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INTRUSIVE SITE INVESTIGATION
SOIL ANALYSIS - TIER 2

SITE: **OLD HAWKINS MOTOR SITE**
HAYLE TERRACE
HAYLE
CORNWALL
TR27 4BT

CLIENT: **MR P DREW**
FACILITIES CONTRACTS MANAGER
HAYLE TOWN COUNCIL
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Our Ref: A2326/T2/JW **Planning Ref: PA23/02583**

Date: 20th December 2023 **OS Grid Ref: SW 5594/3763**

Index

1. Introduction

Following consultation and instruction from the client Mr P Drew (Facilities Contracts Manager), ASI was commissioned to conduct an Intrusive Soil Analysis Investigation/Generic Quantitative Risk Assessment (GQRA) for the following site address:

Site locality: **Old Hawkins Motor Site, Hayle Terrace, Hayle, Cornwall. TR27 4BT**
End-use: **Creation of a green space for the residents of Hayle.**

This report follows on from an initial Phase 1 Land Contamination Desk Study (P1 LCDS) produced by Cornwall Mining Consultants (CMC), under report reference AB/MS/SS/5739.b.PH1 and dated 09th March 2023. The survey concluded that the potential for onsite land contamination was possible within the proposed property bounds with the primary contamination risks, following review by ourselves, being derived from the following potential contamination sources, based upon the sites end-use for an 'open public green space':

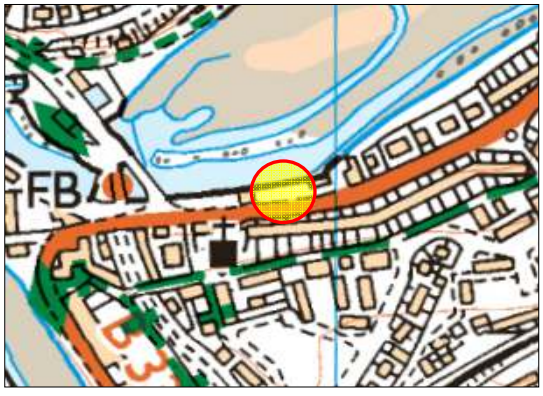
- Hydrocarbons and metallic elements due to the sites historic utilisation as a wharf area (potentially infilled ground) and former car forecourt area.

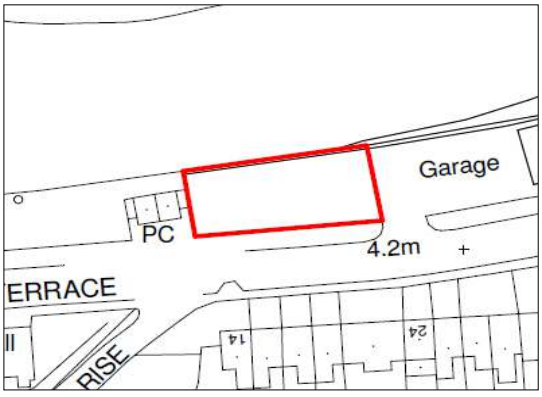
A review of the sites initial Site Conceptual Model and possible contamination sources identified by CMC within the existing P1 LCDS can be referred to in section 5 of this report.

Due to the sites proposed end-use being for a 'sensitive' site development, further investigation of the property was considered necessary to identify if the development is at risk from elevated contaminants associated to the above identified potential sources, with the existing surface horizon being considered a primary potential contamination pathway to end-users of the site.

In response to the above identified contamination sources, an onsite investigation and laboratory analysis of the existing ground horizon has been undertaken to determine if contamination is present, with the level of risk being dependent upon the degree of exceedance when compared to government set threshold values, with the results being presented below. Following review, this report should be submitted to the Local Council Authority Environmental Department for their records.

Map & Street Plan Showing Location Of Site





2. Geology & Hydrogeology

2.1 Geology

The geological survey map (British Geological Survey 1:50 000 series, sheet 351/358 & BGS records) show the site as lying within sedimentary bedrock comprising of Mudstone and Sandstone of the Porthtowan Formation, formed during the Devonian Geological Period.

Metalliferous lode zones (containing metalliferous minerals that in-fill a fissure or vein within a rock formation) that have the potential to introduce elevated heavy metal levels into the surrounding ground horizon are not indicated within, or in proximity to the site area.

Superficial Tidal Flat Deposits are recorded within the site zone. These types of deposits generally comprise of Sand, Silt and Clay which have been lain down or transported via tidal and estuarine action.

Soil classification within site locality (UKSO): N/A (no discernible topsoil horizon present).

2.2 Hydrogeology

Geological records indicate that the property is sited over rocks that can form minor aquifers of high permeability. These can be fractured or potentially fractured rocks, or other formations of variable permeability including unconsolidated deposits. Although these aquifers will seldom produce large quantities of water for abstraction, they are important both for local supplies and in supplying base flow to rivers.

Overlying soils classification (HU): Soils of high leaching potential.

3. Screening Criteria

In assessing the levels of compounds in the soil at the site we have referred to the Land Quality Management Ltd (LQM)/Chartered Institute of Environmental Health (CIEH), Suitable 4 Use Levels (S4ULs) 2014 and Soil Guideline Values (SGV) produced by the Environment Agency (EA) where applicable.

In addition, we have referenced the Category 4 Screening Levels (C4SL) produced by the Department for the Environment, Food and Rural Affairs (DEFRA) where necessary.

Both C4SLs, S4ULs and SGVs are based upon research undertaken by the LQM/CIEH and by DEFRA and the E.A, with reference to the Contaminated Land Exposure Assessment model (CLEA). The values are founded upon scientifically based generic assessment criteria (GAC) to help evaluate long-term risks to human health from contamination in soil.

The threshold limits are utilised as trigger values. Where soil concentrations are exceeded, there may be the potential for a significant risk to human health and/or environmental impact and may require further investigative works or possible land remediation. Please note, within the context of this report we have referred to the evaluated sample analysis data as Site Assessment Levels (SALs).

The C4SLs, S4ULs and SGVs have been derived for a range of contaminants for six typical land uses as listed below:

- Residential with homegrown produce
- Residential without homegrown produce
- Allotments
- Commercial
- Public open space near residential housing (POS_{resi})
- Public open space park (POS_{park})

Due to the sites end-use scenario being for an extension to an existing nursery, which in-turn does not fall within the set development scenarios, we have selected the testing scenario as **'public open space near residential housing (POS_{resi})'**, which provides a conservative site evaluation for the proposed develpment based upon a limited exposure scenario.

4. Definition Of Contaminated Land

The legal definition of contaminated land from Section 78A(2) of Part IIA of the Environmental Protection Act 1990) 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 in, on or under the land that:

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

A key element of the Part IIA regime is the Source-Pathway-Receptor pollutant linkage concept. The meaning of each element is as follows:

- the *source* is the contamination in, on or under the land;
- the *pathway* is the route by which the contamination reaches the receptor; and
- the *receptor* is defined as living organisms, ecological systems or property which may be harmed.

Without the clear identification of all three elements of the pollutant linkage, land cannot be identified as contaminated land under the regime. Contaminating substances may include:

- metals and metallic compounds e.g. cadmium, arsenic, lead, nickel, chromium
- organic compounds e.g. oils, petrol, solvents
- gases e.g. methane, carbon dioxide, hydrogen sulphide

Typical causes of land contamination include: previous industrial or commercial usage, mining and the land filling of waste. Land can also become contaminated due to its proximity to contaminated areas. However, contamination does not occur solely as a result of human activities and can be contaminated as a result of its natural state.

5. Revised Cornwall Mining Consultants P1 LCDS - Site Conceptual Model

Following review of the initial Site Conceptual Model produced by CMC, we have determined the following potentially existent and non likely contamination sources and pathway linkages based upon the sites end-use for a 'public open space near residential housing':

Potential Contamination Sources: **actual sources of contamination**

- Historic wharf area (infilled/made ground) - hydrocarbons, metallic elements.
- Former car forecourt area - hydrocarbons, metallic elements.

Non-Contamination Sources: unlikely sources of contamination

- Geological sources - naturally occurring metallic elements (unlikely, due to natural ground horizon lying at depth below surface horizon, no contamination pathway present).
- Offsite historic gas works - hydrocarbons, metallic elements, volatile ground gasses (unlikely due to historic age of gas works (closed circa 1908) and distance from site (185m west), tidal/groundwater pathway would not affect near surface horizon, potential residual contaminates migrating to site diluted over long-term time period. Potential ground gases (considered very low risk) naturally venting to the atmosphere, no contamination pathways present.
- Railway line, petrol station - hydrocarbons, metallic elements, volatile ground gasses (unlikely, discounted by CMC within P1 LCDS 'Pollution Linkage Assessment' due to distance from site (railway line 110m west, petrol station 90m southwest)).

6. Soils Analysis Screen & Collection

The testing suite chosen was considered suitable in relationship to the type of potential contamination associated to the site, with all collected samples being subsequently tested for a broad range of contaminates as described below, therefore acquiring an overall Site Assessment Level (SAL) for the proposed development.

Please refer to Annex 1: Site Plan for sample locations.

In-organic Screen:

Arsenic, cadmium, chromium (III), chromium (VI), copper, lead, mercury, nickel, selenium and zinc.

Organic Screen:

BTEX, MTBE (volatiles), phenol, speciated PAH's (Polycyclic Aromatic Hydrocarbons), speciated TPH (Total Petroleum Hydrocarbons).

Other constituents:

Acid soluble sulphate, pH.

Chemical analysis was undertaken by The Environmental Laboratory LTD (ELAB), UKAS accredited, of which the full results are presented in Annex 2.

6.1 Collection & Site Information

In total 8no samples were collected within the proposed site bounds on the 29th November 2023, with the weather conditions at the time of collection being dry. The collected samples were composite in nature and numbered S1 to S8, with the samples comprising of made ground retrieved from material from an average depth of 0.00m to 1.00m in depth. Due to a layer of compacted infill material, sample location S7 which was extended to 1.5m bgl to check the consistency of the material.

The sampling layout was selected to acquire suitable coverage of the site area, with the samples being retrieved from the western to eastern boundaries of the proposed plot, therefore providing an accurate analytical assessment of the existing ground horizon. Where services, buildings or similar onsite features were present the samples were obtained where possible.

All samples were collected utilising a Kubota U27-4 2.5 tonne excavator operated by Andrew Bros Ltd, with the samples being retrieved under the supervision of a qualified site geologist.

Following excavation by the plant machinery, the samples were obtained by trowel, with the sampling tool being cleaned prior to the retrieval of each sample. Recovered material was then stored in sealed plastic storage containers for acid soluble sulphate, heavy metals and pH, and brown glass storage jars for BTEX, MTBE, PAHs, phenols and TPH. The samples were then made ready for transportation within pre-chilled cool boxes to ELAB for laboratory analysis.

