

**GENERIC RISK ASSESSMENT AND INTERPRETATIVE
GEOTECHNICAL REPORT**

Of

**LAND ADJACENT TO HILL HOUSE,
BAKERS LANE, CHARTHAM, KENT, CT4 7QB**

For

HALSION LIMITED

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APPROVAL & DISTRIBUTION SHEET

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FOREWORD

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1. INTRODUCTION AND BACKGROUND

CET Infrastructure (CET) was instructed by Halsion Limited, by email 29th September 2016, to undertake a ground investigation to provide an initial understanding of any potential ground risk that could adversely impact on the proposed development. To this end, a combined Phase II Generic Risk Assessment (GRA) and Interpretive Geotechnical Report was undertaken of the study site located on land adjacent to Hill House, Bakers Lane, Chartham, CT4 7QB.

It is understood that the site is to be redeveloped to a residential end-use with associated private gardens and car parking.

This report should be read in conjunction with the Preliminary Risk Assessment, which was reported under reference 239792 in March 2015.

This report has been prepared for the sole use of the Client for the purpose described and no extended duty of care to any third party is implied or offered. Third parties using any information contained within this report do so at their own risk.

The comments given in this report and the opinions expressed herein are based on the information received, the conditions encountered during site works, and on the results of tests made in the field and laboratory. However, there may be conditions prevailing at the site which have not been disclosed by the investigation and which have not been taken into account in the report.

2. SITE SETTING

Site Location

The study site comprises an irregular shaped plot of land situated to the immediate northwest of Baker's Lane, Chartham, Kent and occupies an area of some 1.2Ha. The site is centred on National Grid Reference TQ 107 546. A site location plan is attached as Figure 1.

Geological Setting

Reference to publications of the British Geological Survey indicates that the site is underlain by the Seaford Chalk Formation. The geological memoir describes this stratum as 'firm white chalk with nodular and tabular flint seams'.

The chalk is known to contain naturally occurring solution features or manmade dene holes/bell pits. These features are often open with the 'void' arched over by superficial deposits. If the arching material is subjected to an increase in stress, vibration or inundation by water, it may collapse.

No superficial deposits are mapped at the study site.

The Seaford Chalk Formation has been identified as a Principal Aquifer by the Environment Agency. Principal Aquifers are described as layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

The site is located within an Environment Agency groundwater Source Protection Zone (SPZ) I Inner Zone. An SPZ I is defined as 'the 50 day travel time from any point below the water table to the source'.

There are seventeen licensed groundwater abstractions located within 2km of the study site. The closest two records are located 195m north relating to 'paper and printing: general use'.

The nearest potable licensed groundwater abstraction is located 1406m west of the site operated by South Eastern Water Limited.

3. SUMMARY OF PHASE I PRELIMINARY RISK ASSESSMENT

A Preliminary Risk Assessment (PRA) report in the form of a Phase I Desk Study and site reconnaissance was undertaken in March 2015 and reported under reference 298123.

At the time of the walkover survey the south eastern portion of the study site was occupied by a detached residential property bordered by a gravel surfaced driveway, grassed garden areas and decking. It is understood that the southern portion of the site was occupied by a barn that was destroyed by fire. The remainder of the site was occupied by open ground that appeared to have been recent cleared of vegetation.

Historically, with the exception of a several buildings in the southern and central portions of the site it has remained undeveloped until the present day. Anecdotal evidence suggests Hill House has been present on the site since before the 1877 mapping and was subsequently extended as denoted on the 1897 mapping. The configuration of the site has remained largely unchanged since the 1960s.

Based on the historical on site land uses and off-site current and historical uses identified by this assessment it was judged that there was generally a low risk of the study site being impacted by contaminants with potential to pose a risk to human, environmental and built receptors.

4. GROUND INVESTIGATION

Attention is drawn to the fact that whilst every effort has been made to ensure the accuracy of the data supplied and any analysis derived from it, there is a potential for variations in ground conditions and contamination between and beyond the specific locations investigated. No liability can be accepted for any such variations. Furthermore, any recommendations are specific to the client requirements and no liability will be accepted should these be used by third parties without prior consultation with CET.

The site work was carried out on 6th October 2016. The locations of the exploratory holes have been planned, where possible, in accordance with CLR 4 and the site works carried out in the basis of the practices set out in BS10175:2011 and BS5930:1999.

Six trial pits, designated TP01 to TP06, were excavated by mechanical excavator. The locations of the trial pits are shown on the Exploratory Hole Location Plan, Figure 2. The depths of trial pits, descriptions of strata encountered and comments on groundwater conditions are given on the exploratory hole records, Appendix A.

The trial pits were positioned to give a general cover of the site and to include the area identified in the PRA where previous structures had been present. In addition, anecdotal evidence suggested that soils had been temporarily stored in the vicinity of TP06 prior to disposal. Also, this area had been used in the past for the burning of garden waste.

Representative disturbed samples were taken at the depths shown on the exploratory hole logs. Samples for environmental purposes were collected in amber glass jars and prior to being couriered to an accredited laboratory in cool boxes.

The ground levels at the exploratory holes locations were not determined.

5. LABORATORY ANALYSIS

Geotechnical Testing

A geotechnical laboratory testing programme was carried out to provide further information on the engineering properties of the subsoil. Unless stated otherwise, these tests were carried out in accordance with BS 1377 “Methods of Test for Soils for Civil Engineering Purposes.” CET Structures Limited has been accredited for specific tests as indicated below, by the United Kingdom Accreditation Service (UKAS). Individual full format reports for tests are available, if required. Other tests have been carried out by UKAS accredited suppliers to CET Structures Limited. The following tests were carried out and the results are presented in Appendix B:

No.	Test	UKAS Accreditation
6	Moisture Contents	CET
2	Plastic and Liquid Limit Tests	CET
3	pH/Sulphate (water soluble) determinations	CET Supplier

The results of the geotechnical testing are given in Appendix B.

Chemical Testing

In order to test the pollutant linkages identified by the Phase I PRA, and to provide an initial indication of whether the soils beneath the site could pose a significant risk to human and environmental receptors, one sample of Made Ground and four samples of the underlying naturally occurring soils were selected for chemical analysis. The samples were placed in laboratory prepared vessels with a minimum of headspace and labelled accordingly prior to being despatched to accredited analytical laboratory in cool boxes.

The suite of analysis was selected with reference to the findings of the PRA and on site observations and included the following determinands:

- A suite of metals comprising As, B (water soluble), Cu, Cd, Cr, CrVI, Hg, Pb, Ni, Se and Zn;
- Speciated polyaromatic hydrocarbons (USEPA 16);
- Total petroleum hydrocarbons (CWG speciated analysis);
- Benzene, Toluene, EthylBenzene and Xylenes (BTEX) with MTBE;
- Total cyanide;
- Phenols (total monohydric);

- Asbestos (identification only);
- pH and water soluble sulphate; and
- Total Organic Carbon (TOC).

In addition one sample of Made Ground and one of the naturally occurring soil were scheduled for the Waste Acceptance Criteria (WAC) suite of determinands.

The results for this site are attached in full as laboratory report 606126-1 included in Appendix C.

6. GROUND CONDITIONS ENCOUNTERED

Sequence

The sequence of the strata encountered during the investigation generally confirms the anticipated geology as interpreted from the geological map.

Interpolation of strata depths between locations should be undertaken with caution, particularly for depths of Made Ground.

The sequence and thickness of strata are provided below:

Strata Encountered	Depth Encountered (m bgl)		Strata Thickness m
	From	To	
Topsoil/Made Ground	0.00	0.00 to 0.60	0.60
Head Deposits	0.30	0.60 to 1.90	0.00 to 1.50
Seaford Chalk Formation	0.30 to 1.90	>3.20	>2.90

Made Ground

Made Ground was only encountered in TP06 from ground level as a firm dark brown sandy CLAY with angular to subrounded fine to coarse gravel size fragments of brick, slate, plastic and concrete. From ground level in the remaining trial pits, topsoil was encountered. The Made Ground was present to a maximum depth of 0.60m bgl in TP01.

Head Deposits

Head Deposits were encountered in TP01 to TP03 at depths between 0.30m bgl and 0.40m bgl and was present to a maximum depth of 1.90m bgl. Typically, the deposit can be described as firm friable sandy gravelly CLAY with gravel of subangular to subrounded fine to coarse flint. Rootlets were present to depths between 0.40m bgl and 0.60m bgl.

Seaford Chalk Formation

The Seaford Chalk Formation was proven immediately below the topsoil in TP04 and TP05, below the Made Ground in TP06 and below the Head Deposits in the remaining trial pits. In TP01, the material was recovered as structureless Chalk comprising cream slightly gravelly sandy CLAY with occasional cobbles and may be

classed as Grade Dc. In the remaining trial pits, the deposit may be described as structureless Chalk composed of cream sandy clayey subangular to subrounded medium and coarse GRAVEL and COBBLES. The gravel and cobbles are very weak. This material may be classed as Grade Dm.

All the trial pits were terminated in the chalk at a maximum depth of 3.20m bgl.

Groundwater

Groundwater ingress was not noted in any of the trial pits whilst they were open.

7. GEOTECHNICAL ASSESSMENT AND RECOMMENDATIONS IN RELATION TO THE PROPOSED DEVELOPMENT

Structural Details

Final details of the site layout have yet to be finalized. However, it is anticipated that the development will comprise conventional two storey dwellings with foundations placed at minimal depth.

Assessment of Soil Conditions

MADE GROUD

The Made Ground encountered on site was generally cohesive in nature. However, due to the variable nature of this material, it is not considered to be a suitable bearing medium.

HEAD DEPOSITS

The field descriptions of this material indicate it to be firm in consistency. Laboratory testing was undertaken on two samples of the Head Deposits which recorded moisture contents of 11% and 14%. One sample was returned as Non-Plastic while the other sample had a Plasticity Index of 16%.

The plasticity index corrected for stone content was 12%. These results indicate the clay to be of low to intermediate plasticity and low volume change potential.

SEAFORD CHALK FORMATION

The field descriptions of the Chalk varied across the site. In the north and east of the site, where it was encountered at depth, field descriptions of the Chalk indicate it to be Grade Dc. Over the remainder of the site it was encountered as rubbly chalk (Grade Dm). Moisture contents for the chalk ranged between 10% and 16% for the clayey chalk and 23% and 25% for the rubbly chalk.

Foundation Design

FOUNDATIONS

On the basis of observations made on site and the results of laboratory testing together with the empirical correlations, consideration could be given to the adoption of shallow foundations.

It is suggested that strip footings should be taken below any Made Ground and placed in the natural strata at a minimum depth of 0.90m bgl. This should be below the maximum depth of observed rootlets in the Head Deposits. A presumed net bearing value, which takes no account of any settlement, of 75kPa is considered appropriate for both the Head Deposits and Chalk. Settlements are likely to be less than 25mm but should be checked once final loadings are known.

Although the Head Deposits are likely to be of low volume change potential, they have been described as friable. Therefore, where foundations are likely to be within the zone of influence of tree roots, foundations will need to be locally deepened in accordance with NHBC Standards Chapter 4.2 "Building near trees".

Where foundations are likely to straddle between the clayey chalk and Head Deposits or rubbly chalk and clayey chalk, they should be reinforced for a minimum distance of three times their thickness from the change in lithology.

GROUND FLOOR SLAB

Floor slabs bearing on Made Ground are not considered appropriate because of the unpredictable behaviour of uncontrolled Made Ground and the risk of collapse settlement. Consideration could be given to constructing the ground floor slab on a formation prepared in the Head Deposits or Chalk. Any soft or deleterious material would need to be removed and replaced with properly compacted granular fill. Where the engineered granular fill required is likely to exceed 600mm then a suspended floor slab will be required. Where floor slabs are likely to be in the zone of influence of trees, then a suspended floor slab should be adopted in accordance with NHBC guidance.

EXCAVATIONS FOR TEMPORARY WORKS

Excavations for services and foundations should be well within the capability of conventional backhoe excavators. All excavations are likely to require close sided support in the form of trench sheets or sheet piles. Alternatively, the sides of the excavation could be battered back to a safe angle to allow man access.

