 mg/kg	0.00388 %	✓	
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		8.9 mg/kg	1.126	9.509 mg/kg	0.000951 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	32 mg/kg		30.368 mg/kg	0.00304 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
9	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		12 mg/kg	1.545	17.597 mg/kg	0.00176 %	✓	
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
11	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		86 mg/kg	1.245	101.586 mg/kg	0.0102 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<20 mg/kg		<20 mg/kg	<0.002 %		<LOD
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				8.8	pH		8.8	pH	8.8 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				0.17	mg/kg		0.161	mg/kg	0.0000161 %	✓	
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				0.44	mg/kg		0.418	mg/kg	0.0000418 %	✓	
			205-912-4	206-44-0									
27		pyrene				0.45	mg/kg		0.427	mg/kg	0.0000427 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				0.28	mg/kg		0.266	mg/kg	0.0000266 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.28	mg/kg		0.266	mg/kg	0.0000266 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.29	mg/kg		0.275	mg/kg	0.0000275 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.09	mg/kg		0.0854	mg/kg	0.00000854 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.18	mg/kg		0.171	mg/kg	0.0000171 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.12	mg/kg		0.114	mg/kg	0.0000114 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				0.14	mg/kg		0.133	mg/kg	0.0000133 %	✓	
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
										Total:	0.0257 %		

Key

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

Classification of sample: TP3-D2-12072023-0.50

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

Sample details

Sample name:
TP3-D2-12072023-0.50
Moisture content:
11%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	18.801	mg/kg	0.00188 %	✓	
2		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.3	mg/kg	3.22	3.725	mg/kg	0.000373 %	✓	
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		42	mg/kg	1.462	54.633	mg/kg	0.00546 %	✓	
5		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<**LOD**
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		7.8	mg/kg	1.126	7.816	mg/kg	0.000782 %	✓	
7		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	11	mg/kg		9.79	mg/kg	0.000979 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
9		nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		23	mg/kg	1.545	31.63	mg/kg	0.00316 %	✓	
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
11		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		41	mg/kg	1.245	45.42	mg/kg	0.00454 %	✓	
12		TPH (C6 to C40) petroleum group			TPH		<20	mg/kg		<20	mg/kg	<0.002 %		<**LOD**
13		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
14		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				7.9	pH		7.9	pH	7.9 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
27		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
										Total:	0.0203 %		

Key

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

Classification of sample: TP4-D1-12072023-0.15

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

Sample details

Sample name:
TP4-D1-12072023-0.15
Moisture content:
6%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 6% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17 mg/kg	1.32	21.099 mg/kg	0.00211 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.2 mg/kg	3.22	0.605 mg/kg	0.0000605 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		37 mg/kg	1.462	50.833 mg/kg	0.00508 %	✓	
5	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		26 mg/kg	1.126	27.517 mg/kg	0.00275 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	17 mg/kg		15.98 mg/kg	0.0016 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<**LOD**
9	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		20 mg/kg	1.545	29.049 mg/kg	0.0029 %	✓	
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
11	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		130 mg/kg	1.245	152.104 mg/kg	0.0152 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<20 mg/kg		<20 mg/kg	<0.002 %		<**LOD**
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
17		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
19		pH			PH		6.8	pH		6.8	pH	6.8 pH		
20		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
21		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
22		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
23		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
24		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
25		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		fluoranthene		205-912-4	206-44-0		0.06	mg/kg		0.0564	mg/kg	0.00000564 %	✓	
27		pyrene		204-927-3	129-00-0		0.07	mg/kg		0.0658	mg/kg	0.00000658 %	✓	
28		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
29		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
31		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
33		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
34		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
35		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
36		monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
37		potassium { potassium cyanate }	615-016-00-9	209-676-3	590-28-3		3300	mg/kg	2.075	6435.549	mg/kg	0.644 %	✓	
											Total:	0.676 %		

Key

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

Classification of sample: TP4-D2-12072023-0.70

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

Sample details

Sample name:
TP4-D2-12072023-0.70
Moisture content:
18%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		25	mg/kg	1.32	27.067	mg/kg	0.00271 %	✓	
2		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.5	mg/kg	3.22	1.32	mg/kg	0.000132 %	✓	
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		65	mg/kg	1.462	77.901	mg/kg	0.00779 %	✓	
5		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<**LOD**
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17	mg/kg	1.126	15.695	mg/kg	0.00157 %	✓	
7		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	15	mg/kg		12.3	mg/kg	0.00123 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
9		nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		30	mg/kg	1.545	38.012	mg/kg	0.0038 %	✓	
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
11		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		65	mg/kg	1.245	66.343	mg/kg	0.00663 %	✓	
12		TPH (C6 to C40) petroleum group			TPH		<20	mg/kg		<20	mg/kg	<0.002 %		<**LOD**
13		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
14		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				4.9	pH		4.9	pH	4.9 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
27		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
										Total:	0.027 %		