Samples S1 to S8 x 8no samples comprised of stony made ground, with the sample material being retrieved from the excavated spoil heaps. The surface horizon is viewed to pose the most potential risk to the end-user, via dermal, inhalation and ingestion pathways from contaminants.

No groundwater or tidal influx was recorded within the area of sampling. For sample locations please refer to Annex 1: Site Plan for details.

7. Soil Sample Composition Table

Sample No.	Sample Type & Collection Depth	Sample Identification & Description
	Upper horizon - MADE GROUND **Collection depth 0.00m to 1.00m bgl**	Laboratory classification:
S1 S2 S3 S4 S5 S6 S7 S8	0.00m bgl to 0.30m MHD 0.00m bgl to 0.30m MHD 0.00m bgl to 0.30m MHD 0.00m bgl to 0.30m MHD 0.00m bgl to 0.30m MHD 0.00m bgl to 0.30m MHD 0.00m bgl to 0.30m MHD 0.00m bgl to 0.30m MHD	Light brown, moderately compacted made ground horizon comprising of coarse gravel to cobbles of angular stony subsoil (20mm to 200mm average size).
	Lower horizon - MADE GROUND **Collection depth 0.00m to 1.00m bgl**	Laboratory classification: soil
S1 S2 S3 S4 S5 S6 S7 S8	0.30m bgl to 1.00m bgl (MED) 0.30m bgl to 1.00m bgl (MED) 0.30m bgl to 1.00m bgl (MED) 0.30m bgl to 1.00m bgl (MED) 0.30m bgl to 1.00m bgl (MED) 0.30m bgl to 1.00m bgl (MED) 0.30m bgl to 1.50m bgl (MED) 0.30m bgl to 1.00m bgl (MED)	Grey, moderately compacted and very stony made ground horizon comprising primarily of angular cobbles of mine waste rock (50mm to 200mm average size), mining slag and grit.
	*** MHD - Maximum Horizon Depth** *** CD - Collection Depth** *** MED - Maximum Excavation Depth**	
Recorded by: **Sample collection date**: **Weather conditions**:		J. Williamson (Site Investigation Manager) 29th November 2023 Dry

8. C4SL, S4ULs, SGV Threshold Values

The C4SL, S4ULs and SGV threshold values are intended to indicate to an assessor the level at which harm could be caused to receptors i.e. human beings, eco-systems, vegetables and fruit. The values represent the total amount of contaminants contained within a sample of analysed soil, with the resulting value being expressed in mg/kg.

The chosen site scenario is for 'public open space near residential housing (POS_{resi})' with the values highlighted in bold for reference.

Table 8.1 Values For Heavy Metals

Element	Land usage scenario	Land usage scenario	Land usage scenario	Land usage scenario
	Public open space near residential housing (POS resi)/ Public open space park (POS park) (S4UL)	Commercial (S4UL)	Allotment (S4UL)	Residential with/without homegrown produce (S4UL)
	(mg/kg dry weight soil)	(mg/kg dry weight soil)	(mg/kg dry weight soil)	(mg/kg dry weight soil)
Arsenic	**79**/170	640	43	37/40
Cadmium	**120**/532	190	1.9	11/85
Chromium (III)	**1500**/33000	8600	18000	910/910
Chromium (VI hex)	-	35	2.1	4.3
Lead (C4SL)	**760**/1400 (C4SL)	2700 (C4SL)	84 (C4SL)	210/330 (C4SL)
Mercury (inorganic)	**120**/240	1100	19	40/56
Nickel	**230**/3400	980	230	180/180
Selenium	**1100**/1800	12000	88	250/430
Phytotoxic: plant affecting				
Copper	**12000**/44000	68000	520	2400/7100
Zinc	**81000**/170000	730000	620	3700/40000
Heavy metals are the non-degradable metals. These metals are toxic and posses high density. Heavy metals occur in the earth's crust naturally. Some of the heavy metals are lead, cadmium, mercury, arsenic and chromium. High concentration of heavy metals causes poisoning. The main sources of heavy metals are domestic waste water and urban run-off, industrial waste water, agricultural activities and mining activities.				

Table 8.2 Values For Phenol

Land Use	Soil Guideline Value (mg kg^{-1} DW)
	Phenol
Residential	**420**
Allotment	280
Commercial	3,200 (38,000)
Phenol is found widely in the environment. It is produced naturally but the major sources are related to anthropogenic processes. It is a significant component of coal tar and is a well known contaminant at gas works and coking plant sites. Phenol is produced during combustion of coal, wood and municipal wastes etc and is also a component of vehicle exhausts and cigarette smoke (Environment Agency, 2004).	

Table 8.3 Values For Speciated Polycyclic Aromatic Hydrocarbons

A SOM (Soil Organic Content) of 2.5% has been utilised for the determination of sample results.

Element	Land usage scenario	Land usage scenario	Land usage scenario
	S4ULs (LQM/CIEH) Public open space near residential housing (POS_{resi})	**S4ULs (LQM/CIEH)** Public open space near residential housing (POS_{resi})	S4ULs (LQM/CIEH) Public open space near residential housing (POS_{resi})
	(mg/kg dry weight soil) 1% SOM	**(mg/kg dry weight soil) 2.5% SOM**	(mg/kg dry weight soil) 6% SOM
Acenaphthene	15000	**15000**	15000
Acenaphthylene	15000	**15000**	15000
Anthracene	74000	**74000**	74000
Benzo[a]anthracene	29	**29**	29
Benzo[a]pyrene	5.7	**5.7**	5.7
Benzo[b]fluoranthene	7.1	**7.2**	7.2
Benzo[g,h,I]perylene	640	**640**	640
Benzo[k]fluoranthene	190	**190**	190
Chrysene	57	**57**	57
Dibenzo[a,h]anthracene	0.57	**0.57**	0.58
Fluoranthene	3100	**3100**	3100
Fluorene	9900	**9900**	9900
Indeno[123-cd]pyrene	82	**82**	82
Naphthalene	4900 [f]	**4900 [f]**	4900 [f]
Phenathrene	3100	**3100**	3100
Pyrene	7400	**7400**	7400
PAHs generally occur together as a complex mixture not as single compounds. PAH mixtures are a major component of crude oil, coal, coal tar pitch, asphalt, creosote, and roofing tar but a few purified congeners have found uses in medicines and to make dyes, textiles, explosives, plastics and pesticides etc. (Environment Agency, 2003). However, the majority of PAHs found in the environment are released as the result of incomplete combustion of carbonaceous fuels (Environment Agency, 2003).			

Table 8.4 Values For Speciated Total Petroleum Hydrocarbons

A SOM (Soil Organic Content) of 2.5% has been utilised for the determination of sample results.

Element	Land usage scenario	Land usage scenario	Land usage scenario
	S4ULs (LQM/CIEH) Public open space near residential housing (POS_{resi})	**S4ULs (LQM/CIEH)** Public open space near residential housing (POS_{resi})	S4ULs (LQM/CIEH) Public open space near residential housing (POS_{resi})
	(mg/kg dry weight soil) 1% SOM	**(mg/kg dry weight soil) 2.5% SOM**	(mg/kg dry weight soil) 6% SOM
Aliphatic EC 5-6	570000(304) [sol]	**590000**	600000
Aliphatic EC >6-8	600000	**610000**	620000
Aliphatic EC >8-10	13000	**13000**	13000
Aliphatic EC >10-12	13000	**13000**	13000
Aliphatic EC >12-16	13000	**13000**	13000
Aliphatic EC >16-35	250000 [f]	**250000 [f]**	250000 [f]
Aliphatic EC >35-44	250000 [f]	**250000 [f]**	250000 [f]
Aromatic EC 5-7 (benzene)	56000	**56000**	56000
Aromatic EC 7-8 (toluene)	56000	**56000**	56000
Aromatic EC 8-10	5000	**5000**	5000
Aromatic EC 10-12	5000	**5000**	5000
Aromatic EC 12-16	5100	**5100**	5000
Aromatic EC 16-21	3800 [f]	**3800 [f]**	3800 [f]
Aromatic EC 21-35	3800 [f]	**3800 [f]**	3800 [f]
Aromatic EC 35-44	3800 [f]	**3800 [f]**	3800 [f]
Aliphatic + Aromatic EC>44-70	3800 [f]	**3800 [f]**	3800 [f]

Benzene, Toluene, Ethyl benzene, m/p-Xylene and 0-Xylene threshold values have been referenced within the S4ULs limits and levels.

Speciated TPH by GC-FID provides a "banded" TPH, initially split into aromatic and aliphatic fractions and then further divided into fraction specific carbon bandings based upon behavioural characteristics. TPH cannot be assessed as a single "total" value, and reference has been made to the Environment Agency's document P5-080/TR3, "The UK approach for evaluating human health risks from petroleum hydrocarbons in soils". This document supports the assumptions and recommendations made by the US Total Petroleum Hydrocarbons Criteria Working Group (TPHCWG).

Total Petroleum Hydrocarbons (TPH) describes a broad range of organic compounds derived from crude oil. Elevated TPH levels are typically found on brownfield sites where hydrocarbons may be present in the soil due to accidental spillage or as a by product of manufacturing industry or petroleum production. The analysis determines any hydrocarbons present within the sample material which fall into the C6-C35 range, which covers petrol and diesel range compounds (DRO & PRO).

9. Sample Information For Heavy Metal Contaminants

Please refer to sections 9.1 to 9.4 for sample information relating to heavy metal concentrations at the site locality. All soil values are based on 'total' concentrations, i.e. arsenic 79mg/kg (total).

Where relevant, the percentage level of acid soluble sulphate deemed to present potentially aggressive ground conditions for concrete design will be highlighted in section 9.1: Laboratory Analysis Results (below). Necessary recommendations for design sulphate class (DS class) will be referenced within section 12.1: Acid Soluble Sulphate.

Chosen site scenario: 'public open space near residential housing (POS_{resi})'.

9.1 Laboratory Analysis Results

Sample Identification: COMPOSITE SAMPLE MATERIAL x 8 samples

Primary Heavy Metals Affecting Human Health										
Samples	**S1**	**S2**	**S3**	**S4**	**S5**	**S6**	**S7**	**S8**		
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		
Arsenic	687	1350	301	437	394	602	329	311		
Cadmium	0.8	1.6	3.0	5.2	2.0	0.6	<0.5	1.3		
Chromium (III)	31.1	39.1	15.4	22.9	16.4	18.3	33.3	37.5		
Chromium (hex)	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8		
Lead	193	188	76.3	61.7	128	131	103	91.4		
Mercury (inorganic)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Nickel	75.2	65.8	48.5	81.0	87.8	35.0	39.9	75.5		
Selenium	1.3	<1.0	<1.0	<1.0	1.2	1.7	<1.0	<1.0		
Primary Heavy Metals Affecting Plants (phytotoxic)										
Samples	**S1**	**S2**	**S3**	**S4**	**S5**	**S6**	**S7**	**S8**		
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		
Copper	2210	3040	4310	7090	2710	1360	974	5360		
Zinc	3310	2300	2120	3420	2570	810	683	2810		
pH Units	7.5	7.7	7.7	7.3	7.3	7.3	8.2	8.0		
Acid Soluble Sulphate %	0.07	0.08	0.06	0.35	0.12	0.31	0.29	0.08		

Values failing C4SLs and S4ULs threshold limits have been highlighted in red.
Recommended action level for Acid Soluble Sulphate 0.24% SO_3 for concrete in aggressive ground conditions for subsoil/foundation horizon only (Specifying Concrete to BS EN 206-1/BS 8500).