It should be noted that clay will deteriorate rapidly in the presence of water. It is recommended that all proposed formations are carefully inspected and any soft or loose pockets are removed and the formation restored with granular fill or lean mix concrete as soon as is practicable after excavation. In addition, any constructional disturbance resulting from the excavation of foundations and service trenches should be made good using suitable plant.

Although groundwater was not encountered during the site works, it is recommended that groundwater control measures are assessed in relation to the conditions encountered at the time of excavation/construction.

PAVEMENT DESIGN

Made Ground is not normally recommended as a sub-grade for pavement construction and any hardstanding or pavements constructed directly onto the Made Ground will be done so with the risk of settlement over time such that a long term maintenance programme will be required.

Where pavements are to be constructed within Head Deposits, it is suggested that a California Bearing Ratio (CBR) value of 2.5% is used across the site for pavement design with a minimum construction thickness of 450mm which would negate the effects of frost susceptibility.

SURFACE WATER DISPOSAL

Surface water should not be discharged within the Made Ground as in the absence of data to the contrary this material would have to be considered as metastable and as such would be susceptible to possible collapse settlement as a result of inundation of water. There is also the risk of mobilising potential contaminants within this material. Traditional chamber soakaways discharging into the Made Ground are therefore not suitable as a viable means of surface water disposal.

The relatively impermeable nature of the Head Deposits is such that this stratum may not be suitable for the discharge of surface water. However, the underlying Chalk may be suitable for discharge of surface waters. It should be noted that soakaways should not be constructed within 10m of any structure

Any soakaway design would need to adhere to Environment Agency and local authority guidelines. In the event that this option is to be considered then additional fieldwork in the form of a trial pit soakage test may need to be carried out to assess the suitability of the Chalk

CONCRETE BELOW GROUND

Chemical testing was carried out on a series of soil samples recovered from the strata encountered in the exploratory holes. The ground investigation established that the underlying groundwater condition is likely to be classified as 'static'. In accordance with BRE Special Digest 1:2005 Third Edition "Concrete in Aggressive Ground", Table C2 for brownfield locations, the Design Sulphate Class and ACEC Class have been established based upon the available laboratory results.

The results of the sulphate analyses indicate a maximum water soluble sulphate of 0.14g/l with corresponding pH values between 7.6 and 8.6. This gives a Design Sulphate Class of DS-1 and ACEC Class of AC-1 should be adopted.

8. ENVIRONMENTAL RISK ASSESSMENT AND RECOMMENDATIONS IN RELATION TO THE PROPOSED DEVELOPMENT

Results of Soil Analysis

The pH of the eight tested soils ranged from 6.4 to 7 with an average of 6.7. The TOC content of the five tested samples ranged from 1.8% to 4.4% with an average of 3.1%.

Asbestos was not positively identified in any of the tested samples.

A summary of the metal concentrations recorded in the tested samples is presented in the below table:

Determinand	Key statistics				S4UL* (RwHGP)	
	Number of detects	Min. Value (mg/kg)	Max. Value (mg/kg)	Mean Value (mg/kg)	S4UL (mg/kg)	No. Samples exceeding assessment criteria
Arsenic	5	5.7	10	7.6	37	0
Boron (water soluble)	0	All results below LoD			290	0
Cadmium	5	0.2	0.4	0.26	11	0
Chromium III	5	8.5	20	13	910	0
Chromium VI	0	All results below LoD			6	0
Copper	5	7.4	31	18	2400	0
Lead [#]	5	7.7	250	112	200	2
Mercury	0	All results below LoD			1.2	0
Nickel	5	9.5	21	14	180	0
Selenium	0	All results below LoD			250	0
Zinc	5	26	10	82	3700	0
Notes to Table						
*	Most appropriate supplied S4ULs are based on a Residential end-use where home grown produce may be consumed, a sandy loam soil type, pH of 7 and a soil organic matter (SOM) of 1%.					
#	Category 4 Screening Level (2014) used in absence of suitable S4UL.					

Concentrations of the sixteen USEPA PAH compounds are given in the table below:

Determinand	Key statistics				S4UL* (Public Open Space – parkland)	
	Number of detects	Min. Value (mg/kg)	Max. Value (mg/kg)	Mean Value (mg/kg)	S4UL (mg/kg)	No. Samples exceeding assessment criteria
Naphthalene	1	0.1	0.1	0.1	2.3	0
Acenaphthylene	1	0.1	0.1	0.1	170	0
Acenaphthene	0	All results below LoD			210	0
Fluorene	0	All results below LoD			170	0
Phenanthrene	2	0.6	0.6	0.6	95	0
Anthracene	1	0.5	0.5	0.5	2400	0
Fluoranthene	2	1.4	3.4	2.4	280	0
Pyrene	2	1.2	2.6	1.9	620	0
Benzo(a)Anthracene	2	0.6	1.7	1.2	7.2	0
Chrysene	2	0.8	1.9	1.4	15	0
Benzo(b)Fluoranthene	2	0.4	1.3	0.85	2.6	0
Benzo(k)Fluoranthene	2	0.4	0.9	0.65	77	0
Benzo(a)Pyrene	2	0.3	0.9	0.6	2.2	0
Indeno(123-cd)Pyrene	2	0.2	0.3	0.25	27	0
Dibenzo(ah)Anthracene	1	0.1	0.1	0.1	0.24	0
Benzo(ghi)Perylene	2	0.2	0.3	0.25	320	0
Notes to Table						
*	Most appropriate supplied S4ULs are based on a Residential end-use where home grown produce may be consumed, a sandy loam soil type, pH of 7 and a soil organic matter (SOM) of 1%.					

A summary of the detected petroleum hydrocarbons and BTEX compounds recorded by the analysis are included in the following table:

Determinand	Key statistics				S4UL* (Public Open Space – parkland)	
	Number of detects	Min. Value (mg/kg)	Max. Value (mg/kg)	Mean Value (mg/kg)	S4UL (mg/kg)	No. Samples exceeding assessment criteria
TPH (C10 – C12 aromatic)	1	6	6	6	74	0
TPH (C12 – C16 aromatic)	1	72	72	72	140	0
TPH (C16 – C21 aliphatic)	1	120	120	120	65000	0
TPH (C16 – C21 aromatic)	2	28	72	50	260	0
TPH (C21 – C35 aliphatic)	2	5	620	313	65000	0
TPH (C21 – C35 aromatic)	2	54	160	107	1100	0
Notes to Table						
*	Most appropriate supplied S4ULs are based on a Residential end-use where home grown produce may be consumed, a sandy loam soil type, pH of 7 and a soil organic matter (SOM) of 1%.					

Monohydric phenols and free cyanide were not detected any of the soil samples tested by the laboratory.

Generic Human Health Risk Assessment

In order to provide an indication of whether the soils present beneath the study area could pose a risk to human health, CET subjected the aforementioned chemical data to a Generic Risk Assessment (GRA). The initial screen of the chemical data was made against available Suitable 4 Use Levels (S4ULs) developed by LQM/CIEH (2015) and Category 4 Screening Levels (C4SLs) as developed by DEFRA (2014). Exceedances of assessment criteria may require further detailed/semi detailed quantitative risk assessment.

For the purposes of this assessment the S4ULs for a 'residential end use with homegrown produce' (RwHP) were considered to be the most applicable. In this instance the most sensitive potential receptor is judged to be a female child (i.e. 6 years old). The consumption of contamination via home ground produce has been considered as an applicable exposure pathway.

Only lead was found to exceed the respective guideline concentration. This was present in TP06 at depths of 0.20m (240mg/kg) and 0.50m bgl (250mg/kg) and may pose a risk to human health via the direct contact, ingestion and dust inhalation exposure pathways. The Conceptual Site Model proposed in the PRA has been updated and presented in Appendix D.

Management of Contamination

This assessment has identified that the 'source-pathway-receptor' linkage occurs with lead impacting upon Human Health receptors.

It will be necessary to manage the risk either by eliminating one of the links or by minimising the potential effects. To this end it is considered that source removal would be the best solution for this site. It is recommended that the Made Ground encountered in the western corner of the site around TP06 be stripped and removed.

A watching brief should be kept by the developer during all groundworks. The excavation of materials across the site must be documented and by photographs and waste consignment documentation.

Where topsoil is being imported to raise site levels and/or finish off garden areas following excavation, chemical test reports will need to be provided to confirm that the soil is suitable for use in a residential area where plants are to be grown.

Waste Classification Hazard Assessment

BACKGROUND

As detailed in the Environment Agency's Technical Guidance WM3 Ver.1 (2015) entitled 'Guidance on the classification and assessment of waste', wastes are presented in the List of Wastes Directive (LoWD, 2014/955/EU) and grouped according to generic industry, process or waste type. Wastes within the LoWD are either Hazardous or Non Hazardous. Some of these wastes are Hazardous without further assessment (absolute entries) or are 'mirror' entries that require further assessment as to hazardous properties in order to determine whether the waste is Hazardous.

Waste soil has mirror entries on the LoWD and as such the first phase of the waste classification process is to determine if the waste is Hazardous or not, i.e. a Hazard Assessment.

Certain contaminants (e.g. asbestos, diesel) have prescribed concentration thresholds that if breached will render the material Hazardous waste. Thus, in the first instance the concentrations of plausible contaminants within the soil should be identified. Results of this assessment should help to determine the likely fate of the soil (re-use elsewhere or disposal) and whether or not the soil is Hazardous or Non Hazardous. Dependent on the results of the Hazard Assessment advice can be given as to the likely options available for a given waste and any further testing or assessment that may be required.

Hazardous waste will likely require landfilling (subject to 'passing' further Waste Acceptance Criteria (WAC) testing and after 'pre-treatment') or off site treatment. Non Hazardous waste may be suitable for re-use rather than landfilling in which case reduced or no further testing is likely to be required.

HAZARD ASSESSMENT

The HazWasteOnline model was subsequently used to undertake the Hazard Assessment, the purpose of which is to establish whether the recovered samples should be considered as either Hazardous or Non-Hazardous waste.

The assessment has been conducted using the HazWasteOnline™ tool, the model output sheets are included in Appendix E.

As the results show, the Made Ground sample from TP06 at 0.20m bgl was returned as Hazardous due to a high level of TPH. However, the level of TPH was measured at 1050mg/kg which is only marginally above the hazardous waste threshold of 1000mg/kg. Therefore, it would be prudent to retest this material once the

soils for removal have been identified to see if they would be classified as Hazardous. The remaining samples were returned as Non-Hazardous waste.

Two samples were submitted for WAC analysis. One from the natural soils (TP01 at 0.50m) and one of Made Ground (TP06 at 0.20m). None of the determinands exceeded the Inert waste threshold for the natural soil sample. Therefore, these soils may be disposed of as Inert waste. The hazardous waste sample of the Made Ground did not exceed the hazardous thresholds, and therefore, the Made Ground may be disposed of a Hazardous waste.

In order to comply with the requirements of disposal to landfill some sort of physical pre-treatment is required. This can be in the form of sorting the bricks, concrete, etc., from the soil matrix. However, the level to which this practice is implemented will depend upon the percentage volume of material to be segregated and that under certain circumstances, where the percentage is understood to be very low, pre-treatment may not be necessary.

9. SUMMARY & CONCLUSIONS

On the instructions of Halsion Limited, an investigation was undertaken to provide an initial understanding of any potential ground risk that could adversely impact on the proposed development.

The site is located at Hill House, Bakers Lane, Chartham in Kent and may be located by National Grid Reference TQ 107546. It is understood that the site has been earmarked for a residential end use. Therefore this assessment is based on the most sensitive end use of residential dwellings with private gardens.

The geological map of the area indicates that the site is underlain by the Seaford Chalk Formation. No superficial deposits were indicated on the records. The Environment Agency has classified the Seaford Chalk Formation as a Principal Aquifer.

Site work was undertaken on the 6th October 2016 and comprised six trial pits excavated by mechanical excavator to depths of between 1.80m bgl and 3.20m bgl.

The exploratory locations broadly encountered the anticipated geological sequence. However, Head Deposits consisting of sandy gravelly clay were present at a number of locations to the eastern end of the site. The underlying Seaford Chalk Formation was proven to the full depth of excavation at 3.20m bgl.