Key

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

Classification of sample: TP5-D1-12072023-0.30

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

Sample details

Sample name:
TP5-D1-12072023-0.30
Moisture content:
7.4%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.4% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14	mg/kg	1.32	17.117	mg/kg	0.00171 %	✓	
2		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.8	mg/kg	3.22	2.385	mg/kg	0.000239 %	✓	
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		30	mg/kg	1.462	40.602	mg/kg	0.00406 %	✓	
5		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<LOD
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		19	mg/kg	1.126	19.809	mg/kg	0.00198 %	✓	
7		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	24	mg/kg		22.224	mg/kg	0.00222 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
9		nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		14	mg/kg	1.545	20.032	mg/kg	0.002 %	✓	
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
11		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		190	mg/kg	1.245	218.995	mg/kg	0.0219 %	✓	
12		TPH (C6 to C40) petroleum group			TPH		<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
13		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
14		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				6.6	pH		6.6	pH	6.6 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				0.1	mg/kg		0.0926	mg/kg	0.00000926 %	✓	
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				0.11	mg/kg		0.102	mg/kg	0.0000102 %	✓	
			205-912-4	206-44-0									
27		pyrene				0.11	mg/kg		0.102	mg/kg	0.0000102 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
37		potassium { potassium cyanate }				1900	mg/kg	2.075	3650.131	mg/kg	0.365 %	✓	
		615-016-00-9	209-676-3	590-28-3									
										Total:	0.402 %		

Key

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

Classification of sample: TP5-D2-12072023-0.90

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

Sample details

Sample name:
TP5-D2-12072023-0.90
Moisture content:
18%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		24	mg/kg	1.32	25.984	mg/kg	0.0026 %	✓	
2		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.5	mg/kg	3.22	1.32	mg/kg	0.000132 %	✓	
3		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		61	mg/kg	1.462	73.107	mg/kg	0.00731 %	✓	
5		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<**LOD**
6		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16	mg/kg	1.126	14.772	mg/kg	0.00148 %	✓	
7		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	16	mg/kg		13.12	mg/kg	0.00131 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
9		nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		36	mg/kg	1.545	45.614	mg/kg	0.00456 %	✓	
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
11		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		150	mg/kg	1.245	153.1	mg/kg	0.0153 %	✓	
12		TPH (C6 to C40) petroleum group			TPH		12	mg/kg		9.84	mg/kg	0.000984 %	✓	
13		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
14		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
19		pH				5.9	pH		5.9	pH	5.9 pH		
				PH									
20		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				0.09	mg/kg		0.0738	mg/kg	0.00000738 %	✓	
			201-581-5	85-01-8									
25		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				0.08	mg/kg		0.0656	mg/kg	0.00000656 %	✓	
			205-912-4	206-44-0									
27		pyrene				0.07	mg/kg		0.0574	mg/kg	0.00000574 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
36		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
										Total:	0.0348 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because HP3 Flammable has been discounted as a viable Hazardous Property as the soils considered within this assessment are a solid waste without a free draining liquid phase. Advice from the laboratory indicates that testing for flammability was not appropriate due to the low level of TPH. The waste does not display this hazardous property.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00098%)

Appendix A: Classifier defined and non GB MCL determinands

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

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **lead compounds with the exception of those specified elsewhere in this Annex (worst case)**

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

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

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

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

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

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

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

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

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 £ conc. < 3 % , Eye Irrit. 2; H319 1 £ conc. < 3 % , Aquatic Chronic 2; H411

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic.

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history

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

Reasonable case species based on hazard statements/molecular weight.

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

Worst case species based on hazard statements/molecular weight

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Metallic compounds are not considered to be present in their chromate form as the laboratory analysis has demonstrated that insufficient concentrations of hexavalent chromium are present to enable the formation of chromates within the soils

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel(IV) oxide (nickel dioxide)}

Metallic compounds are not considered to be present in their chromate form as the laboratory analysis has demonstrated that insufficient concentrations of hexavalent chromium are present to enable the formation of chromates within the soils

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight

zinc {zinc oxide}

Metallic compounds are not considered to be present in their chromate form as the laboratory analysis has demonstrated that insufficient concentrations of hexavalent chromium are present to enable the formation of chromates within the soils

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

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

potassium {potassium cyanate}

Metallic compounds are not considered to be present in their chromate form as the laboratory analysis has demonstrated that insufficient concentrations of hexavalent chromium are present to enable the formation of chromates within the soils. Historical agricultural use at the site.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2023.226.5717.10536 (14 Aug 2023)
HazWasteOnline Database: 2023.226.5717.10536 (14 Aug 2023)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021

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