9.2 Arithmetic Mean & Maximum/Lowest Values

Samples utilised for a representative site sample mean and inclusive of the maximum and lower sample values are defined below, with the samples comprising of composite sample material collected from within the site bounds.

Sample Identification: COMPOSITE SAMPLE HORIZON x 8 samples

Element	Sample Mean	Maximum Value	Lowest Value	Public open space near residential housing (POS_{resi}) C4SLs/S4ULs
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	551	1350	301	**79**
Cadmium	1.9	5.2	<0.5	**120**
Chromium (III)	27	39.1	15.4	**1500**
Chromium (VI)	<0.8	<0.8	<0.8	**7.7**
Lead (C4SL)	122	193	61.7	**760**
Mercury (inorganic)	<0.5	<0.5	<0.5	**120**
Nickel	64	87.8	35.0	**230**
Selenium	1.1	1.7	<1.0	**1100**
Copper	3381	7090	974	**12000**
Zinc	2253	3420	683	**81000**
Values failing C4SLs and S4ULs threshold limits have been highlighted in red.				

9.3 US95 Calculations (Mean Value Test) For Failing Heavy Metal Contaminants

9.3.1 Calculated Site Assessment Level (SAL/US95) For Arsenic - (Outlier)

Sample location S2 has been identified as an outlier or hotspot by failing the Maximum Value Test, i.e. not belonging to the same group or population. Sample S2 has subsequently been removed from the US95 calculation, with the true SAL/US95 value shown in section 9.3.2.

Sample Identification: COMPOSITE SAMPLE HORIZON x 8 samples

US95 Evaluation - **FAIL**

A2326: Old Hawkins Motor Site, Hayle.

Arsenic		Data Set A				Logs
Sample No.						
S1		687				2.837
S2		1350				3.130
S3		301				2.479
S4		437				2.640
S5		394				2.595
S6		602				2.780
S7		329				2.517
S8		311				2.493
Total		4411		Total		21.471
Number of samples	N	8		Number of samples	N	8
Arithmetic sample mean	X	551.375		Arithmetic sample mean	Y	2.684
Unbiased sample deviation	S	351.837		Unbiased sample deviation	Sy	0.223
value for 95th percentile Confidence limit	t	1.895		Maximum value	X	3.130
sqr.rt of number of samples	n	2.828				
therefore US95	**=**	**787**		**Maximum Value Test (T)**	**=**	**2.002**
S4UL in mg/kg				**Critical Value**	**=**	**1.910**
Public open space near res = **79**						
US95 (upper bound): A number that can be equal to or greater than any number in given data set.						

9.3.2 Calculated Site Assessment Level (SAL/US95) For Arsenic - (True Value)

Sample Identification: COMPOSITE SAMPLE HORIZON x 7 samples

US95 Evaluation - **FAIL**

A2326: Old Hawkins Motor Site, Hayle.

Arsenic		Data Set A			Logs
Sample No.					
S1		687			2.837
S3		301			2.479
S4		437			2.640
S5		394			2.595
S6		602			2.780
S7		329			2.517
S8		311			2.493
Total		3061		Total	18.341
Number of samples	N	7		Number of samples	N 7
Arithmetic sample mean	X	437.286		Arithmetic sample mean	Y 2.620
Unbiased sample deviation	S	151.443		Unbiased sample deviation	Sy 0.142
value for 95th percentile Confidence limit	t	1.943		Maximum value	X 2.837
sqr.rt of number of samples	n	2.646			
therefore US95	**=**	**549**		**Maximum Value Test (T)**	**= 1.531**
S4UL in mg/kg				**Critical Value**	**= 1.830**
Public open space near res = **79**					
US95 (upper bound): A number that can be equal to or greater than any number in given data set.					

9.4 Identified Failing Heavy Metal Contaminants

The following heavy metal contaminant has been identified to have an elevated result that exceeds current guidance limits and should be utilised to assess the level of contamination within the ground horizon at the site locality.

Sample Identification: ARSENIC - COMPOSITE SAMPLE HORIZON

Mean Value Test (US95)/Site Assessment Level for arsenic:

True Site Value	
SAL (US95)	549.00 mg/kg
S4UL guidance limit for arsenic	79.00 mg/kg
Risk classification	**Medium**
Outliers	
Sample S2	1350 mg/kg
S4UL guidance limit for arsenic	79.00 mg/kg
Risk classification	**Medium/High**

10. Sample Information For PAH Contaminants

Speciated PAHs - (Polycyclic Aromatic Hydrocarbons)

Due to the high number of tested PAHs, an Arithmetic Mean Value has not been produced, with Site Assessment Levels (SAL/US95 US95 Mean Value Test) being undertaken on the identified failing PAH contaminants, as defined below.

Chosen site scenario: 'public open space near residential housing (POS_{resi})'.

10.1.1 Calculated Site Assessment Level (SAL/US95) For Benzo(a)pyrene

Sample Identification: COMPOSITE SAMPLE HORIZON x 8 samples

US95 Evaluation - PASS

A2326: Old Hawkins Motor Site, Hayle.

Benzo(a)pyrene		Data Set A			Logs
Sample No.					
S1		1			0.000
S2		6.4			0.806
S3		0.1			-1.000
S4		0.3			-0.523
S5		1.5			0.176
S6		0.2			-0.699
S7		0.1			-1.000
S8		1.2			0.079
Total		10.8		Total	-2.160
Number of samples	N	8		Number of samples	N 8
Arithmetic sample mean	X	1.350		Arithmetic sample mean	Y -0.270
Unbiased sample deviation	S	2.112		Unbiased sample deviation	Sy 0.640
value for 95th percentile Confidence limit	t	1.895		Maximum value	X 0.806
sqr.rt of number of samples	n	2.828			
therefore US95	**=**	**2.8**		**Maximum Value Test (T)**	**= 1.682**
S4UL in mg/kg				**Critical Value**	**= 1.910**
Public open space near res = **5.7**					

US95 (upper bound): A number that can be equal to or greater than any number in given data set.

10.1.2 Calculated Site Assessment Level (SAL/US95) For Dibenzo(a,h)anthracene - (Outlier)

Sample location S2 has been identified as an outlier or hotspot by failing the Maximum Value Test, i.e. not belonging to the same group or population. Sample S2 has subsequently been removed from the US95 calculation, with the true SAL/US95 value shown in section 10.1.3.

Sample Identification: COMPOSITE SAMPLE HORIZON x 8 samples

US95 Evaluation - **PASS**

A2326: Old Hawkins Motor Site, Hayle.

Dibenzo(a,h)anthracene		Data Set A				Logs
Sample No.						
S1		0.2				-0.699
S2		1.2				0.079
S3		0.1				-1.000
S4		0.1				-1.000
S5		0.2				-0.699
S6		0.1				-1.000
S7		0.1				-1.000
S8		0.3				-0.523
Total		2.3		Total		-5.842
Number of samples	N	8		Number of samples	N	8
Arithmetic sample mean	X	0.288		Arithmetic sample mean	Y	-0.730
Unbiased sample deviation	S	0.376		Unbiased sample deviation	Sy	0.376
value for 95th percentile Confidence limit	t	1.895		Maximum value	X	0.079
sqr.rt of number of samples	n	2.828				
therefore US95	**=**	**0.54**		**Maximum Value Test (T)**	**=**	**2.151**
S4UL in mg/kg				**Critical Value**	**=**	**1.910**
Public open space near res = **0.57**						
US95 (upper bound): A number that can be equal to or greater than any number in given data set.						

10.1.3 Calculated Site Assessment Level (SAL/US95) For Dibenzo(a,h)anthracene - (True Value)

Sample Identification: COMPOSITE SAMPLE HORIZON x 7 samples

US95 Evaluation - **PASS**

A2326: Old Hawkins Motor Site, Hayle.

Dibenzo(a,h)anthracene		Data Set A			Logs
Sample No.					
S1		0.2			-0.699
S3		0.1			-1.000
S4		0.1			-1.000
S5		0.2			-0.699
S6		0.1			-1.000
S7		0.1			-1.000
S8		0.3			-0.523
Total		1.1		Total	-5.921
Number of samples	N	7		Number of samples	N 7
Arithmetic sample mean	X	0.157		Arithmetic sample mean	Y -0.846
Unbiased sample deviation	S	0.079		Unbiased sample deviation	Sy 0.201
value for 95th percentile Confidence limit	t	1.943		Maximum value	X -0.523
sqr.rt of number of samples	n	2.646			
therefore US95	**=**	**0.21**		**Maximum Value Test (T)**	**= 1.606**
S4UL in mg/kg				**Critical Value**	**= 1.830**
Public open space near res = **0.57**					

US95 (upper bound): A number that can be equal to or greater than any number in given data set.

10.2 Identified Failing PAH Contaminants

The following PAH contaminant has been identified to have elevated results that exceed current guidance limits and should be utilised to assess the level of contamination within the ground horizon at the site locality. All other tested PAHS were recorded as being below guidance limits.

Sample Identification: DIBENZO(A,H)ANTHRACENE - COMPOSITE SAMPLE HORIZON

Mean Value Test (US95)/Site Assessment Level for dibenzo(a,h)anthracene:

True Site Value	
SAL (US95)	0.21 mg/kg
S4UL guidance limit for dibenzo(a,h)anthracene	0.57 mg/kg
Risk classification	**Pass**
Outliers	
Sample S2	1.2 mg/kg
S4UL guidance limit for dibenzo(a,h)anthracene	0.57 mg/kg
Risk classification	**Low/Medium**

11. Sample Information For Phenols, TPH , BTEX, MTBE

Sample data comprises of the tested ground horizon. Due to the comprehensive nature of the sample spread please refer to Annex 2: Laboratory Results for the returned laboratory sample values, which can be compared to the threshold limits located within section 7: C4SL, S4ULs, SGV Threshold Values.