Groundwater was not encountered at any of the trial pit locations.

On the basis of these observations, together with results laboratory tests and empirical correlations, consideration could be given to the adoption of shallow spread foundations to support the proposed structures.

It is recommended that such conventional strip footings should be taken through any Made Ground and placed in the underlying natural strata at a minimum depth of 0.90m bgl subject to the requirements of NHBC Chapter 4.2 "Building near trees". Such foundations, assuming a 0.45m wide strip foundation at the minimum depth of 0.90m, may be designed to a presumed net bearing pressure of 75kPa.

The results of the soil analyses, with the exception of lead, have been compared to the S4ULs (Suitable 4 Use Levels) determined by LQM and CIEH. The assessment has only identified that lead is present which may pose a risk to human health via the direct contact, ingestion and dust inhalation exposure pathways. The lead was only found in TP06 in the western part of the site and is associated with a layer of Made Ground. It is understood that this area had been used for the burning of waste and stockpiling of excavated soils prior to

disposal off-site. Therefore, it is recommended that in garden areas, and other areas where plants are to be ground, the Made Ground is removed and replaced with clean imported topsoil.

WAC analysis on a sample of Made Ground has confirmed that it will require disposal as Hazardous waste. The natural soils on site may be disposed of as Inert waste.

FIGURES



FIGURE 1 LOCATION PLAN

Land Adjacent to Hill House, Bakers Lane, Chartham, Kent, CT4 7QB
239792

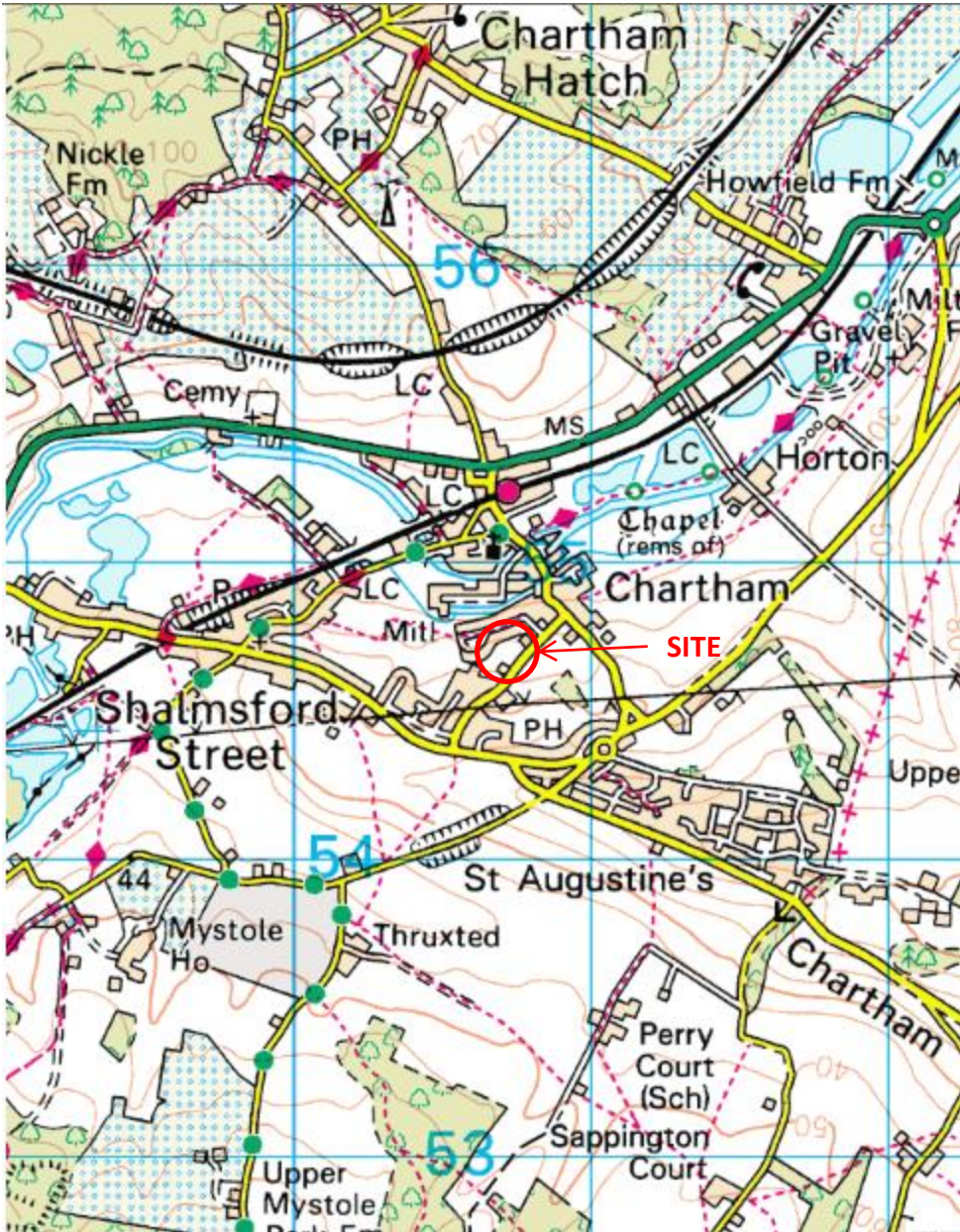


FIGURE 2

EXPLORATORY HOLE LOCATION PLAN

Land Adjacent to Hill House, Bakers Lane, Chartham, Kent, CT4 7QB
239792








proposed site plan

APPENDIX A

Trial Pit Logs


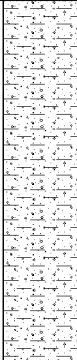




Client: Halsion Limited		Depth (m) 3.20	Plant used: Kubota	TRIAL PIT NUMBER TP01 Sheet 1 of 1
Width (m)	Length (m)	Method of Excavation :	Shoring: None	
Co-ordinates E N	Ground Level (mAOD)	Mechanical Excavator	Date Started :06/10/2016	

Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & Thickness (m)		
				(0.40)	Turf over TOPSOIL	
0.50	T J V			0.40	Firm friable brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse gravel of flint and chalk. Occasional cobbles. Rootlets present to about 0.60m HEAD DEPOSITS	
1.00	D			(1.40)		
1.80	D			1.80	Light brown clayey subangular to rounded GRAVEL and occasional cobbles of flint	
				1.90		
				(0.60)	Structureless CHALK comprising cream slightly gravelly sandy CLAY with occasional cobbles WEATHERED SEAFORD CHALK FORMATION - GRADE Dc	
2.50	D			2.50	Structureless CHALK composed of cream sandy subangular to subrounded medium and coarse GRAVEL and COBBLES. The gravel and cobbles are very weak SEAFORD CHALK FORMATION - GRADE Dm	
				(0.70)		
				3.20	End of Trial Pit at 3.20 m	



General Remarks:
1. Trial pit remained dry and stable whilst open
2. Roots/rootlet noted to 0.60m

Ref:	239792	TRIAL PIT RECORD Scale 1:25 <small>Symbols and abbreviations in accordance with AGS</small>	 INFRASTRUCTURE Giving our all
Logged:	WGG		
Check'd:		Hill House, Bakers Lane, Chartham	FIG A1
Appr'd:			

Client: Halsion Limited			Depth (m) 1.80		Plant used: Kubota		TRIAL PIT NUMBER TP02 Sheet 1 of 1
Width (m)		Length (m)		Method of Excavation : Mechanical Excavator		Shoring: None	
Co-ordinates E N		Ground Level (mAOD)				Date Started :06/10/2016	
Samples/In Situ Tests			Change of Strata		Description of Strata		Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & Thickness (m)			
0.40	T J V			(0.30) 0.30 (0.30) 0.60	Turf over TOPSOIL Firm friable light brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse gravel of flint and chalk. Occasional cobbles. Rootlets present to about 0.40m HEAD DEPOSITS		
1.00	D			(1.20)	Structureless CHALK composed of cream sandy subangular to subrounded medium and coarse GRAVEL and COBBLES. The gravel and cobbles are very weak SEAFORD CHALK FORMATION - GRADE Dm		
1.70	D			1.80	----- <i>End of Trial Pit at 1.80 m</i>		
General Remarks: 1. Trial pit remained dry and stable whilst open							
Ref:	239792	TRIAL PIT RECORD Scale 1:25 Symbols and abbreviations in accordance with AGS				CET INFRASTRUCTURE Giving our all	
Logged:	WGG						
Check'd:		Hill House, Bakers Lane, Chartham				FIG A2	
Appr'd:							

Client: Halsion Limited			Depth (m) 3.00		Plant used:Kubota		TRIAL PIT NUMBER TP03 Sheet 1 of 1
Width (m)		Length (m)		Method of Excavation :		Shoring: None	
Co-ordinates E N		Ground Level (mAOD)		Mechanical Excavator		Date Started :06/10/2016	
Samples/In Situ Tests			Change of Strata		Description of Strata		Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & (Thickness) (m)			
0.40	T J V			(0.30) 0.30	Turf over TOPSOIL		
1.20	D			(1.20)	Firm friable light brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse gravel of flint and chalk. Occasional cobbles. Rootlets present to about 0.40m HEAD DEPOSITS		
2.00	D			1.50 (1.30)	Structureless CHALK composed of cream sandy subangular to subrounded medium and coarse GRAVEL and COBBLES. The gravel and cobbles are very weak SEAFORD CHALK FORMATION - GRADE Dm		
2.80	D			2.80	End of Trial Pit at 3.00 m		
General Remarks: 1. Trial pit remained dry and stable whilst open 2. Roots/rootlets noted to 0.50m							
Ref:	239792	TRIAL PIT RECORD Scale 1:25 Symbols and abbreviations in accordance with AGS				 INFRASTRUCTURE Giving our all	
Logged:	WGG						
Check'd:		Hill House, Bakers Lane, Chartham				FIG A3	
Appr'd:							



Client: Halsion Limited		Depth (m) 1.80	Plant used: Kubota	TRIAL PIT NUMBER TP04 Sheet 1 of 1
Width (m)	Length (m)	Method of Excavation :	Shoring: None	
Co-ordinates E N	Ground Level (mAOD)	Mechanical Excavator	Date Started :06/10/2016	

Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & Thickness (m)		
				(0.30)	Turf over TOPSOIL	
0.40 0.50	T J V D			0.30	Structureless CHALK composed of cream sandy subangular to subrounded medium and coarse GRAVEL and COBBLES. The gravel and cobbles are very weak SEAFORD CHALK FORMATION - GRADE Dm	
1.20	D			(1.50)		
1.60	D					
				1.80	----- End of Trial Pit at 1.80 m	

General Remarks:
1. Trial pit remained dry and stable whilst open

Ref:	239792	TRIAL PIT RECORD Scale 1:25 <small>Symbols and abbreviations in accordance with AGS</small>	 INFRASTRUCTURE Giving our all
Logged:	WGG		
Check'd:		Hill House, Bakers Lane, Chartham	FIG A4
Appr'd:			

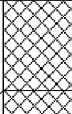


Client: Halsion Limited		Depth (m) 1.80	Plant used:Kubota	TRIAL PIT NUMBER TP05 Sheet 1 of 1
Width (m)	Length (m)	Method of Excavation :	Shoring: None	
Co-ordinates E N	Ground Level (mAOD)	Mechanical Excavator	Date Started :06/10/2016	

Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & Thickness (m)		
				(0.30)	TOPSOIL	
0.50	T J V			0.30	Structureless CHALK composed of cream sandy subangular to subrounded medium and coarse GRAVEL and COBBLES. The gravel and cobbles are very weak SEAFORD CHALK FORMATION - GRADE Dm	
1.00	D			(1.50)		
1.60	D					
				1.80	----- <i>End of Trial Pit at 1.80 m</i>	

General Remarks:
1. Trial pit remained dry and stable whilst open

Ref:	239792	TRIAL PIT RECORD Scale 1:25 <small>Symbols and abbreviations in accordance with AGS</small>	 INFRASTRUCTURE Giving our all
Logged:	WGG		
Check'd:		Hill House, Bakers Lane, Chartham	FIG A5
Appr'd:			

Client: Halsion Limited		Depth (m) 1.80	Plant used: Kubota	TRIAL PIT NUMBER TP06 Sheet 1 of 1
Width (m)	Length (m)	Method of Excavation :	Shoring: None	
Co-ordinates E N	Ground Level (mAOD)	Mechanical Excavator	Date Started :06/10/2016	

Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & Thickness (m)		
0.20	T J V			(0.30)	Firm dark brown sandy CLAY with angular to subrounded fine to coarse gravel size fragments of brick slate plastic and concrete MADE GROUND	
0.50	T J V			(0.30) 0.60	Firm brown gravelly sandy CLAY. Gravel is fine to coarse subangular to rounded flint and occasional brick MADE GROUND	
1.00	D			(1.20)	Structureless CHALK composed of cream sandy subangular to subrounded medium and coarse GRAVEL and COBBLES. The gravel and cobbles are very weak SEAFORD CHALK FORMATION - GRADE Dm	
1.50	D					
				1.80	----- End of Trial Pit at 1.80 m	

General Remarks:
 1. Trial pit remained dry and stable whilst open

Ref:	239792	TRIAL PIT RECORD Scale 1:25 <small>Symbols and abbreviations in accordance with AGS</small>	 INFRASTRUCTURE <small>Giving our all</small>
Logged:	WGG		
Check'd:		Hill House, Bakers Lane, Chartham	FIG A6
Appr'd:			

APPENDIX B

Results of Geotechnical Testing

TEST REPORT : **DETERMINATION OF THE MOISTURE CONTENT OF SOILS**
BS 1377:Part 2:1990 clause 3.2 - oven drying method

REPORT No.: F16-239792-165901-1 CLIENT:

SAMPLE No.: See Below ADDRESS: Hill House,Baker's Lane, Chartham, Kent

CLIENT REF: See Below SITE: Baker's Lane, Chartham

DATE SAMPLED: 14/10/2016 SUPPLIER: Details Not Supplied

SAMPLED BY: Gavin Greenwood MATERIAL: See Below

DATE RECEIVED: 14/10/2016 LOCATION: See Below

DATE TEST COMPLETED: 18/10/2016 ACCEPT STD.: Contract Specification

TESTED BY: MG, SCRL PREPARATION METHOD: BS1377:Part1:1990 cl 7.3 & 7.4.5

TYPE OF SAMPLE: Disturbed VARIATIONS: None

ORIENTATION OF TEST SPECIMEN WITHIN ORIGINAL SAMPLE : N/A

RESULTS:

SAMPLE NO.	CLIENT REF	MATERIAL DESCRIPTION	MOISTURE CONTENT
165901/1	TP 01 @ 1M	Dark Brown Silty Sandy Clay + Stone	14%
165903/1	TP 03 @ 1.2M	Light Brown Silty Sandy Chalky Clay + Stone	11%

REMARKS:

Remaining sample will be retained for a minimum of 28 days from date of report.

Page 1 of 1
REPORT FORMAT: L/Rep S2(Multi)/7

For and on behalf of CET

John Newbery - Laboratory Manager
Matt Oliver- Site Manager
Adrian McGilvery - Senior Technician
Chris Davidson - Laboratory Supervisor
Phil Mayhew - Operations Supervisor



Approved Signatory
02-Nov-16

TEST REPORT : DETERMINATION OF THE PLASTICITY INDEX OF SOIL
BS 1377:Part 2:1990 clause 5.4

REPORT No.:	F16-239792-165901-2	CLIENT:	
SAMPLE No.:	165901/2	ADDRESS:	Hill House,Baker's Lane, Chartham, Kent
CLIENT REF:	TP01@1M	SITE:	Baker's Lane, Chartham
DATE SAMPLED:	14/10/2016	SUPPLIER:	Details Not Supplied
SAMPLED BY:	Gavin Greenwood	MATERIAL:	Dark Brown Silty Sandy Clay + Stone
DATE RECEIVED:	14/10/2016	LOCATION:	TP01@1M
DATE TEST COMPLETED:	02/11/2016	ACCEPT STD:	Contract Specification
TESTED BY:	ALW	PREPARATION METHOD:	BS 1377:Part 1:1990
TYPE OF SAMPLE:	Disturbed	VARIATIONS:	No Variations

ORIENTATION OF TEST SPECIMEN WITHIN ORIGINAL SAMPLE: N/A

RESULT:

TEST DETAILS	TEST RESULT	SPECIFICATION DETAILS	
		Lower Limits	Upper Limits
THE LIQUID LIMIT OF THE SAMPLE: BS 1377: Part 2: 1990 clause 4.4 (1 point)	29%	N/A	- N/A
THE PLASTIC LIMIT OF THE SAMPLE: To BS1377 : Part2 : 1990 cl 5.3	13%	N/A	- N/A
THE PLASTICITY INDEX OF THE SAMPLE:	16%		
The Percentage Passing 425µm Test Sieve :	77%		
Sample History :	The material was tested after washing through a 425µm test sieve		

REMARKS:

Specification details not applicable.

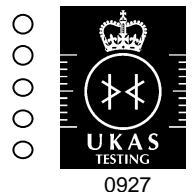
For and on behalf of CET

Remaining sample will be retained for a minimum of 28 days from date of report.

Page 1 of 1
REPORT FORMAT: L/Rep S3S4/rev.6

Approved Signatory
02-Nov-16

John Newbery - Laboratory Manager
Matt Oliver- Site Manager
Adrian McGilvery - Senior Technician
Chris Davidson - Laboratory Supervisor
Phil Mayhew - Operations Supervisor



TEST REPORT : **DETERMINATION OF THE MOISTURE CONTENT OF SOILS**
BS 1377:Part 2:1990 clause 3.2 - oven drying method

REPORT No.: F16-239792-165902-1 CLIENT:

SAMPLE No.: See Below ADDRESS: Hill House,Baker's Lane, Chartham, Kent

CLIENT REF: See Below SITE: Baker's Lane, Chartham

DATE SAMPLED: 14/10/2016 SUPPLIER: Details Not Supplied

SAMPLED BY: Client MATERIAL: See Below

DATE RECEIVED: 14/10/2016 LOCATION: See Below

DATE TEST COMPLETED: 20/10/2016 ACCEPT STD.: Contract Specification

TESTED BY: MG, SCRL PREPARATION METHOD: BS1377:Part1:1990 cl 7.3 & 7.4.5

TYPE OF SAMPLE: Disturbed VARIATIONS: None

ORIENTATION OF TEST SPECIMEN WITHIN ORIGINAL SAMPLE : N/A

RESULTS:

SAMPLE NO.	CLIENT REF	MATERIAL DESCRIPTION	MOISTURE CONTENT
165902/1	TP 01 @ 2.5M	Light Brown Silty Sandy Chalky Clay + Flint	10%
165904/3	TP 03 @ 2M	Light Brown Silty Sandy Chalky Clay + Flint	16%
165905/3	TP 04 @ 1.2M	Chalk	23%
165906/3	TP 06 @ 1.5M	Chalk	25%

REMARKS:

For and on behalf of CET

Remaining sample will be retained for a minimum of 28 days from date of report.

Page 1 of 1
REPORT FORMAT: L/Rep S2(Multi)/7

Approved Signatory
02-Nov-16

John Newbery - Laboratory Manager
Matt Oliver- Site Manager
Adrian McGilvery - Senior Technician
Chris Davidson - Laboratory Supervisor
Phil Mayhew - Operations Supervisor



TEST REPORT : DETERMINATION OF THE PLASTICITY INDEX OF SOIL
BS 1377:Part 2:1990 clause 5.4

REPORT No.:	F16-239792-165903-2	CLIENT:	
SAMPLE No.:	165903/2	ADDRESS:	Hill House,Baker's Lane, Chartham, Kent
CLIENT REF:	TP03@1.2M	SITE:	Baker's Lane, Chartham
DATE SAMPLED:	14/10/2016	SUPPLIER:	Details Not Supplied
SAMPLED BY:	Gavin Greenwood	MATERIAL:	Light Brown Silty Sandy Chalky Clay + Stone
DATE RECEIVED:	14/10/2016	LOCATION:	TP03@1.2M
DATE TEST COMPLETED:	02/11/2016	ACCEPT STD:	Contract Specification
TESTED BY:	ALW	PREPARATION METHOD:	BS 1377:Part 1:1990
TYPE OF SAMPLE:	Disturbed	VARIATIONS:	No Variations

ORIENTATION OF TEST SPECIMEN WITHIN ORIGINAL SAMPLE: N/A

RESULT:

TEST DETAILS	TEST RESULT	SPECIFICATION DETAILS	
		Lower Limits	Upper Limits
THE LIQUID LIMIT OF THE SAMPLE: BS 1377: Part 2: 1990 clause 4.4 (1 point)	19%	N/A	- N/A
THE PLASTIC LIMIT OF THE SAMPLE: To BS1377 : Part2 : 1990 cl 5.3	Non Plastic	N/A	- N/A
THE PLASTICITY INDEX OF THE SAMPLE:	N/A		
The Percentage Passing 425µm Test Sieve :	66%		
Sample History :	The material was tested after washing through a 425µm test sieve		

REMARKS:

Specification details not applicable.

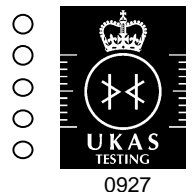
For and on behalf of CET

Remaining sample will be retained for a minimum of 28 days from date of report.

Page 1 of 1
REPORT FORMAT: L/Rep S3S4/rev.6

Approved Signatory
02-Nov-16

John Newbery - Laboratory Manager
Matt Oliver- Site Manager
Adrian McGilvery - Senior Technician
Chris Davidson - Laboratory Supervisor
Phil Mayhew - Operations Supervisor



APPENDIX C

Results of Laboratory Chemical Analysis



SCIENTIFIC ANALYSIS
LABORATORIES
DELIVERING SCIENCE

Scientific Analysis Laboratories is a
limited company registered in England and
Wales (No 2514788) whose address is at
Hadfield House, Hadfield Street, Manchester M16 9FE

Scientific Analysis Laboratories Ltd

Certificate of Analysis

3 Crittall Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel : 01376 560120
Fax : 01376 552923

Report Number: 606126-1

Date of Report: 21-Oct-2016

Customer: CET Infrastructure
Northdown House
Harrietsham Maidstone Kent
ME17 1QW

Customer Contact: Mr Gavin Greenwood

Customer Job Reference: 239792

Customer Purchase Order: 893721/G2

Customer Site Reference: Chartham

Date Job Received at SAL: 10-Oct-2016

Date Analysis Started: 11-Oct-2016

Date Analysis Completed: 21-Oct-2016

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with SAL SOPs

All results have been reviewed in accordance with Section 25 of the SAL Quality Manual



1549

Report checked
and authorised by :
Claire Brown Crociquia
Customer Service Manager

Issued by :
Claire Brown Crociquia
Customer Service Manager

Waste Acceptance Criteria

Customer Sample Reference : TP01 @ 0.50m

SAL Sample Reference : 606126 001

Project Site : Chartham

Customer Reference : 239792

Date Sampled : 06-OCT-2016

Soil					Result	Inert Waste Landfill	Stable non reactive	Hazardous Waste Landfill
Determinand	Technique	LOD	Units	Symbol				
pH	Probe			U	8.2		> 6.0	
Loss on Ignition	Ign @450C/Grav	0.1	%	U	5.1			10.0
Total Organic Carbon	OX/IR	0.1	%	N	1.8	3.0	5.0	6.0
Acid Neutralising Capacity (pH 7)	Titration	2	Mol/kg	N	<2			
BTEX (Sum)	Calc	0.0040	mg/kg	U	<0.0040	6.0		
Coronene	GC/MS	0.1	mg/kg	N	<0.1			
PAH (Sum)	Calc	1.6	mg/kg	N	<1.6	100.0		
PCB EC7 (Sum)	Calc	0.020	mg/kg	U	<0.020	1.0		
Total Petroleum Hydrocarbons (C10 - C40)	GC/FID (SE)	10	mg/kg	U	<10	500.0		