11.1 Phenols

Samples S1 to S8 - COMPOSITE SAMPLE HORIZON

Tested substance	Sample test results SGV criteria values	Risk level
Phenol	**Pass**	**Low**

11.2 TPH, BTEX, MTBE

Samples S1 to S8 - COMPOSITE SAMPLE HORIZON

Tested substances	Sample test results S4UL criteria values	Risk level
Speciated TPH	**Pass**	**Low**
BTEX	**Pass**	**Low**
MTBE	**Pass**	**Low**

12. Other Tested Sample Constituents

12.1 Acid Soluble Sulphate

Pyrite (iron sulphide) can occur naturally, or arise from industrial wastes and if slowly oxidised in the soil can give rise to sulphuric acid and sulphide ions in acid solution, in turn potentially affecting concrete for foundations.

Current guidance Specifying Concrete to BS EN 206-1/BS 8500 delineates various suitable grades of concrete that can be utilised for development foundations (where required), with the grade of concrete increasing in strength relative to the level of acid soluble sulphate (SO4) detected. Generally, values exceeding 0.24% SO4 would require a higher grade of concrete.

Acid Soluble Sulphate % level and pH value obtained from sample locations S1 to S8 x 8no samples.

(SO_4) 0.17%, pH - 7.6

According to the guideline limits for Specifying Concrete to BS EN 206-1/BS 8500, a Design Sulphate Class (DS) of DS -1 and an Aggressive Chemical Environment for Concrete (ACEC) of AC -1 should be utilised at this site should concrete surfacing be required. We would recommend, as a precautionary measure, that the developer consult with their designer and/or concrete supplier with respect to a suitable concrete design, with the information provided to be utilised for guidance purposes.

13. Soil Analysis Conclusions & Recommendations

Under the currently published Category 4 Screening Levels (C4SL), Suitable 4 Use Levels (S4ULs) and Soil Guideline Values (SGVs), the resulting soil analysis data has determined that the site has been identified to have elevated levels of the following contaminants which are considered to present a contamination risk:

- Heavy metal(s) - Arsenic,
- Polycyclic Aromatic Hydrocarbon(s) - Dibenzo(a,h)anthracene

The sample values are based upon total concentrations, i.e. an amount of contaminant contained within the collected sample material, expressed as mg/kg (milligrams per kilogram) and are used to gain an understanding of the overall contaminant levels and level of risk. Exposure to contaminated land can potentially cause human health risks if levels are determined to be high, however this is typically over long-term exposure periods.

A risk categorisation is intended to convey to the client and Local Authorities that the ground horizon within the area of sampling would be considered a potential hazard to human health from the following exposure pathways: dermal (contact with skin), inhalation (dust/vapour) and ingestion (growing of home grown produce).

For reference purposes all returned sample values have been compared to a 'public open space near residential housing' scenario, deemed suitable under the proposed development plan for the creation of a green space for the residents of Hayle, with no structures or associated foundation excavations being required.

Determination for Arsenic: Composite Sample Horizon

Following evaluation, sample numbers S1 to S8 have returned a Site Assessment Level (SAL/US95) of 549 mg/kg for arsenic within the identified made ground horizon at this site, with the samples being composite in nature (retrieved from an average depth of 0.00m to 1.00m bgl). This value exceeds the S4UL value of 79 mg/kg for a 'public open space near residential housing' scenario. Therefore, based upon the exceedance value, the site has been classified at medium risk with respect to arsenic concentrations.

In addition, sample S2 has been identified as an outlier or hotspot returning a value of 1350 mg/kg and has consequently been assigned a risk rating of medium to high risk for location S2.

Determination for Speciated PAHs: Composite Sample Horizon

Following the screening of 16 PAHs, the site has been determined to have a single elevated level of dibenzo[a,h]anthracene, identified from composite sample location S2 (retrieved from a depth of 0.00m to 1.00m bgl), which returned a Site Assessment Level (SAL/US95) of 1.2 mg/kg.

When compared to the S4UL value for dibenzo[a,h]anthracene, set at 0.57 mg/kg for a 'public open space near residential housing' scenario, this single location has been classified as presenting a low to medium risk from PAH concentrations, with the remaining sample locations being determined as low risk.

Other Tested Elements

All other tested samples were below threshold values.

Additional Laboratory Analysis

No further analytical testing would be recommended at the site locality, due to the level of identified arsenic, with additional testing in the form of bio-accessibility analysis, with CLEA modelling (Contaminated Land Exposure Assessment) having a high probability of producing a negative result, with the site remaining contaminated. We therefore recommend remedial action for the property as defined below.

Remedial Recommendations

A Site Remediation Strategy must be submitted to the Local Authorities clearly defining the proposed site layout and remedial measures to be employed. Such measures would require the incorporation of suitable break layers over areas of exposed ground. This can be in the form of hardstanding, such as concrete, brick paviours, tarmacadam, etc or soft surfacing materials, such as clean imported soil, gravel or wood chippings underlain by suitable break layers. These methods can be employed singularly or in combination.

A site Verification and Completion Report will then be required as the final report. This will be issued upon completion of the development works in order to verify that the Site Remediation Strategy recommendations have been satisfied.

Eco-systems

Although the site has been determined to exceed threshold levels for the identified contaminants, we do not believe that eco-systems would be adversely affected by following the correct implementation of the Site Remediation Strategy. With remediation of the site both removing and breaking contamination pathways, in-turn regenerating the existing site setting.

Excess Soil Disposal

Under government legislation a Waste Classification Assessment (WCA) has been undertaken for excess waste generated for landfill disposal. Following classification, the WCA report has subsequently classified sample locations S1, S2, S3, S4, S5 and S8, under the List of Waste (LoW) reference of 17 05 04 (construction and demolition waste/soil and stones) as 'hazardous waste', with all other returned values being classified as 'non-hazardous waste' for landfill disposal purposes. For reference, we have included the WCA report within Annex 3: Waste Classification Assessment.

It should be noted that any removal of material must be by a licensed haulier and disposed of at an accredited landfill facility capable of receiving the type of recorded waste material. Information such as waste transfer notes will be required for future reference purposes.

Potable water supply

We would recommend that should water supply pipes be required at this site that suitable polyethylene 'blue' P.E water supply pipes are utilised when undertaking groundworks. The service pipes should be lain within a gravel surround service trench (pipe separated with at least 150mm of gravel on all sides), and within a ducting pipe to separate the service pipes from the surrounding ground horizon. The service pipes should be laid with a minimum cover from finished ground level to the crown of the pipe of 750mm to a maximum cover of 1200mm.

Site Evaluation:

Having reviewed the retuned sample data, it has been determined that the site has elevated levels of the heavy metal arsenic, with a single outlier for dibenzo[a,h]anthracene, a speciated PAH.

These elevated results have been attributed to the site area being comprised of a moderately compacted made ground horizon generated through the creation of an historic wharf, with the infill material consisting primarily of mine waste rock, overlain by a capping horizon of imported stony subsoil. Within the infill material, some occasional slag was observed, which would be consistent with former smelting activity within the Hayle locality, which was then subsequently mixed with the infill material.

Due to the sites end-use being for a public open space, the upper surface horizon was targeted to a depth of 1.00m bgl, with the samples being retrieved from the excavated spoil heaps, in-turn producing composite samples, i.e. a mixture of the infill material. No deeper excavations were considered necessary, due to no foundation excavations being required and furthermore to limit the disturbance to the existing ground horizon, which lies adjacent to the estuary.

Having conducted the survey, no other forms of contamination were recorded at the site locality other than identified above. It should be noted however that under the Waste Classification Assessment, elevated levels of copper and zinc were recorded that have been identified as hazardous waste. Although considered hazardous for waste disposal purposes, the levels of copper and zinc fall under the guidance limits for a 'public open space near residential housing' scenario.

Following the above conclusions and recommendations, we have no further comments to make within the scope of this report.

14. Notes

1. This report relates to the area defined within the report.

2. The report should not be used in any way in connection with adjacent properties.

3. The conclusions and recommendations sections of this site report only relate to the form and extent of development outlined herein for this specific property only and they should not be taken as suitable for any other form or extent of development within the boundaries of this property without further consultation with Approved Site Investigations Ltd.

4. This report is confidential to the named client(s) and we have no liability toward any person not party to commissioning this report.

5. This report may not be reproduced or distributed to third parties without our prior permission other than to directly facilitate the sale or development of the property concerned.

6. This report may not be resold without our prior permission.

7. Unless otherwise expressly stated, nothing in this report shall create or confer any rights or other benefits pursuant to the Contracts (Rights of Third Parties) Act 1999 in favour of any person other than the person commissioning this report.

Approved Site Investigations Ltd

Verified by:
Mr. J.R Williamson (Managing Director),
HND Science (Industrial Mining Geology), Dip CSM

15. ANNEXES

Annex 1: Site Plan

Annex 2: Laboratory Results

Annex 3: Waste Classification Assessment

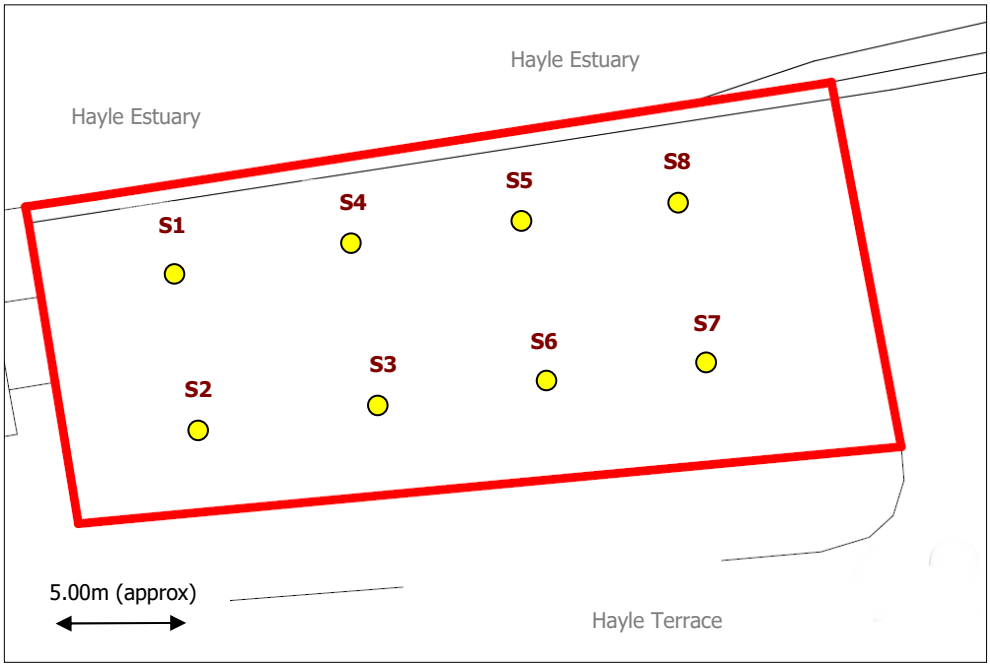
Annex 4: Site Photographs

Annex 5: References

Annex 1: Site Plan

SITE PLAN

Sample location plan showing existing site layout



North

Land at:

Old Hawkins Motor Site
Hayle Terrace
Hayle
Cornwall
TR27 4BT

Sample collection date:

29th November 2023

Site inspected by:

Mr J.R Williamson

Position:
Site Investigation Manager

Notes:

- Not to scale, for diagrammatic purposes only.
- Site boundary indicated by the red line.
- Sample location points indicated in yellow.