Data for BS EN 12457-2 (10:1)					Result	Inert Waste Landfill	Stable non reactive	Hazardous Waste Landfill
Determinand	Technique	LOD	Units	Symbol				
Total Dissolved Solids	Calc	100	mg/kg	N	610	4000.0	60000.0	100000.0
Dissolved Organic Carbon	Calc	10	mg/kg	N	60	500.0	800.0	1000.0
Antimony	Calc WAC ICP/MS	0.010	mg/kg	N	<0.010	0.06	0.7	5.0
Arsenic	Calc WAC ICP/MS	0.0020	mg/kg	N	0.0041	0.5	2.0	25.0
Barium	Calc WAC ICP/MS	0.010	mg/kg	N	0.036	20.0	100.0	300.0
Cadmium	Calc WAC ICP/MS	0.00020	mg/kg	N	<0.00020	0.04	1.0	5.0
Chloride	Calc (W)	10	mg/kg	N	64	800.0	15000.0	25000.0
Chromium	Calc WAC ICP/MS	0.010	mg/kg	N	<0.010	0.5	10.0	70.0
Copper	Calc WAC ICP/MS	0.0050	mg/kg	N	0.018	2.0	50.0	100.0
Fluoride	Calc (W)	0.50	mg/kg	N	1.2	10.0	150.0	500.0
Lead	Calc WAC ICP/MS	0.0030	mg/kg	N	<0.0030	0.5	10.0	50.0
Mercury	Calc WAC ICP/MS	0.00050	mg/kg	N	<0.00050	0.01	0.2	2.0
Molybdenum	Calc WAC ICP/MS	0.010	mg/kg	N	0.016	0.5	10.0	30.0
Nickel	Calc WAC ICP/MS	0.010	mg/kg	N	<0.010	0.4	10.0	40.0
Phenols (Total-Mono)	Calc (W)	0.20	mg/kg	N	<0.20	1.0		
Selenium	Calc WAC ICP/MS	0.0050	mg/kg	N	<0.0050	0.1	0.5	7.0
Sulphate ion	Calc (W)	5	mg/kg	N	<5	1000.0	20000.0	50000.0
Zinc	Calc WAC ICP/MS	0.020	mg/kg	N	<0.020	4.0	50.0	200.0

Following the recommendation from the Environment Agency (England and Wales)*, the leachate preparation in this report has been carried out to BS EN 12457-2 : One Stage batch test at a liquid to solid ratio of 10 l/kg. This is also compliant with Schedule 10 of the Environmental Permitting Regulations 2010.

Note : This is the minimum amount of testing which is required.

Further testing may be required if :

- evidence of immediately leachable parameters becomes available.
- evidence to indicate that the sample could be classified as hazardous under H1-H14 of the Waste(England and Wales) Regulations 2011(as amended) becomes available.

Acceptance of waste at landfill is always at the discretion of the Landfill Operator.

* Waste Sampling and Testing for Disposal at Landfill, EBPRI 11507B, Environment Agency (England and Wales) March 2013

Waste Acceptance Criteria

Customer Sample Reference : TP06 @ 0.20m

SAL Sample Reference : 606126 006

Project Site : Chartham

Customer Reference : 239792

Date Sampled : 06-OCT-2016

Soil					Result	Inert Waste Landfill	Stable non reactive	Hazardous Waste Landfill
Determinand	Technique	LOD	Units	Symbol				
pH	Probe			U	7.6		> 6.0	
Loss on Ignition	Ign @450C/Grav	0.1	%	U	10			10.0
Total Organic Carbon	OX/IR	0.1	%	N	4.4	3.0	5.0	6.0
Acid Neutralising Capacity (pH 7)	Titration	2	Mol/kg	N	<2			
BTEX (Sum)	Calc	0.0040	mg/kg	U	<0.0040	6.0		
Coronene	GC/MS	0.1	mg/kg	N	<0.1			
PAH (Sum)	Calc	1.6	mg/kg	N	5.9	100.0		
PCB EC7 (Sum)	Calc	0.020	mg/kg	U	<0.020	1.0		
Total Petroleum Hydrocarbons (C10 - C40)	GC/FID (SE)	10	mg/kg	U	1000	500.0		

Data for BS EN 12457-2 (10:1)					Result	Inert Waste Landfill	Stable non reactive	Hazardous Waste Landfill
Determinand	Technique	LOD	Units	Symbol				
Total Dissolved Solids	Calc	100	mg/kg	N	930	4000.0	60000.0	100000.0
Dissolved Organic Carbon	Calc	10	mg/kg	N	150	500.0	800.0	1000.0
Antimony	Calc WAC ICP/MS	0.010	mg/kg	N	0.039	0.06	0.7	5.0
Arsenic	Calc WAC ICP/MS	0.0020	mg/kg	N	0.044	0.5	2.0	25.0
Barium	Calc WAC ICP/MS	0.010	mg/kg	N	0.17	20.0	100.0	300.0
Cadmium	Calc WAC ICP/MS	0.00020	mg/kg	N	<0.00020	0.04	1.0	5.0
Chloride	Calc (W)	10	mg/kg	N	66	800.0	15000.0	25000.0
Chromium	Calc WAC ICP/MS	0.010	mg/kg	N	<0.010	0.5	10.0	70.0
Copper	Calc WAC ICP/MS	0.0050	mg/kg	N	0.068	2.0	50.0	100.0
Fluoride	Calc (W)	0.50	mg/kg	N	2.1	10.0	150.0	500.0
Lead	Calc WAC ICP/MS	0.0030	mg/kg	N	0.042	0.5	10.0	50.0
Mercury	Calc WAC ICP/MS	0.00050	mg/kg	N	<0.00050	0.01	0.2	2.0
Molybdenum	Calc WAC ICP/MS	0.010	mg/kg	N	0.018	0.5	10.0	30.0
Nickel	Calc WAC ICP/MS	0.010	mg/kg	N	0.028	0.4	10.0	40.0
Phenols (Total-Mono)	Calc (W)	0.20	mg/kg	N	<0.20	1.0		
Selenium	Calc WAC ICP/MS	0.0050	mg/kg	N	<0.0050	0.1	0.5	7.0
Sulphate ion	Calc (W)	5	mg/kg	N	20	1000.0	20000.0	50000.0
Zinc	Calc WAC ICP/MS	0.020	mg/kg	N	0.073	4.0	50.0	200.0

Following the recommendation from the Environment Agency (England and Wales)*, the leachate preparation in this report has been carried out to BS EN 12457-2 : One Stage batch test at a liquid to solid ratio of 10 l/kg. This is also compliant with Schedule 10 of the Environmental Permitting Regulations 2010.

Note : This is the minimum amount of testing which is required.

Further testing may be required if :

- evidence of immediately leachable parameters becomes available.
- evidence to indicate that the sample could be classified as hazardous under H1-H14 of the Waste(England and Wales) Regulations 2011(as amended) becomes available.

Acceptance of waste at landfill is always at the discretion of the Landfill Operator.

* Waste Sampling and Testing for Disposal at Landfill, EBPR1 11507B, Environment Agency (England and Wales) March 2013

SAL Reference: 606126 Project Site: Chartham Customer Reference: 239792 Soil Analysed as Soil CET Waste Classification Suite									
					SAL Reference	606126 001	606126 002	606126 003	606126 006
					Customer Sample Reference	TP01 @ 0.50m	TP02 @ 0.40m	TP03 @ 0.40m	TP06 @ 0.20m
					Test Sample	A40	A40	A40	A40
					Date Sampled	06-OCT-2016	06-OCT-2016	06-OCT-2016	06-OCT-2016
Determinand	Method	LOD	Units	Symbol					
Arsenic	ICP/OES (SIM) (Aqua Regia Extraction)	2.0	mg/kg	U	10	7.2	5.9	9.0	
Boron (water-soluble)	ICP/OES (Sim)	1	mg/kg	N	<1	<1	<1	<1	
Cadmium	ICP/OES (SIM) (Aqua Regia Extraction)	0.1	mg/kg	U	0.2	0.2	0.2	0.4	
Chromium	ICP/OES (Aqua Regia Extraction)	0.5	mg/kg	U	20	11	11	13	
Copper	ICP/OES (Aqua Regia Extraction)	1.0	mg/kg	U	23	15	7.4	31	
Lead	ICP/OES (SIM) (Aqua Regia Extraction)	0.5	mg/kg	U	46	18	7.7	240	
Mercury	ICP/OES (Aqua Regia Extraction)	1.0	mg/kg	U	<1.0	<1.0	<1.0	<1.0	
Nickel	ICP/OES (SIM) (Aqua Regia Extraction)	0.5	mg/kg	U	21	15	11	12	
Selenium	ICP/OES (SIM) (Aqua Regia Extraction)	3	mg/kg	U	<3	<3	<3	<3	
Zinc	ICP/OES (SIM) (Aqua Regia Extraction)	0.5	mg/kg	U	59	37	26	190	
Asbestos ID	PLM			SU	Asbestos not detected	Asbestos not detected	Asbestos not detected	Asbestos not detected	
Chromium VI	ICP/OES	1	mg/kg	N	<1	<1	<1	<1	
Sulphate (Total)	ICP/OES (HCl extract)	0.02	%	U	0.07	-	-	0.13	
Soil Organic Matter	Calc TOC/0.58	0.1	%	N	-	1.2	0.2	-	
pH	Probe			U	8.2	8.2	8.6	7.6	
(Water Soluble) Sulphate expressed as SO4	2:1 Extraction/ICP/OES (TRL 447 T1)	0.01	g/l	U	<0.01	<0.01	<0.01	0.14	

SAL Reference: 606126 Project Site: Chartham Customer Reference: 239792 Soil Analysed as Soil CET Waste Classification Suite						
					SAL Reference	606126 007
					Customer Sample Reference	TP06 @ 0.50m
					Test Sample	A40
					Date Sampled	06-OCT-2016
Determinand	Method	LOD	Units	Symbol		
Arsenic	ICP/OES (SIM) (Aqua Regia Extraction)	2.0	mg/kg	U	5.7	
Boron (water-soluble)	ICP/OES (Sim)	1	mg/kg	N	<1	
Cadmium	ICP/OES (SIM) (Aqua Regia Extraction)	0.1	mg/kg	U	0.3	
Chromium	ICP/OES (Aqua Regia Extraction)	0.5	mg/kg	U	8.5	
Copper	ICP/OES (Aqua Regia Extraction)	1.0	mg/kg	U	16	
Lead	ICP/OES (SIM) (Aqua Regia Extraction)	0.5	mg/kg	U	250	
Mercury	ICP/OES (Aqua Regia Extraction)	1.0	mg/kg	U	<1.0	
Nickel	ICP/OES (SIM) (Aqua Regia Extraction)	0.5	mg/kg	U	9.5	
Selenium	ICP/OES (SIM) (Aqua Regia Extraction)	3	mg/kg	U	<3	
Zinc	ICP/OES (SIM) (Aqua Regia Extraction)	0.5	mg/kg	U	99	
Asbestos ID	PLM			SU	Asbestos not detected	
Chromium VI	ICP/OES	1	mg/kg	N	<1	
Sulphate (Total)	ICP/OES (HCl extract)	0.02	%	U	-	
Soil Organic Matter	Calc TOC/0.58	0.1	%	N	5.0	
pH	Probe			U	7.9	
(Water Soluble) Sulphate expressed as SO4	2:1 Extraction/ICP/OES (TRL 447 T1)	0.01	g/l	U	0.05	

SAL Reference: 606126								
Project Site: Chartham								
Customer Reference: 239792								
Soil Analysed as Soil								
CET Waste Classification Suite								
SAL Reference			606126 001	606126 002	606126 003	606126 006		
Customer Sample Reference			TP01 @ 0.50m	TP02 @ 0.40m	TP03 @ 0.40m	TP06 @ 0.20m		
Test Sample			AR	AR	AR	AR		
Date Sampled			06-OCT-2016	06-OCT-2016	06-OCT-2016	06-OCT-2016		
Determinand	Method	LOD	Units	Symbol				
Cyanide(free)	Colorimetry (CF)	1	mg/kg	U	<1	-	-	<1
Phenols (Total-Mono)	Colorimetry (CF)	1	mg/kg	U	<1	<1	<1	1