Annex 2: Laboratory Results

Unit A2
Windmill Road
Ponswood Industrial Estate
St Leonards on Sea
East Sussex
TN38 9BY
Telephone: (01424) 718618

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info@elab-uk.co.uk

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	23-51379
Issue:	1
Date of Issue:	11/12/2023
Contact:	Jeremy Williamson
Customer Details:	Approved Site Investigations Ltd. Duchy Business Centre Wilson Way Redruth CornwallTR15 3RT
Quotation No:	Q22-03483
Order No:	Not Supplied
Customer Reference:	A2326
Date Received:	04/12/2023
Date Approved:	11/12/2023
Details:	Hayle
Approved by:	

Ben Rees, Customer Services Assistant

Sample Summary

Report No.: 23-51379, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
347080	1	29/11/2023	04/12/2023	Sandy loam	
347081	2	29/11/2023	04/12/2023	Sandy loam	
347082	3	29/11/2023	04/12/2023	Sandy loam	
347083	4	29/11/2023	04/12/2023	Sandy loam	
347084	5	29/11/2023	04/12/2023	Sandy loam	
347085	6	29/11/2023	04/12/2023	Sandy loam	
347086	7	29/11/2023	04/12/2023	Sandy silty loam	
347087	8	29/11/2023	04/12/2023	Sandy loam	

Results Summary

Report No.: 23-51379, issue number 1

			ELAB Reference	347080	347081	347082	347083	347084	347085	347086	347087
			Customer Reference								
			Sample ID								
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	1	2	3	4	5	6	7	8
			Sample Depth (m)								
			Sampling Date	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023
Determinand	**Codes**	**Units**	**LOD**								
Soil sample preparation parameters											
Moisture Content	N	%	0.1	9.6	16.2	10.1	13.0	9.4	9.2	8.7	11.4
Material removed	N	%	0.1	15.1	11.0	10.8	< 0.1	29.6	13.1	< 0.1	11.1
Description of Inert material removed	N		0	Stones	Stones	Stones	None	Stones	Stones	None	Stones
Metals											
Arsenic	M	mg/kg	1	687	1350	301	437	394	602	329	311
Cadmium	M	mg/kg	0.5	0.8	1.6	3.0	5.2	2.0	0.6	< 0.5	1.3
Chromium	M	mg/kg	5	31.1	39.1	15.4	22.9	16.4	18.3	33.3	37.5
Copper	M	mg/kg	5	2210	3040	4310	7090	2710	1360	974	5360
Lead	M	mg/kg	5	193	188	76.3	61.7	128	131	103	91.4
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	75.2	65.8	48.5	81.0	87.8	35.0	39.9	75.5
Selenium	M	mg/kg	1	1.3	< 1.0	< 1.0	< 1.0	1.2	1.7	< 1.0	< 1.0
Zinc	M	mg/kg	5	3310	2300	2120	3420	2570	810	683	2810
Inorganics											
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Acid Soluble Sulphate (SO4)	U	%	0.02	0.07	0.08	0.06	0.35	0.12	0.31	0.29	0.08
Miscellaneous											
pH	M	pH units	0.1	7.5	7.7	7.7	7.3	7.3	7.3	8.2	8.0
Soil Organic Matter	U	%	0.1	2.0	3.1	1.5	2.2	1.4	1.0	1.4	1.2

Results Summary

Report No.: 23-51379, issue number 1

ELAB Reference	347080	347081	347082	347083	347084	347085	347086	347087
Customer Reference								
Sample ID								
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	1	2	3	4	5	6	7	8
Sample Depth (m)								
Sampling Date	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023

Determinand	Codes	Units	LOD								
Phenols											
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons											
Naphthalene	N	mg/kg	0.1	0.4	0.9	< 0.1	0.6	0.5	< 0.1	< 0.1	0.4
Acenaphthylene	N	mg/kg	0.1	0.1	0.6	< 0.1	< 0.1	0.1	< 0.1	< 0.1	0.1
Acenaphthene	N	mg/kg	0.1	0.3	0.5	< 0.1	0.4	0.5	0.2	0.2	0.2
Fluorene	N	mg/kg	0.1	< 0.1	0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	N	mg/kg	0.1	1.2	2.7	< 0.1	0.6	1.1	0.2	0.2	0.7
Anthracene	N	mg/kg	0.1	0.3	0.8	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.2
Fluoranthene	N	mg/kg	0.1	1.7	7.7	< 0.1	0.3	1.7	0.2	0.2	1.5
Pyrene	N	mg/kg	0.1	1.3	6.6	< 0.1	0.2	1.5	0.2	0.1	1.2
Benzo(a)anthracene	N	mg/kg	0.1	0.7	4.7	< 0.1	0.2	1.2	0.1	< 0.1	0.9
Chrysene	N	mg/kg	0.1	1.1	5.7	< 0.1	0.3	1.7	0.2	0.1	1.2
Benzo(b)fluoranthene	N	mg/kg	0.1	1.3	6.0	< 0.1	0.4	1.9	0.2	0.2	1.4
Benzo(k)fluoranthene	N	mg/kg	0.1	1.3	5.6	< 0.1	0.3	1.7	0.3	0.1	1.1
Benzo(a)pyrene	N	mg/kg	0.1	1.0	6.4	< 0.1	0.3	1.5	0.2	0.1	1.2
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.1	0.7	4.9	< 0.1	0.2	0.9	0.3	0.1	0.9
Dibenzo(a,h)anthracene	N	mg/kg	0.1	0.2	1.2	< 0.1	< 0.1	0.2	0.1	< 0.1	0.3
Benzo[g,h,i]perylene	N	mg/kg	0.1	0.7	4.4	< 0.1	0.2	1.0	0.3	0.1	0.9
Total PAH(16)	N	mg/kg	0.4	12.4	58.8	< 0.4	4.2	15.8	2.7	1.8	12.3

Tests marked N are not UKAS accredited.
The Environmental Laboratory Ltd. Reg. No. 3882193

Results Summary

Report No.: 23-51379, issue number 1

ELAB Reference	347080	347081	347082	347083	347084	347085	347086	347087
Customer Reference								
Sample ID								
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	1	2	3	4	5	6	7	8
Sample Depth (m)								
Sampling Date	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023

Determinand	Codes	Units	LOD							
BTEX										
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	N	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH CWG										
>C5-C6 Aliphatic (HS_1D_MS_AL)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS_AL)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (EH_CU_1D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_CU_1D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_CU_1D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_CU_1D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	10.7	< 1.0	< 1.0	< 1.0
>C16-C35 Aliphatic (EH_CU_1D_AL)	N	mg/kg	1	35.0	< 1.0	< 1.0	< 1.0	247	33.9	10.8	20.4
>C21-C35 Aliphatic (EH_CU_1D_AL)	N	mg/kg	1	34.7	1.0	< 1.0	< 1.0	236	34.3	11.8	20.2
>C35-C40 Aliphatic (EH_CU_1D_AL)	N	mg/kg	1	6.5	< 1.0	< 1.0	< 1.0	46.9	10.7	2.2	6.5
Total (>C5-C40) Aliphatic (HS_1D_MS+EH_CU_1D_AL)	N	mg/kg	1	41.2	< 1.0	< 1.0	< 1.0	293	44.9	14.0	26.7
>C5-C7 Aromatic (HS_1D_MS_AR)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS_AR)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (EH_CU_1D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_CU_1D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_CU_1D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_CU_1D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	13.6	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic (EH_CU_1D_AR)	N	mg/kg	1	27.1	9.7	3.9	10.7	284	37.3	19.1	38.7
>C35-C40 Aromatic (EH_CU_1D_AR)	N	mg/kg	1	6.5	3.8	1.7	2.5	71.5	15.4	8.2	17.7
Total (>C5-C40) Aromatic (HS_1D_MS+EH_CU_1D_AR)	N	mg/kg	1	33.6	13.5	5.6	13.2	369	52.7	27.3	56.5
Total (>C5-C40) Ali/Aro (HS_1D_MS+EH_CU_1D_Total)	N	mg/kg	1	74.8	13.5	5.6	13.2	663	97.6	41.2	83.2

Method Summary

Report No.: 23-51379, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Hexavalent chromium	N	As submitted sample	05/12/2023	110	Colorimetry
pH	M	Air dried sample	08/12/2023	113	Electromeric
Acid Soluble Sulphate	U	Air dried sample	11/12/2023	115	Ion Chromatography
Aqua regia extractable metals	M	Air dried sample	05/12/2023	300	ICPMS
Phenols in solids	N	As submitted sample	05/12/2023	121	HPLC
PAH (GC-FID)	N	As submitted sample	05/12/2023	133	GC-FID
Low range Aliphatic hydrocarbons soil	N	As submitted sample	06/12/2023	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	06/12/2023	181	GC-MS
BTEX in solids	M	As submitted sample	06/12/2023	181A	GC-MS
Aliphatic hydrocarbons in soil	N	As submitted sample	11/12/2023	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	11/12/2023	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	11/12/2023	214	GC-FID
Soil organic matter	U	Air dried sample	05/12/2023	BS1377:P3	Titrimetry

Tests marked N are not UKAS accredited

Report Information

Report No.: 23-51379, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

Annex 3: Waste Classification Assessment

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.

BFM60-LN5HM-0V05W

Job name

A2326

Description/Comments

SAMPLE MATERIAL (STONY MADE GROUND) COLLECTED FROM WITHIN SITE BOUNDS. ALL EXCESS WASTE TO BE DISPOSED OF AT A LICENSED LANDFILL FACLITY WITH HAULAGE AND DISPOSAL RECORDS TO BE KEPT FOR FUTURE REFERENCE. PLEASE PROVIDE A COPY OF THIS REPORT TO YOUR HAULIER FOR THEIR RECORDS.

Project

OLD HAWKINS MOTOR SITE - PLANNING REF: PA23/02583

Site

OLD HAWKINS MOTOR SITE, HAYLE TERRACE, HAYLE, CORNWALL. TR27 4BT

Classified by

Name:
Jeremy Williamson
Company:
Approved Site Investigations
Date:
20 Dec 2023 11:02 GMT
Telephone:
01209 204744

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: -

Course	Date
Hazardous Waste Classification	-

Purpose of classification

7 - Disposal of Waste

Address of the waste

OLD HAWKINS MOTOR SITE, HAYLE TERRACE, HAYLE, CORNWALL. TR27 4BT **Post Code** TR27 4BT

SIC for the process giving rise to the waste

43120 Site preparation

Description of industry/producer giving rise to the waste

REDEVELOPMENT OF SITE TO PUBLIC OPEN SPACE.

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

WASTE CREATED THROUGH REMEDIAL WORKS.

Description of the waste

MIXED STONY MADE GROUND (PRIMARILY MINE WASTE ROCK), IMPORTED SUBSOIL.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	Sample 1	1m	Hazardous	HP 14	3
2	Sample 2	1m	Hazardous	HP 7, HP 14	6
3	Sample 3	1m	Hazardous	HP 14	9
4	Sample 4	1m	Hazardous	HP 14	12
5	Sample 5	1m	Hazardous	HP 14	15
6	Sample 6	1m	Non Hazardous		18
7	Sample 7	1m	Non Hazardous		21
8	Sample 8	1m	Hazardous	HP 14	24

Related documents

#	Name	Description
1	ASI Suite 2	waste stream template used to create this Job

Report

Created by: Jeremy Williamson

Created date: 20 Dec 2023 11:02 GMT

Classification of sample: Sample 1

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
Sample 1
Sample Depth:
1m m
Moisture content:
9.6%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

copper(II) oxide: (compound conc.: 0.252%)
zinc oxide: (compound conc.: 0.376%)

Determinands

Moisture content: 9.6% Dry 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 compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	687 mg/kg		626.825 mg/kg	0.0627 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	0.8 mg/kg		0.73 mg/kg	0.000073 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		31.1 mg/kg	1.462	41.473 mg/kg	0.00415 %	✓	
4	copper { copper(II) oxide }	029-016-00-6	215-269-1	1317-38-0		2210 mg/kg	1.252	2524.112 mg/kg	0.252 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	193 mg/kg		176.095 mg/kg	0.0176 %	✓	
6	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		**<LOD**
7	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		75.2 mg/kg	1.273	87.317 mg/kg	0.00873 %	✓	

#		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
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.3	mg/kg	1.405	1.667	mg/kg	0.000167 %	✓	
9		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		3310	mg/kg	1.245	3759.127	mg/kg	0.376 %	✓	
10		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				<0.8	mg/kg	2.27	<1.816	mg/kg	<0.000182 %		<LOD
11		pH			PH		7.5	pH		7.5	pH	7.5 pH		
12		phenol	604-001-00-2	203-632-7	108-95-2		<6	mg/kg		<6	mg/kg	<0.0006 %		<LOD
13		naphthalene	601-052-00-2	202-049-5	91-20-3		0.4	mg/kg		0.365	mg/kg	0.0000365 %	✓	
14		acenaphthylene		205-917-1	208-96-8		0.1	mg/kg		0.0912	mg/kg	0.00000912 %	✓	
15		acenaphthene		201-469-6	83-32-9		0.3	mg/kg		0.274	mg/kg	0.0000274 %	✓	
16		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
17		phenanthrene		201-581-5	85-01-8		1.2	mg/kg		1.095	mg/kg	0.000109 %	✓	
18		anthracene		204-371-1	120-12-7		0.3	mg/kg		0.274	mg/kg	0.0000274 %	✓	
19		fluoranthene		205-912-4	206-44-0		1.7	mg/kg		1.551	mg/kg	0.000155 %	✓	
20		pyrene		204-927-3	129-00-0		1.3	mg/kg		1.186	mg/kg	0.000119 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.7	mg/kg		0.639	mg/kg	0.0000639 %	✓	
22		chrysene	601-048-00-0	205-923-4	218-01-9		1.1	mg/kg		1.004	mg/kg	0.0001 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.3	mg/kg		1.186	mg/kg	0.000119 %	✓	
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.3	mg/kg		1.186	mg/kg	0.000119 %	✓	
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1	mg/kg		0.912	mg/kg	0.0000912 %	✓	
26		indeno[123-cd]pyrene		205-893-2	193-39-5		0.7	mg/kg		0.639	mg/kg	0.0000639 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.2	mg/kg		0.182	mg/kg	0.0000182 %	✓	
28		benzo[ghi]perylene		205-883-8	191-24-2		0.7	mg/kg		0.639	mg/kg	0.0000639 %	✓	
29		benzene	601-020-00-8	200-753-7	71-43-2		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
30		toluene	601-021-00-3	203-625-9	108-88-3		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
31		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
32		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]		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<10	mg/kg		<10	mg/kg	<0.001 %		<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							
34		TPH (C6 to C40) petroleum group		TPH		74.8 mg/kg		68.248 mg/kg	0.00682 %	✓	
								Total:	0.736 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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 SOILD WASTE ONLY, NO LIQUID FRACTION PRESENT.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00682%)

Classification of sample: Sample 2

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
Sample 2
Sample Depth:
1m m
Moisture content:
16.2%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

arsenic compounds, with the exception of those specified elsewhere in this Annex: (Note 1 conc.: 0.116%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

arsenic compounds, with the exception of those specified elsewhere in this Annex: (Note 1 conc.: 0.116%)
copper(II) oxide: (compound conc.: 0.327%)
zinc oxide: (compound conc.: 0.246%)

Determinands

Moisture content: 16.2% Dry 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 compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	1350 mg/kg		1161.79 mg/kg	0.116 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	1.6 mg/kg		1.377 mg/kg	0.000138 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		39.1 mg/kg	1.462	49.18 mg/kg	0.00492 %	✓	
4	copper { copper(II) oxide }	029-016-00-6	215-269-1	1317-38-0		3040 mg/kg	1.252	3274.872 mg/kg	0.327 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	188 mg/kg		161.79 mg/kg	0.0162 %	✓	

#		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
6		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
7		nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		65.8	mg/kg	1.273	72.062	mg/kg	0.00721 %	✓	
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
9		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		2300	mg/kg	1.245	2463.72	mg/kg	0.246 %	✓	
10		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				<0.8	mg/kg	2.27	<1.816	mg/kg	<0.000182 %		<LOD
11		pH			PH		7.7	pH		7.7	pH	7.7 pH		
12		phenol	604-001-00-2	203-632-7	108-95-2		<6	mg/kg		<6	mg/kg	<0.0006 %		<LOD
13		naphthalene	601-052-00-2	202-049-5	91-20-3		0.9	mg/kg		0.775	mg/kg	0.0000775 %	✓	
14		acenaphthylene		205-917-1	208-96-8		0.6	mg/kg		0.516	mg/kg	0.0000516 %	✓	
15		acenaphthene		201-469-6	83-32-9		0.5	mg/kg		0.43	mg/kg	0.000043 %	✓	
16		fluorene		201-695-5	86-73-7		0.1	mg/kg		0.0861	mg/kg	0.00000861 %	✓	
17		phenanthrene		201-581-5	85-01-8		2.7	mg/kg		2.324	mg/kg	0.000232 %	✓	
18		anthracene		204-371-1	120-12-7		0.8	mg/kg		0.688	mg/kg	0.0000688 %	✓	
19		fluoranthene		205-912-4	206-44-0		7.7	mg/kg		6.627	mg/kg	0.000663 %	✓	
20		pyrene		204-927-3	129-00-0		6.6	mg/kg		5.68	mg/kg	0.000568 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		4.7	mg/kg		4.045	mg/kg	0.000404 %	✓	
22		chrysene	601-048-00-0	205-923-4	218-01-9		5.7	mg/kg		4.905	mg/kg	0.000491 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		6	mg/kg		5.164	mg/kg	0.000516 %	✓	
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		5.6	mg/kg		4.819	mg/kg	0.000482 %	✓	
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		6.4	mg/kg		5.508	mg/kg	0.000551 %	✓	
26		indeno[123-cd]pyrene		205-893-2	193-39-5		4.9	mg/kg		4.217	mg/kg	0.000422 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		1.2	mg/kg		1.033	mg/kg	0.000103 %	✓	
28		benzo[ghi]perylene		205-883-8	191-24-2		4.4	mg/kg		3.787	mg/kg	0.000379 %	✓	
29		benzene	601-020-00-8	200-753-7	71-43-2		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
30		toluene	601-021-00-3	203-625-9	108-88-3		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
31		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<10	mg/kg		<10	mg/kg	<0.001 %		<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									
32		xylene				<10	mg/kg		<10	mg/kg	<0.001 %		<**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]									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		TPH (C6 to C40) petroleum group				13.5	mg/kg		11.618	mg/kg	0.00116 %	✓	
				TPH									
										Total:	0.731 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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 SOILD WASTE ONLY, NO LIQUID FRACTION PRESENT.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00116%)

Classification of sample: Sample 3

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
Sample 3
Sample Depth:
1m m
Moisture content:
10.1%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

copper(II) oxide: (compound conc.: 0.49%)
zinc oxide: (compound conc.: 0.24%)

Determinands

Moisture content: 10.1% Dry 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 compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	301 mg/kg		273.388 mg/kg	0.0273 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	3 mg/kg		2.725 mg/kg	0.000272 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		15.4 mg/kg	1.462	20.443 mg/kg	0.00204 %	✓	
4	copper { copper(II) oxide }	029-016-00-6	215-269-1	1317-38-0		4310 mg/kg	1.252	4900.234 mg/kg	0.49 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	76.3 mg/kg		69.301 mg/kg	0.00693 %	✓	
6	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		**<LOD**
7	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		48.5 mg/kg	1.273	56.059 mg/kg	0.00561 %	✓	

#		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
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
9		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		2120	mg/kg	1.245	2396.724	mg/kg	0.24 %	✓	
10		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				<0.8	mg/kg	2.27	<1.816	mg/kg	<0.000182 %		<LOD
11		pH			PH		7.7	pH		7.7	pH	7.7 pH		
12		phenol	604-001-00-2	203-632-7	108-95-2		<6	mg/kg		<6	mg/kg	<0.0006 %		<LOD
13		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
14		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
15		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
16		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
17		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
18		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
19		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
20		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
22		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
26		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
28		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29		benzene	601-020-00-8	200-753-7	71-43-2		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
30		toluene	601-021-00-3	203-625-9	108-88-3		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
31		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
32		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]		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<10	mg/kg		<10	mg/kg	<0.001 %		<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							
34		TPH (C6 to C40) petroleum group		TPH		5.6 mg/kg		5.086 mg/kg	0.000509 %	✓	
								Total:	0.779 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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 SOILD WASTE ONLY, NO LIQUID FRACTION PRESENT.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0005%)

Classification of sample: Sample 4

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
Sample 4
Sample Depth:
1m m
Moisture content:
13%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

copper(II) oxide: (compound conc.: 0.785%)
zinc oxide: (compound conc.: 0.377%)