SAL Reference: 606126								
Project Site: Chartham								
Customer Reference: 239792								
Soil Analysed as Soil								
CET Waste Classification Suite								
SAL Reference			606126 007					
Customer Sample Reference			TP06 @ 0.50m					
Test Sample			AR					
Date Sampled			06-OCT-2016					
Determinand	Method	LOD	Units	Symbol				
Cyanide(free)	Colorimetry (CF)	1	mg/kg	U	-			
Phenols (Total-Mono)	Colorimetry (CF)	1	mg/kg	U	<1			

SAL Reference: 606126										
Project Site: Chartham										
Customer Reference: 239792										
Soil Analysed as Soil										
Total and Speciated USEPA16 PAH (SE)										
SAL Reference		606126 001	606126 002	606126 003	606126 006	606126 007				
Customer Sample Reference		TP01 @ 0.50m	TP02 @ 0.40m	TP03 @ 0.40m	TP06 @ 0.20m	TP06 @ 0.50m				
Test Sample		AR	AR	AR	AR	AR				
Date Sampled		06-OCT-2016	06-OCT-2016	06-OCT-2016	06-OCT-2016	06-OCT-2016				
Determinand	Method	LOD	Units	Symbol						
Naphthalene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Acenaphthylene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Acenaphthene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	0.6	0.6
Anthracene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	<0.1	0.5
Fluoranthene	GC/MS	0.1	mg/kg	N	<0.1	<0.1	<0.1	<0.1	1.4	3.4
Pyrene	GC/MS	0.1	mg/kg	N	<0.1	<0.1	<0.1	<0.1	1.2	2.6
Benzo(a)Anthracene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	0.6	1.7
Chrysene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	0.8	1.9
Benzo(b)fluoranthene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	0.4	1.3
Benzo(k)fluoranthene	GC/MS	0.1	mg/kg	N	<0.1	<0.1	<0.1	<0.1	0.4	0.9
Benzo(a)Pyrene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	0.3	0.9
Indeno(123-cd)Pyrene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	0.2	0.3
Dibenzo(ah)Anthracene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Benzo(ghi)Perylene	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	0.2	0.3
Polyaromatic Hydrocarbons (Total)	GC/MS	0.1	mg/kg	U	<0.1	<0.1	<0.1	<0.1	5.9	15

SAL Reference: 606126							
Project Site: Chartham							
Customer Reference: 239792							
Soil Analysed as Soil							
TPH UKCWG							
SAL Reference					606126 002	606126 003	606126 007
Customer Sample Reference					TP02 @ 0.40m	TP03 @ 0.40m	TP06 @ 0.50m
Test Sample					AR	AR	AR
Date Sampled					06-OCT-2016	06-OCT-2016	06-OCT-2016
Determinand	Method	LOD	Units	Symbol			
Benzene	GC/MS (Headspace)	1	µg/kg	U	<1	<1	<1
Toluene	GC/MS (Headspace)	1	µg/kg	U	<1	<1	<1
EthylBenzene	GC/MS (Headspace)	1	µg/kg	U	<1	<1	<1
Meta/Para-Xylene	GC/MS (Headspace)	1	µg/kg	U	<1	<1	<1
Ortho-Xylene	GC/MS (Headspace)	1	µg/kg	U	<1	<1	<1
Methyl tert-Butyl Ether	GC/MS (Headspace)	1	µg/kg	U	<1	<1	<1
Total Petroleum Hydrocarbons (C5 - C6 aliphatic)	GC/MS (Headspace)	0.010	mg/kg	N	<0.010	<0.010	<0.010
Total Petroleum Hydrocarbons (C6 - C7 aromatic)	GC/MS (Headspace)	0.010	mg/kg	N	<0.010	<0.010	<0.010
Total Petroleum Hydrocarbons (C6-C8 aliphatic)	GC/MS (Headspace)	0.010	mg/kg	N	<0.010	<0.010	<0.010
Total Petroleum Hydrocarbons (C7-C8 aromatic)	GC/MS (Headspace)	0.010	mg/kg	N	<0.010	<0.010	<0.010
Total Petroleum Hydrocarbons (C8-C10 aliphatic)	GC/MS (Headspace)	0.010	mg/kg	N	<0.010	<0.010	<0.010
Total Petroleum Hydrocarbons (C8-C10 aromatic)	GC/MS (Headspace)	0.010	mg/kg	N	<0.010	<0.010	<0.010
Total Petroleum Hydrocarbons (C10-C12 aliphatic)	GC/FID (SE)	2	mg/kg	N	<2	<2	<2
Total Petroleum Hydrocarbons (C10-C12 aromatic)	GC/FID (SE)	2	mg/kg	N	<2	<2	<2
Total Petroleum Hydrocarbons (C12-C16 aliphatic)	GC/FID (SE)	2	mg/kg	N	<2	<2	<2
Total Petroleum Hydrocarbons (C12-C16 aromatic)	GC/FID (SE)	2	mg/kg	N	<2	<2	<2
Total Petroleum Hydrocarbons (C16-C21 aliphatic)	GC/FID (SE)	2	mg/kg	N	<2	<2	<2
Total Petroleum Hydrocarbons (C16-C21 aromatic)	GC/FID (SE)	2	mg/kg	N	<2	<2	28
Total Petroleum Hydrocarbons (C21-C35 aliphatic)	GC/FID (SE)	2	mg/kg	N	<2	<2	5
Total Petroleum Hydrocarbons (C21-C35 aromatic)	GC/FID (SE)	2	mg/kg	N	<2	<2	54

SAL Reference: 606126							
Project Site: Chartham							
Customer Reference: 239792							
Soil Analysed as Soil							
Total Petroleum Hydrocarbons CWG (SE)							
SAL Reference					606126 001	606126 006	
Customer Sample Reference					TP01 @ 0.50m	TP06 @ 0.20m	
Test Sample					AR	AR	
Date Sampled					06-OCT-2016	06-OCT-2016	
Determinand	Method	LOD	Units	Symbol			
Benzene	GC/MS (Headspace)	1	µg/kg	U	<1	<1	
Toluene	GC/MS (Headspace)	1	µg/kg	U	<1	<1	
EthylBenzene	GC/MS (Headspace)	1	µg/kg	U	<1	<1	
Meta/Para-Xylene	GC/MS (Headspace)	1	µg/kg	U	<1	<1	
Ortho-Xylene	GC/MS (Headspace)	1	µg/kg	U	<1	<1	
Total Petroleum Hydrocarbons (C5 - C6 aliphatic)	GC/MS (Headspace)	0.10	mg/kg	N	<0.10	<0.10	
Total Petroleum Hydrocarbons (C6 - C7 aromatic)	GC/MS (Headspace)	0.10	mg/kg	N	<0.10	<0.10	
Total Petroleum Hydrocarbons (C6-C8 aliphatic)	GC/MS (Headspace)	0.10	mg/kg	N	<0.10	<0.10	
Total Petroleum Hydrocarbons (C7-C8 aromatic)	GC/MS (Headspace)	0.10	mg/kg	N	<0.10	<0.10	
Total Petroleum Hydrocarbons (C8-C10 aliphatic)	GC/MS (Headspace)	0.10	mg/kg	N	<0.10	<0.10	
Total Petroleum Hydrocarbons (C8-C10 aromatic)	GC/MS (Headspace)	0.10	mg/kg	N	<0.10	<0.10	
Total Petroleum Hydrocarbons (C10-C12 aliphatic)	GC/FID (SE)	2	mg/kg	N	<2	<2	
Total Petroleum Hydrocarbons (C10-C12 aromatic)	GC/FID (SE)	2	mg/kg	N	<2	6	
Total Petroleum Hydrocarbons (C12-C16 aliphatic)	GC/FID (SE)	2	mg/kg	N	<2	<2	
Total Petroleum Hydrocarbons (C12-C16 aromatic)	GC/FID (SE)	2	mg/kg	N	<2	72	
Total Petroleum Hydrocarbons (C16-C21 aliphatic)	GC/FID (SE)	2	mg/kg	N	<2	120	
Total Petroleum Hydrocarbons (C16-C21 aromatic)	GC/FID (SE)	2	mg/kg	N	<2	72	
Total Petroleum Hydrocarbons (C21-C35 aliphatic)	GC/FID (SE)	2	mg/kg	N	<2	620	
Total Petroleum Hydrocarbons (C21-C35 aromatic)	GC/FID (SE)	2	mg/kg	N	<2	160	

SAL Reference: 606126						
Project Site: Chartham						
Customer Reference: 239792						
Soil Analysed as Soil						
PCBs EC7 (SE)						
SAL Reference					606126 001	606126 006
Customer Sample Reference					TP01 @ 0.50m	TP06 @ 0.20m
Test Sample					AR	AR
Date Sampled					06-OCT-2016	06-OCT-2016
Determinand	Method	LOD	Units	Symbol		
Polychlorinated biphenyl BZ#28	GC/MS	20	µg/kg	U	<20	<20
Polychlorinated biphenyl BZ#52	GC/MS	20	µg/kg	U	<20	<20
Polychlorinated biphenyl BZ#101	GC/MS	20	µg/kg	U	<20	<20
Polychlorinated biphenyl BZ#118	GC/MS	20	µg/kg	U	<20	<20
Polychlorinated biphenyl BZ#153	GC/MS	20	µg/kg	U	<20	<20
Polychlorinated biphenyl BZ#138	GC/MS	20	µg/kg	U	<20	<20
Polychlorinated biphenyl BZ#180	GC/MS	20	µg/kg	U	<20	<20

Index to symbols used in 606126-1

Value	Description
10:1 S	Data for BS EN 12457-2 (10:1)
A40	Assisted dried < 40C
AR	As Received
S	Analysis was subcontracted
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

Asbestos subcontracted to REC Limited
pH, LOI, TOC & where stated in the CET Waste Classification Suite were performed on assisted dried samples (<40 degree centigrade). All other results relate to samples as received.





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Certificate of Analysis

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Report Number: 606964-1

Date of Report: 19-Oct-2016

Customer: CET Infrastructure
Northdown House
Harrietsham Maidstone Kent
ME17 1QW

Customer Contact: Mr Gavin Greenwood

Customer Job Reference: 239792

Customer Site Reference: Chartham

Date Job Received at SAL: 13-Oct-2016

Date Analysis Started: 14-Oct-2016

Date Analysis Completed: 18-Oct-2016

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with SAL SOPs

All results have been reviewed in accordance with Section 25 of the SAL Quality Manual



1549

Report checked
and authorised by :
Chelsea Entwistle
Project Manager

Issued by :
Chelsea Entwistle
Project Manager

SAL Reference: 606964 Project Site: Chartham Customer Reference: 239792							
Soil		Analysed as Soil					
Miscellaneous							
SAL Reference				606964 001	606964 002	606964 003	
Customer Sample Reference				TP01 @ 1.80m	TP02 @ 1.00m	TP06 @ 1.00m	
Date Sampled				06-OCT-2016	06-OCT-2016	06-OCT-2016	
Determinand	Method	Test Sample	LOD	Units			
pH	T7	A40			8.5	8.6	8.4
(Water Soluble) SO4 expressed as SO4	T242	A40	0.01	g/l	0.01	<0.01	0.02

Index to symbols used in 606964-1

Value	Description
A40	Assisted dried < 40C
U	Analysis is UKAS accredited

Method Index

Value	Description
T242	2:1 Extraction/ICP/OES (TRL 447 T1)
T7	Probe

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
pH	T7	A40			U	001-003
(Water Soluble) SO4 expressed as SO4	T242	A40	0.01	g/l	U	001-003

APPENDIX D

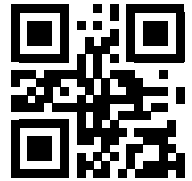
Conceptual Site Model

Source Media	Potential Contaminants	Pathway	Receptor	Risk Rating	Rationale/Notes
<p><u>On Site</u></p> <p>Localised Made Ground associated with burning of waste and stockpiling of soil in the northwestern part of the site.</p>	Lead	Inhalation of dust	<p>Future site users/occupants</p> <p>Construction/utility workers</p>	Low	<p>Dust generation only likely when the existing surface is significantly disturbed during the construction phase.</p> <p>Short term risks to construction workers can be mitigated by on site with appropriate PPE and health and hygiene practices.</p> <p>Risks would be more pertinent if asbestos is identified in shallow Made Ground soils.</p> <p>As good practice appropriate dust suppression measures should be implemented regardless of the presence of contamination.</p>
		Direct contact and ingestion	<p>Future site users/occupants</p> <p>Construction/utility workers</p>	Low	<p>Risk to future site users/occupants includes private rear gardens and areas of soft landscaping.</p> <p>Risks to construction workers and utility contractors can be mitigated with appropriate PPE and health and hygiene practices.</p> <p>Risks could be posed to new buried structures and services laid in direct contact with contaminated soils.</p>

APPENDIX E

HazWasteOnline™ Output Sheets

Waste Classification Report



WHF8D-GWF9C-ELB93

Job name

239792 Chartham

Description/Comments

Hazwaste assessment for housing development

Project

239792

Site

Hill House, Bakers Lane, Chartham

Waste Stream Template

CET WM3 V1

Classified by

Name:
Gavin Greenwood
 Date:
26/10/2016 07:49:48 UTC
 Telephone:
01622 858545

Company:
CET Structures Ltd
Northdown House
Ashford Road
Harrietsham
ME17 1QW

Report

Created by: Gavin Greenwood
 Created date: 26/10/2016 07:49 UTC

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	TP01	0.5	Non Hazardous		2
2	TP02	0.4	Non Hazardous		5
3	TP03	0.4	Non Hazardous		8
4	TP04	0.2	Hazardous	HP 3(i), HP 7, HP 11	11
5	TP06	0.5	Non Hazardous		14

Appendices

	Page
Appendix A: Classifier defined and non CLP determinands	17
Appendix B: Rationale for selection of metal species	19
Appendix C: Version	19

Classification of sample: TP01

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

Sample details

Sample Name:	LoW Code:	
TP01	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5 m		
Moisture content:		
0%		
(dry weight correction)		

Hazard properties

None identified





Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	0				8.2	pH		8.2	pH	8.2 pH		
2	033-003-00-0	215-481-4	1327-53-3		10	mg/kg	1.32	13.203	mg/kg	0.00132 %	✔	
3			10294-33-4, 10294-34-5, 7637-07-2		<1	mg/kg	13.43	<13.43	mg/kg	<0.00134 %	✔	<LOD
4	048-010-00-4	215-147-8	1306-23-6	1	0.2	mg/kg	1.29	0.257	mg/kg	0.00002 %	✔	
5		215-160-9	1308-38-9		20	mg/kg	1.46	20	mg/kg	0.002 %	✔	
6	029-002-00-X	215-270-7	1317-39-1		23	mg/kg	1.13	25.895	mg/kg	0.00259 %	✔	
7	082-004-00-2	231-846-0	7758-97-6	1	46	mg/kg	1.56	71.751	mg/kg	0.0046 %	✔	
8	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.35	<1.353	mg/kg	<0.000135 %	✔	<LOD
9	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		21	mg/kg	1.58	33.169	mg/kg	0.00332 %	✔	
10	034-002-00-8				<3	mg/kg	2.55	<7.661	mg/kg	<0.000766 %	✔	<LOD
11	024-007-00-3				59	mg/kg	2.77	163.675	mg/kg	0.0164 %	✔	
12	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg		<1	mg/kg	<0.0001 %	✔	<LOD
13					<1	mg/kg	1.88	<1.884	mg/kg	<0.000188 %	✔	<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
14	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %	✓	<LOD
	604-001-00-2	203-632-7	108-95-2							
15	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %	✓	<LOD
			TPH							
16	polychlorobiphenyls; PCB				<0.14 mg/kg		<0.14 mg/kg	<0.000014 %	✓	<LOD
	602-039-00-4	215-648-1	1336-36-3							
17	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-052-00-2	202-049-5	91-20-3							
18	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-917-1	208-96-8							
19	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-469-6	83-32-9							
20	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-695-5	86-73-7							
21	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-581-5	85-01-8							
22	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		204-371-1	120-12-7							
23	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-912-4	206-44-0							
24	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		204-927-3	129-00-0							
25	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-033-00-9	200-280-6	56-55-3							
26	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-048-00-0	205-923-4	218-01-9							
27	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-034-00-4	205-911-9	205-99-2							
28	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-036-00-5	205-916-6	207-08-9							
29	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-032-00-3	200-028-5	50-32-8							
30	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-893-2	193-39-5							
31	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-041-00-2	200-181-8	53-70-3							
32	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-883-8	191-24-2							
33	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-020-00-8	200-753-7	71-43-2							
34	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-023-00-4	202-849-4	100-41-4							
35	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<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]							
36	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-021-00-3	203-625-9	108-88-3							
Total:								0.034 %		

Key

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

Classification of sample: TP02

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

Sample details

Sample Name:	LoW Code:	
TP02	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.4 m		
Moisture content:		
0% (dry weight correction)		

Hazard properties

None identified





Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	pH		PH		8.2 pH		8.2 pH	8.2 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	7.2 mg/kg	1.32	9.506 mg/kg	0.000951 %	✓	
3	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2	<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %	✓	<LOD
4	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.2 mg/kg	1.29	0.257 mg/kg	0.00002 %	✓	
5	chromium(III) oxide		215-160-9	1308-38-9	11 mg/kg	1.46	11 mg/kg	0.0011 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	15 mg/kg	1.13	16.888 mg/kg	0.00169 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	18 mg/kg	1.56	28.077 mg/kg	0.0018 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	<1 mg/kg	1.35	<1.353 mg/kg	<0.000135 %	✓	<LOD
9	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]	15 mg/kg	1.58	23.692 mg/kg	0.00237 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8			<3 mg/kg	2.55	<7.661 mg/kg	<0.000766 %	✓	<LOD
11	zinc { zinc chromate }	024-007-00-3			37 mg/kg	2.77	102.643 mg/kg	0.0103 %	✓	
12	chromium(VI) oxide	024-001-00-0	215-607-8	1333-82-0	<1 mg/kg		<1 mg/kg	<0.0001 %	✓	<LOD
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides,				<1 mg/kg	1.88	<1.884 mg/kg	<0.000188 %	✓	<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex)									
	006-007-00-5									
14	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %	✓	<LOD
	604-001-00-2	203-632-7	108-95-2							
15	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %	✓	<LOD
			TPH							
16	polychlorobiphenyls; PCB				<0.14 mg/kg		<0.14 mg/kg	<0.000014 %	✓	<LOD
	602-039-00-4	215-648-1	1336-36-3							
17	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-052-00-2	202-049-5	91-20-3							
18	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-917-1	208-96-8							
19	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-469-6	83-32-9							
20	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-695-5	86-73-7							
21	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-581-5	85-01-8							
22	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		204-371-1	120-12-7							
23	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-912-4	206-44-0							
24	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		204-927-3	129-00-0							
25	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-033-00-9	200-280-6	56-55-3							
26	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-048-00-0	205-923-4	218-01-9							
27	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-034-00-4	205-911-9	205-99-2							
28	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-036-00-5	205-916-6	207-08-9							
29	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-032-00-3	200-028-5	50-32-8							
30	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-893-2	193-39-5							
31	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-041-00-2	200-181-8	53-70-3							
32	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-883-8	191-24-2							
33	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-020-00-8	200-753-7	71-43-2							
34	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-023-00-4	202-849-4	100-41-4							
35	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<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]							
36	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-021-00-3	203-625-9	108-88-3							
Total:								0.022 %		

Key

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

Classification of sample: TP03

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

Sample details

Sample Name:	LoW Code:	
TP03	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.4 m		
Moisture content:		
0%		
(dry weight correction)		

Hazard properties

None identified





Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	0				8.6	pH		8.6	pH	8.6 pH		
2	033-003-00-0	215-481-4	1327-53-3		5.9	mg/kg	1.32	7.79	mg/kg	0.000779 %	✔	
3			10294-33-4, 10294-34-5, 7637-07-2		<1	mg/kg	13.43	<13.43	mg/kg	<0.00134 %	✔	<LOD
4	048-010-00-4	215-147-8	1306-23-6	1	0.2	mg/kg	1.29	0.257	mg/kg	0.00002 %	✔	
5		215-160-9	1308-38-9		11	mg/kg	1.46	11	mg/kg	0.0011 %	✔	
6	029-002-00-X	215-270-7	1317-39-1		7.4	mg/kg	1.13	8.332	mg/kg	0.000833 %	✔	
7	082-004-00-2	231-846-0	7758-97-6	1	7.7	mg/kg	1.56	12.011	mg/kg	0.00077 %	✔	
8	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.35	<1.353	mg/kg	<0.000135 %	✔	<LOD
9	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		11	mg/kg	1.58	17.374	mg/kg	0.00174 %	✔	
10	034-002-00-8				<3	mg/kg	2.55	<7.661	mg/kg	<0.000766 %	✔	<LOD
11	024-007-00-3				26	mg/kg	2.77	72.128	mg/kg	0.00721 %	✔	
12	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg		<1	mg/kg	<0.0001 %	✔	<LOD
13					<1	mg/kg	1.88	<1.884	mg/kg	<0.000188 %	✔	<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
14	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %	✓	<LOD
	604-001-00-2	203-632-7	108-95-2							
15	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %	✓	<LOD
			TPH							
16	polychlorobiphenyls; PCB				<0.14 mg/kg		<0.14 mg/kg	<0.000014 %	✓	<LOD
	602-039-00-4	215-648-1	1336-36-3							
17	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-052-00-2	202-049-5	91-20-3							
18	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-917-1	208-96-8							
19	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-469-6	83-32-9							
20	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-695-5	86-73-7							
21	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-581-5	85-01-8							
22	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		204-371-1	120-12-7							
23	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-912-4	206-44-0							
24	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		204-927-3	129-00-0							
25	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-033-00-9	200-280-6	56-55-3							
26	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-048-00-0	205-923-4	218-01-9							
27	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-034-00-4	205-911-9	205-99-2							
28	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-036-00-5	205-916-6	207-08-9							
29	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-032-00-3	200-028-5	50-32-8							
30	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-893-2	193-39-5							
31	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
	601-041-00-2	200-181-8	53-70-3							
32	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		205-883-8	191-24-2							
33	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-020-00-8	200-753-7	71-43-2							
34	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-023-00-4	202-849-4	100-41-4							
35	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<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]							
36	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-021-00-3	203-625-9	108-88-3							
Total:								0.0163 %		

Key

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

Classification of sample: TP04

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

Sample details

Sample Name:	LoW Code:	
TP04	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 03 * (Soil and stones containing hazardous substances)
0.2 m		
Moisture content:		
0%		
(dry weight correction)		

Hazard properties

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

Hazard Statements hit:

Carc. 1B; 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:

TPH (C6 to C40) petroleum group: (conc.: 0.105%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.105%)

Hazard properties (substances considered hazardous until shown otherwise)

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"