Determinands

Moisture content: 13% Dry 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 compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	437 mg/kg		386.726 mg/kg	0.0387 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	5.2 mg/kg		4.602 mg/kg	0.00046 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		22.9 mg/kg	1.462	29.619 mg/kg	0.00296 %	✓	
4	copper { copper(II) oxide }	029-016-00-6	215-269-1	1317-38-0		7090 mg/kg	1.252	7854.068 mg/kg	0.785 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	61.7 mg/kg		54.602 mg/kg	0.00546 %	✓	
6	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<**LOD**
7	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		81 mg/kg	1.273	91.221 mg/kg	0.00912 %	✓	

#		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
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
9		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		3420	mg/kg	1.245	3767.187	mg/kg	0.377 %	✓	
10		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				<0.8	mg/kg	2.27	<1.816	mg/kg	<0.000182 %		<**LOD**
11		pH			PH		7.3	pH		7.3	pH	7.3 pH		
12		phenol	604-001-00-2	203-632-7	108-95-2		<6	mg/kg		<6	mg/kg	<0.0006 %		<**LOD**
13		naphthalene	601-052-00-2	202-049-5	91-20-3		0.6	mg/kg		0.531	mg/kg	0.0000531 %	✓	
14		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
15		acenaphthene		201-469-6	83-32-9		0.4	mg/kg		0.354	mg/kg	0.0000354 %	✓	
16		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
17		phenanthrene		201-581-5	85-01-8		0.6	mg/kg		0.531	mg/kg	0.0000531 %	✓	
18		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		0.3	mg/kg		0.265	mg/kg	0.0000265 %	✓	
20		pyrene		204-927-3	129-00-0		0.2	mg/kg		0.177	mg/kg	0.0000177 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.2	mg/kg		0.177	mg/kg	0.0000177 %	✓	
22		chrysene	601-048-00-0	205-923-4	218-01-9		0.3	mg/kg		0.265	mg/kg	0.0000265 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.4	mg/kg		0.354	mg/kg	0.0000354 %	✓	
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.3	mg/kg		0.265	mg/kg	0.0000265 %	✓	
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.3	mg/kg		0.265	mg/kg	0.0000265 %	✓	
26		indeno[123-cd]pyrene		205-893-2	193-39-5		0.2	mg/kg		0.177	mg/kg	0.0000177 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
28		benzo[ghi]perylene		205-883-8	191-24-2		0.2	mg/kg		0.177	mg/kg	0.0000177 %	✓	
29		benzene	601-020-00-8	200-753-7	71-43-2		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
30		toluene	601-021-00-3	203-625-9	108-88-3		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
31		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
32		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]		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<10	mg/kg		<10	mg/kg	<0.001 %		<**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							
34		TPH (C6 to C40) petroleum group				13.2 mg/kg		11.681 mg/kg	0.00117 %	✓	
				TPH							
								Total:	1.226 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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 SOILD WASTE ONLY, NO LIQUID FRACTION PRESENT.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00117%)

Classification of sample: Sample 5

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
Sample 5
Sample Depth:
1m m
Moisture content:
9.4%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

copper(II) oxide: (compound conc.: 0.31%)
zinc oxide: (compound conc.: 0.292%)

Determinands

Moisture content: 9.4% Dry 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 compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	394 mg/kg		360.146 mg/kg	0.036 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	2 mg/kg		1.828 mg/kg	0.000183 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		16.4 mg/kg	1.462	21.91 mg/kg	0.00219 %	✓	
4	copper { copper(II) oxide }	029-016-00-6	215-269-1	1317-38-0		2710 mg/kg	1.252	3100.836 mg/kg	0.31 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	128 mg/kg		117.002 mg/kg	0.0117 %	✓	
6	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		**<LOD**
7	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		87.8 mg/kg	1.273	102.133 mg/kg	0.0102 %	✓	

#		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
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.2	mg/kg	1.405	1.541	mg/kg	0.000154 %	✓	
9		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		2570	mg/kg	1.245	2924.054	mg/kg	0.292 %	✓	
10		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				<0.8	mg/kg	2.27	<1.816	mg/kg	<0.000182 %		<LOD
11		pH			PH		7.3	pH		7.3	pH	7.3 pH		
12		phenol	604-001-00-2	203-632-7	108-95-2		<6	mg/kg		<6	mg/kg	<0.0006 %		<LOD
13		naphthalene	601-052-00-2	202-049-5	91-20-3		0.5	mg/kg		0.457	mg/kg	0.0000457 %	✓	
14		acenaphthylene		205-917-1	208-96-8		0.1	mg/kg		0.0914	mg/kg	0.00000914 %	✓	
15		acenaphthene		201-469-6	83-32-9		0.5	mg/kg		0.457	mg/kg	0.0000457 %	✓	
16		fluorene		201-695-5	86-73-7		0.1	mg/kg		0.0914	mg/kg	0.00000914 %	✓	
17		phenanthrene		201-581-5	85-01-8		1.1	mg/kg		1.005	mg/kg	0.000101 %	✓	
18		anthracene		204-371-1	120-12-7		0.2	mg/kg		0.183	mg/kg	0.0000183 %	✓	
19		fluoranthene		205-912-4	206-44-0		1.7	mg/kg		1.554	mg/kg	0.000155 %	✓	
20		pyrene		204-927-3	129-00-0		1.5	mg/kg		1.371	mg/kg	0.000137 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.2	mg/kg		1.097	mg/kg	0.00011 %	✓	
22		chrysene	601-048-00-0	205-923-4	218-01-9		1.7	mg/kg		1.554	mg/kg	0.000155 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.9	mg/kg		1.737	mg/kg	0.000174 %	✓	
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.7	mg/kg		1.554	mg/kg	0.000155 %	✓	
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.5	mg/kg		1.371	mg/kg	0.000137 %	✓	
26		indeno[123-cd]pyrene		205-893-2	193-39-5		0.9	mg/kg		0.823	mg/kg	0.0000823 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.2	mg/kg		0.183	mg/kg	0.0000183 %	✓	
28		benzo[ghi]perylene		205-883-8	191-24-2		1	mg/kg		0.914	mg/kg	0.0000914 %	✓	
29		benzene	601-020-00-8	200-753-7	71-43-2		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
30		toluene	601-021-00-3	203-625-9	108-88-3		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
31		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
32		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]		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<10	mg/kg		<10	mg/kg	<0.001 %		<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							
34		TPH (C6 to C40) petroleum group		TPH		663 mg/kg		606.033 mg/kg	0.0606 %	✓	
								Total:	0.731 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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 SOILD WASTE ONLY, NO LIQUID FRACTION PRESENT.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0606%)

Classification of sample: Sample 6

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

Sample details

Sample name:
Sample 6
Sample Depth:
1m m
Moisture content:
9.2%
(dry 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: 9.2% Dry 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 compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	602 mg/kg		551.282 mg/kg	0.0551 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	0.6 mg/kg		0.549 mg/kg	0.0000549 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		18.3 mg/kg	1.462	24.493 mg/kg	0.00245 %	✓	
4	copper { copper(II) oxide }	029-016-00-6	215-269-1	1317-38-0		1360 mg/kg	1.252	1558.989 mg/kg	0.156 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	131 mg/kg		119.963 mg/kg	0.012 %	✓	
6	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<**LOD**
7	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		35 mg/kg	1.273	40.788 mg/kg	0.00408 %	✓	
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.7 mg/kg	1.405	2.187 mg/kg	0.000219 %	✓	
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		810 mg/kg	1.245	923.277 mg/kg	0.0923 %	✓	
10	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				<0.8 mg/kg	2.27	<1.816 mg/kg	<0.000182 %		<**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									
11		pH				7.3	pH		7.3	pH	7.3 pH		
				PH									
12		phenol				<6	mg/kg		<6	mg/kg	<0.0006 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
13		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
14		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-917-1	208-96-8									
15		acenaphthene				0.2	mg/kg		0.183	mg/kg	0.0000183 %	✓	
			201-469-6	83-32-9									
16		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
17		phenanthrene				0.2	mg/kg		0.183	mg/kg	0.0000183 %	✓	
			201-581-5	85-01-8									
18		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-371-1	120-12-7									
19		fluoranthene				0.2	mg/kg		0.183	mg/kg	0.0000183 %	✓	
			205-912-4	206-44-0									
20		pyrene				0.2	mg/kg		0.183	mg/kg	0.0000183 %	✓	
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.1	mg/kg		0.0916	mg/kg	0.00000916 %	✓	
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				0.2	mg/kg		0.183	mg/kg	0.0000183 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				0.2	mg/kg		0.183	mg/kg	0.0000183 %	✓	
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				0.3	mg/kg		0.275	mg/kg	0.0000275 %	✓	
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				0.2	mg/kg		0.183	mg/kg	0.0000183 %	✓	
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				0.3	mg/kg		0.275	mg/kg	0.0000275 %	✓	
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				0.1	mg/kg		0.0916	mg/kg	0.00000916 %	✓	
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				0.3	mg/kg		0.275	mg/kg	0.0000275 %	✓	
			205-883-8	191-24-2									
29		benzene				<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
30		toluene				<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
32		xylene				<10	mg/kg		<10	mg/kg	<0.001 %		<**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]									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		TPH (C6 to C40) petroleum group				97.6	mg/kg		89.377	mg/kg	0.00894 %	✓	
				TPH									
										Total:	0.337 %		

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 SOILD WASTE ONLY, NO LIQUID FRACTION PRESENT.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00894%)

Classification of sample: Sample 7

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

Sample details

Sample name:
Sample 7
Sample Depth:
1m m
Moisture content:
8.7%
(dry 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: 8.7% Dry 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 compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	329 mg/kg		302.668 mg/kg	0.0303 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		**<LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		33.3 mg/kg	1.462	44.774 mg/kg	0.00448 %	✓	
4	copper { copper(II) oxide }	029-016-00-6	215-269-1	1317-38-0		974 mg/kg	1.252	1121.647 mg/kg	0.112 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	103 mg/kg		94.756 mg/kg	0.00948 %	✓	
6	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		**<LOD**
7	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		39.9 mg/kg	1.273	46.712 mg/kg	0.00467 %	✓	
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		**<LOD**
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		683 mg/kg	1.245	782.097 mg/kg	0.0782 %	✓	
10	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				<0.8 mg/kg	2.27	<1.816 mg/kg	<0.000182 %		**<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
11		pH			PH		8.2	pH		8.2	pH	8.2 pH		
12		phenol	604-001-00-2	203-632-7	108-95-2		<6	mg/kg		<6	mg/kg	<0.0006 %		<**LOD**
13		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
14		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
15		acenaphthene		201-469-6	83-32-9		0.2	mg/kg		0.184	mg/kg	0.0000184 %	✓	
16		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
17		phenanthrene		201-581-5	85-01-8		0.2	mg/kg		0.184	mg/kg	0.0000184 %	✓	
18		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		0.2	mg/kg		0.184	mg/kg	0.0000184 %	✓	
20		pyrene		204-927-3	129-00-0		0.1	mg/kg		0.092	mg/kg	0.0000092 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
22		chrysene	601-048-00-0	205-923-4	218-01-9		0.1	mg/kg		0.092	mg/kg	0.0000092 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.2	mg/kg		0.184	mg/kg	0.0000184 %	✓	
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.1	mg/kg		0.092	mg/kg	0.0000092 %	✓	
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.1	mg/kg		0.092	mg/kg	0.0000092 %	✓	
26		indeno[123-cd]pyrene		205-893-2	193-39-5		0.1	mg/kg		0.092	mg/kg	0.0000092 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
28		benzo[ghi]perylene		205-883-8	191-24-2		0.1	mg/kg		0.092	mg/kg	0.0000092 %	✓	
29		benzene	601-020-00-8	200-753-7	71-43-2		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
30		toluene	601-021-00-3	203-625-9	108-88-3		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
31		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
32		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]		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
34		TPH (C6 to C40) petroleum group			TPH		41.2	mg/kg		37.902	mg/kg	0.00379 %	✓	
											Total:	0.249 %		