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.105%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	pH		PH		7.6 pH		7.6 pH	7.6 pH		
2	arsenic { arsenic trioxide }				9 mg/kg	1.32	11.883 mg/kg	0.00119 %	✓	
	033-003-00-0	215-481-4	1327-53-3							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
3	boron { boron tribromide/trichloride/trifluoride (combined) }				<1	mg/kg	13.43	<13.43	mg/kg	<0.00134 %	✓	<LOD
			10294-33-4, 10294-34-5, 7637-07-2									
4	cadmium { cadmium sulfide }			1	0.4	mg/kg	1.29	0.514	mg/kg	0.00004 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
5	chromium(III) oxide				13	mg/kg	1.46	13	mg/kg	0.0013 %	✓	
		215-160-9	1308-38-9									
6	copper { dicopper oxide; copper (I) oxide }				31	mg/kg	1.13	34.903	mg/kg	0.00349 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
7	lead { lead chromate }			1	240	mg/kg	1.56	374.356	mg/kg	0.024 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
8	mercury { mercury dichloride }				<1	mg/kg	1.35	<1.353	mg/kg	<0.000135 %	✓	<LOD
	080-010-00-X	231-299-8	7487-94-7									
9	nickel { nickel dihydroxide }				12	mg/kg	1.58	18.954	mg/kg	0.0019 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<3	mg/kg	2.55	<7.661	mg/kg	<0.000766 %	✓	<LOD
	034-002-00-8											
11	zinc { zinc chromate }				190	mg/kg	2.77	527.088	mg/kg	0.0527 %	✓	
	024-007-00-3											
12	chromium(VI) oxide				<1	mg/kg		<1	mg/kg	<0.0001 %	✓	<LOD
	024-001-00-0	215-607-8	1333-82-0									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.88	<1.884	mg/kg	<0.000188 %	✓	<LOD
	006-007-00-5											
14	phenol				<1	mg/kg		<1	mg/kg	<0.0001 %	✓	<LOD
	604-001-00-2	203-632-7	108-95-2									
15	TPH (C6 to C40) petroleum group				1050	mg/kg		1050	mg/kg	0.105 %	✓	
			TPH									
16	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>							
17	polychlorobiphenyls; PCB				<0.14	mg/kg		<0.14	mg/kg	<0.000014 %	✓	<LOD
	602-039-00-4	215-648-1	1336-36-3									
18	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %	✓	<LOD
	601-052-00-2	202-049-5	91-20-3									
19	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %	✓	<LOD
		205-917-1	208-96-8									
20	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %	✓	<LOD
		201-469-6	83-32-9									
21	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %	✓	<LOD
		201-695-5	86-73-7									
22	phenanthrene				0.6	mg/kg		0.6	mg/kg	0.00006 %	✓	
		201-581-5	85-01-8									
23	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %	✓	<LOD
		204-371-1	120-12-7									
24	fluoranthene				1.4	mg/kg		1.4	mg/kg	0.00014 %	✓	
		205-912-4	206-44-0									
25	pyrene				1.2	mg/kg		1.2	mg/kg	0.00012 %	✓	
		204-927-3	129-00-0									
26	benzo[a]anthracene				0.6	mg/kg		0.6	mg/kg	0.00006 %	✓	
	601-033-00-9	200-280-6	56-55-3									
27	chrysene				0.8	mg/kg		0.8	mg/kg	0.00008 %	✓	
	601-048-00-0	205-923-4	218-01-9									
28	benzo[b]fluoranthene				0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
	601-034-00-4	205-911-9	205-99-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
29	benzo[k]fluoranthene 601-036-00-5 205-916-6 207-08-9				0.4 mg/kg		0.4 mg/kg	0.00004 %	✓	
30	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 200-028-5 50-32-8				0.3 mg/kg		0.3 mg/kg	0.00003 %	✓	
31	indeno[123-cd]pyrene 205-893-2 193-39-5				0.2 mg/kg		0.2 mg/kg	0.00002 %	✓	
32	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
33	benzo[ghi]perylene 205-883-8 191-24-2				0.2 mg/kg		0.2 mg/kg	0.00002 %	✓	
34	benzene 601-020-00-8 200-753-7 71-43-2				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
35	ethylbenzene 601-023-00-4 202-849-4 100-41-4				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
36	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
37	toluene 601-021-00-3 203-625-9 108-88-3				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
Total:								0.193 %		

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 Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP06

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

Sample details

Sample Name:	LoW Code:	
TP06	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5 m		
Moisture content:		
0%		
(dry weight correction)		

Hazard properties

None identified





Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	0				7.9 pH		7.9 pH	7.9 pH		
2	033-003-00-0	215-481-4	1327-53-3		5.7 mg/kg	1.32	7.526 mg/kg	0.000753 %	✔	
3			10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %	✔	<LOD
4	048-010-00-4	215-147-8	1306-23-6	1	0.3 mg/kg	1.29	0.386 mg/kg	0.00003 %	✔	
5		215-160-9	1308-38-9		8.5 mg/kg	1.46	8.5 mg/kg	0.00085 %	✔	
6	029-002-00-X	215-270-7	1317-39-1		16 mg/kg	1.13	18.014 mg/kg	0.0018 %	✔	
7	082-004-00-2	231-846-0	7758-97-6	1	250 mg/kg	1.56	389.954 mg/kg	0.025 %	✔	
8	080-010-00-X	231-299-8	7487-94-7		<1 mg/kg	1.35	<1.353 mg/kg	<0.000135 %	✔	<LOD
9	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		9.5 mg/kg	1.58	15.005 mg/kg	0.0015 %	✔	
10	034-002-00-8				<3 mg/kg	2.55	<7.661 mg/kg	<0.000766 %	✔	<LOD
11	024-007-00-3				99 mg/kg	2.77	274.641 mg/kg	0.0275 %	✔	
12	024-001-00-0	215-607-8	1333-82-0		<1 mg/kg		<1 mg/kg	<0.0001 %	✔	<LOD
13					<1 mg/kg	1.88	<1.884 mg/kg	<0.000188 %	✔	<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
	ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }									
	006-007-00-5									
14	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %	✓	<LOD
	604-001-00-2	203-632-7	108-95-2							
15	TPH (C6 to C40) petroleum group				87 mg/kg		87 mg/kg	0.0087 %	✓	
			TPH							
16	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
17	polychlorobiphenyls; PCB				<0.14 mg/kg		<0.14 mg/kg	<0.000014 %	✓	<LOD
	602-039-00-4	215-648-1	1336-36-3							
18	naphthalene				0.1 mg/kg		0.1 mg/kg	0.00001 %	✓	
	601-052-00-2	202-049-5	91-20-3							
19	acenaphthylene				0.1 mg/kg		0.1 mg/kg	0.00001 %	✓	
		205-917-1	208-96-8							
20	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-469-6	83-32-9							
21	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	✓	<LOD
		201-695-5	86-73-7							
22	phenanthrene				0.6 mg/kg		0.6 mg/kg	0.00006 %	✓	
		201-581-5	85-01-8							
23	anthracene				0.5 mg/kg		0.5 mg/kg	0.00005 %	✓	
		204-371-1	120-12-7							
24	fluoranthene				3.4 mg/kg		3.4 mg/kg	0.00034 %	✓	
		205-912-4	206-44-0							
25	pyrene				2.6 mg/kg		2.6 mg/kg	0.00026 %	✓	
		204-927-3	129-00-0							
26	benzo[a]anthracene				1.7 mg/kg		1.7 mg/kg	0.00017 %	✓	
	601-033-00-9	200-280-6	56-55-3							
27	chrysene				1.9 mg/kg		1.9 mg/kg	0.00019 %	✓	
	601-048-00-0	205-923-4	218-01-9							
28	benzo[b]fluoranthene				1.3 mg/kg		1.3 mg/kg	0.00013 %	✓	
	601-034-00-4	205-911-9	205-99-2							
29	benzo[k]fluoranthene				0.9 mg/kg		0.9 mg/kg	0.00009 %	✓	
	601-036-00-5	205-916-6	207-08-9							
30	benzo[a]pyrene; benzo[def]chrysene				0.9 mg/kg		0.9 mg/kg	0.00009 %	✓	
	601-032-00-3	200-028-5	50-32-8							
31	indeno[123-cd]pyrene				0.3 mg/kg		0.3 mg/kg	0.00003 %	✓	
		205-893-2	193-39-5							
32	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %	✓	
	601-041-00-2	200-181-8	53-70-3							
33	benzo[ghi]perylene				0.3 mg/kg		0.3 mg/kg	0.00003 %	✓	
		205-883-8	191-24-2							
34	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-020-00-8	200-753-7	71-43-2							
35	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-023-00-4	202-849-4	100-41-4							
36	xylene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<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]							
37	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	✓	<LOD
	601-021-00-3	203-625-9	108-88-3							
Total:								0.0702 %		

Key

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

Supplementary Hazardous Property Information

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: **Force this Hazardous property to non hazardous because Unlikely to be flammable >0.1%**

Appendix A: Classifier defined and non CLP determinands

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

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25/05/2015
Risk Phrases: None.
Hazard Statements: None.

- **boron tribromide/trichloride/trifluoride (combined)** (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

Conversion factor: 13.43
Description/Comments: Combines the hazard statements and the average of the conversion factors for boron tribromide, boron trichloride and boron trifluoride
Data source: N/A
Data source date: 06/08/2015
Risk Phrases: R14 , T+ R26/28 , C R34 , C R35
Hazard Statements: EUH014 , Acute Tox. 2 H330 , Acute Tox. 2 H300 , Skin Corr. 1A H314 , Skin Corr. 1B H314

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

Conversion factor: 1.462
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: 17/07/2015
Risk Phrases: R20 , R22 , R36 , R37 , R38 , R42 , R43 , R50/53 , R60 , R61
Hazard Statements: Acute Tox. 4 H332 , Acute Tox. 4 H302 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Resp. Sens. 1 H334 , Skin Sens. 1 H317 , Repr. 1B H360FD , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

- **dicopper oxide; copper (I) oxide** (EC Number: 215-270-7, CAS Number: 1317-39-1)

CLP index number: 029-002-00-X
Data source: Regulation (EU) 2016/1179 of 19 July 2016 (ATP9)
Additional Risk Phrases: N R50/53 , N R50/53 >= 0.25 %
Additional Hazard Statement(s): None.
Reason for additional Hazards Statement(s)/Risk Phrase(s): Reason for additional Hazards Statement(s)/Risk Phrase(s):
10/10/2016 - N R50/53 risk phrase sourced from: WM3 v1 still uses ecotoxic risk phrases
10/10/2016 - N R50/53 >= 0.25 % risk phrase sourced from: WM3 v1 still uses ecotoxic risk phrases

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

CLP index number: 006-007-00-5
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Risk Phrases: None.
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s)/Risk Phrase(s): Reason for additional Hazards Statement(s)/Risk Phrase(s):
14/12/2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **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: 25/05/2015
Risk Phrases: R10 , R45 , R46 , R51/53 , R63 , R65
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

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

CLP index number: 602-039-00-4
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Risk Phrases: None.
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s)/Risk Phrase(s): Reason for additional Hazards Statement(s)/Risk Phrase(s):
29/09/2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

• **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: 17/07/2015

Risk Phrases: R22 , R26 , R27 , R36 , R37 , R38

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: 17/07/2015

Risk Phrases: R36 , R37 , R38 , N R50/53 , N R51/53

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: 06/08/2015

Risk Phrases: N R50/53

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: 06/08/2015

Risk Phrases: R22 , R36 , R37 , R38 , R40 , R43 , N R50/53

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: 17/07/2015

Risk Phrases: R36 , R37 , R38 , R43 , N R50/53

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: 21/08/2015

Risk Phrases: Xn R22 , N R50/53

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: 21/08/2015

Risk Phrases: Xi R36/37/38 , N R50/53

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: 06/08/2015

Risk Phrases: R40

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: 23/07/2015

Risk Phrases: N R50/53

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

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

CLP index number: 601-023-00-4

Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)

Additional Risk Phrases: None.

Additional Hazard Statement(s): Carc. 2 H351

Reason for additional Hazards Statement(s)/Risk Phrase(s): Reason for additional Hazards Statement(s)/Risk Phrase(s): 03/06/2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

▪ **confirm TPH has NOT arisen from diesel or petrol**

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)

Data source: WM3 1st Edition 2015

Data source date: 25/05/2015

Risk Phrases: None.

Hazard Statements: None.

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on risk phrases

boron {boron tribromide/trichloride/trifluoride (combined)}

Worst case species based on risk phrases

cadmium {cadmium sulfide}

Worst case species based on risk phrases

copper {dicopper oxide; copper (I) oxide}

Most likely common species

lead {lead chromate}

Worst case species based on risk phrases

mercury {mercury dichloride}

Worst case species based on risk phrases

nickel {nickel dihydroxide}

Worst case species based on risk phrases

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

Worst case species based on risk phrases

zinc {zinc chromate}

Worst case species based on risk phrases

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

Worst case species

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition, May 2015

HazWasteOnline Classification Engine Version: 2016.298.3126.6213 (24 Oct 2016)

HazWasteOnline Database: 2016.298.3126.6213 (24 Oct 2016)

This classification utilises the following guidance and legislation:

- WM3 - Waste Classification** - May 2015
- 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 Wastes 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
- POPs Regulation 2004** - Regulation 850/2004/EC of 29 April 2004
- 1st ATP to POPs Regulation** - Regulation 756/2010/EU of 24 August 2010
- 2nd ATP to POPs Regulation** - Regulation 757/2010/EU of 24 August 2010