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 SOILD WASTE ONLY, NO LIQUID FRACTION PRESENT.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00379%)

Classification of sample: Sample 8

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
Sample 8
Sample Depth:
1m m
Moisture content:
11.4%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

copper(II) oxide: (compound conc.: 0.602%)
zinc oxide: (compound conc.: 0.314%)

Determinands

Moisture content: 11.4% Dry 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 compounds, with the exception of those specified elsewhere in this Annex }	033-002-00-5			1	311 mg/kg		279.174 mg/kg	0.0279 %	✓	
2	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	1.3 mg/kg		1.167 mg/kg	0.000117 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		37.5 mg/kg	1.462	49.2 mg/kg	0.00492 %	✓	
4	copper { copper(II) oxide }	029-016-00-6	215-269-1	1317-38-0		5360 mg/kg	1.252	6022.911 mg/kg	0.602 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	91.4 mg/kg		82.047 mg/kg	0.0082 %	✓	
6	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<**LOD**
7	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		75.5 mg/kg	1.273	86.248 mg/kg	0.00862 %	✓	

#		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
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
9		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		2810	mg/kg	1.245	3139.718	mg/kg	0.314 %	✓	
10		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				<0.8	mg/kg	2.27	<1.816	mg/kg	<0.000182 %		<**LOD**
11		pH			PH		8	pH		8	pH	8pH		
12		phenol	604-001-00-2	203-632-7	108-95-2		<6	mg/kg		<6	mg/kg	<0.0006 %		<**LOD**
13		naphthalene	601-052-00-2	202-049-5	91-20-3		0.4	mg/kg		0.359	mg/kg	0.0000359 %	✓	
14		acenaphthylene		205-917-1	208-96-8		0.1	mg/kg		0.0898	mg/kg	0.00000898 %	✓	
15		acenaphthene		201-469-6	83-32-9		0.2	mg/kg		0.18	mg/kg	0.000018 %	✓	
16		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
17		phenanthrene		201-581-5	85-01-8		0.7	mg/kg		0.628	mg/kg	0.0000628 %	✓	
18		anthracene		204-371-1	120-12-7		0.2	mg/kg		0.18	mg/kg	0.000018 %	✓	
19		fluoranthene		205-912-4	206-44-0		1.5	mg/kg		1.346	mg/kg	0.000135 %	✓	
20		pyrene		204-927-3	129-00-0		1.2	mg/kg		1.077	mg/kg	0.000108 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.9	mg/kg		0.808	mg/kg	0.0000808 %	✓	
22		chrysene	601-048-00-0	205-923-4	218-01-9		1.2	mg/kg		1.077	mg/kg	0.000108 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.4	mg/kg		1.257	mg/kg	0.000126 %	✓	
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.1	mg/kg		0.987	mg/kg	0.0000987 %	✓	
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.2	mg/kg		1.077	mg/kg	0.000108 %	✓	
26		indeno[123-cd]pyrene		205-893-2	193-39-5		0.9	mg/kg		0.808	mg/kg	0.0000808 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.3	mg/kg		0.269	mg/kg	0.0000269 %	✓	
28		benzo[ghi]perylene		205-883-8	191-24-2		0.9	mg/kg		0.808	mg/kg	0.0000808 %	✓	
29		benzene	601-020-00-8	200-753-7	71-43-2		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
30		toluene	601-021-00-3	203-625-9	108-88-3		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
31		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
32		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]		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<10	mg/kg		<10	mg/kg	<0.001 %		<**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							
34		TPH (C6 to C40) petroleum group				83.2 mg/kg		74.686 mg/kg	0.00747 %	✓	
				TPH							
								Total:	0.981 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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 SOILD WASTE ONLY, NO LIQUID FRACTION PRESENT.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00747%)

Appendix A: Classifier defined and non GB MCL determinands

arsenic compounds, with the exception of those specified elsewhere in this Annex

GB MCL index number: 033-002-00-5
Description/Comments: Worst Case: IARC considers arsenic compounds Group 1; Carcinogenic to humans
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex

GB MCL index number: 048-001-00-5
Description/Comments: Worst Case: IARC considers cadmium compounds Group 1; Carcinogenic to humans
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

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

Description/Comments: Data from ECHA's C&L inventory database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 30 Apr 2020
Hazard Statements: Acute Tox. 4; H302 , Skin Sens. 1; H317 , Eye Irrit. 2; H319

lead compounds with the exception of those specified elsewhere in this Annex

GB MCL index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2
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 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

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

- **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

- **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

Appendix B: Rationale for selection of metal species

arsenic {arsenic compounds, with the exception of those specified elsewhere in this Annex}

WORST CASE SPECIES BASED UPON THE AVAILABLE SITE DATA.

cadmium {cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex}

WORST CASE SPECIES BASED UPON THE AVAILABLE SITE DATA.

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

WORST CASE SPECIES BASED UPON THE AVAILABLE SITE DATA.

copper {copper(II) oxide}

WORST CASE SPECIES BASED UPON THE AVAILABLE SITE DATA.

lead {lead compounds with the exception of those specified elsewhere in this Annex}

WORST CASE SPECIES BASED UPON THE AVAILABLE SITE DATA.

mercury {inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex}

WORST CASE SPECIES BASED UPON THE AVAILABLE SITE DATA.

nickel {nickel(II) oxide (nickel monoxide)}

WORST CASE SPECIES BASED UPON THE AVAILABLE SITE DATA.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

WORST CASE SPECIES BASED UPON THE AVAILABLE SITE DATA.

zinc {zinc oxide}

WORST CASE SPECIES BASED UPON THE AVAILABLE SITE DATA.

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 UPON THE AVAILABLE SITE DATA.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2023.352.5868.10865 (18 Dec 2023)
HazWasteOnline Database: 2023.348.5858.10852 (16 Dec 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
GB MCL List v2.0 - version 2.0 of 20th October 2023

Annex 4: Site Photographs

Photograph 1.

View: -

Sample trial pit S1.

Photograph 2.

View: -

Sample material from location S1.

Photograph 3.

View: -

Sample trial pit S2.

Photograph 4.

View: -

Sample material from location S2.

Photograph 5.

View:

Sample trial pit S3.

Photograph 6.

View: -

Sample material from location S3.

Photograph 7.

View:

Sample trial pit S4.

Photograph 8.

View: -

Sample material from location S4.

Photograph 9.

View: -

Sample trial pit S5.

Photograph 10.

View: -

Sample material from location S5.

Photograph 11.

View: -

Sample trial pit S6.

Photograph 12.

View:

Sample material from location S6.

Photograph 13.

View: -

Sample trial pit S7 was extended to a depth of 1.5m bgl due to a compacted layer of infill, in-turn checking the consistency of the material.

Photograph 14.

View: -

Sample material from location S7.

Photograph 15.

View:

Sample trial pit S8.

Photograph 16.

View: -

Sample material from location S8.

Photograph 17.

View: -

Collected sample material being made ready for transportation to ELAB for chemical analysis.

Photograph 18.

View: west

Looking across the site area following the investigation, with all trial pits having been reinstated.

Annex 5: References

BS EN 206-1/BS 8500 Concrete for normal use (2004)

BSI 10175:2011 Investigation of Potentially Contaminated Sites - Code of Practice

BRE Special Digest 1 Concrete in Aggressive Ground (August 2001)

Category 4 Screening Levels (SP1010) for Assessment of Land Affected by Contamination (December 2014)

CIRCA Report C552 Contaminated Land Risk Assessment, A Guide To Good Practice (2001)

CL:AIRE Research Bulletin RB17, A Pragmatic Approach To Ground Gas Risk Assessment (2012)

CLR7 Assessment of Risks to Human Health from Land Contamination: An Overview of the Development of Soil Guideline Values and Related Research (Defra and Environment Agency, 2002a).

CLR8 Potential Contaminants for the Assessment of Land (Defra and Environment Agency, 2002b)

CLR9 Contaminants in Soil: Collation of Toxicological Data and Intake Values for Humans (Defra and Environment Agency, 2002c)

CLR10/11 The Contaminated Land Exposure Assessment Model (CLEA): Technical Basis and Algorithms (Defra and Environment Agency, 2002d)

CLR11 Model Procedures for the Management of Land Contamination (2004)

CLEA Briefing Note 1 (Environment Agency 2004a)

CLEA Briefing Note 3 (Environment Agency 2004c)

EA Guidance for the Safe Development of Housing on Land Affected by Contamination

EA Guidance Waste Destined for Disposal in Landfills (2002)

EA Using Soil Guideline Values, Science report: SC050021 /SGV introduction (March 2009)

E.A Soil Guideline Values

E.A (2020), Land Contamination Risk Management (LCRM)

HPA Contaminated Land Information Sheet Risk Assessment Approaches For Polycyclic Aromatic Hydrocarbons (PAHs) 2010

LQM/CIEH GAC Suitable 4 use levels (S4ULs) 2014

PPG 5 Works In, Near or Liable to Affect Watercourses

PPG 7: Fueling Stations Construction & Operation

Public Health England: Contaminated Land Information Sheet: Risk Assessment Approaches For Polycyclic Aromatic Hydrocarbons (PAHs), (2017)

Sampling Strategies for Contaminated Land, DETR, 1994, (**CLR4**)

SEPA Special Waste Regulations (1996)

Approved Site Investigations Ltd.

ASI Core Services:

- **Contaminated Land Surveys**
- **Soil & Water Analysis Reports**
- **Land Remediation Reports**
- **Site Verification & Completion Reports**
- **Drilling & Ground Profiling Investigations**
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