

South Yorkshire Mayoral Combined
Authority

A61, Old Mill Lane, Barnsley

Ground Conditions and
Contaminated Land Assessment

253511/G/002

P02 | 7 December 2022

This report takes into account the particular
instructions and requirements of our client.

It is not intended for and should not be relied
upon by any third party and no responsibility
is undertaken to any third party.

Job number 253511-00

Ove Arup & Partners Ltd
9th Floor 3 St Paul's Place
Norfolk Street
Sheffield S1 2JE
United Kingdom
www.arup.com

ARUP

Document verification

ARUP

Job title		A61, Old Mill Lane, Barnsley		Job number	
				253511-00	
Document title		Ground Conditions and Contaminated Land Assessment		File reference	
Document ref		253511/G/002			
Revision	Date	Filename	2019-03-05_Phase 2.docx		
Draft 1	5 Mar 2019	Description	First draft		
			Prepared by	Checked by	Approved by
		Name	Paddy Samengo-Turner	Heather Beaumont	Justin Howell
		Signature			
P01	5 Apr 2019	Filename	253511-G-002-P01.docx		
		Description	For issue		
			Prepared by	Checked by	Approved by
		Name	Paddy Samengo-Turner	Heather Beaumont	Justin Howell
		Signature			
P02	7 Dec 2022	Filename	253511-G-002-P02.docx		
		Description	Second issue		
			Prepared by	Checked by	Approved by
		Name	James Astbury	Paddy Samengo-Turner	Justin Howell
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
Issue Document verification with document ☒					

Contents

	Page
1 Introduction	2
1.1 General	2
1.2 Proposed development	2
1.3 Purpose of the report	2
1.4 Sources of information	2
1.5 Report structure	2
1.6 Use of report and limitations	3
2 The site	4
2.1 Site description and topography	4
2.2 Historical land use	4
2.3 Geology	5
2.4 Hydrogeology	5
2.5 Hydrology	5
2.6 Flood risk	6
2.7 Archaeological Interest	6
2.8 Unexploded Ordnance (UXO)	6
3 Ground investigation	7
3.1 Historical ground investigation	7
3.2 AEG 2018 ground investigation	7
3.3 AEG 2021 ground investigation	8
4 Ground conditions	10
4.1 Stratigraphy	10
4.2 Made ground	10
4.3 Alluvium	11
4.4 Pennine Middle Coal Measures Formation	12
4.5 Groundwater	13
5 Geo-environmental assessment	14
5.1 Introduction	14
5.2 Initial conceptual site model	14
5.3 Data screening	15
5.4 Soil disposal	16
5.5 Ground gas	16
5.6 Ground gas risk assessment	17
5.7 Concrete aggressivity	17
5.8 Revised conceptual site model	18

6	Remediation strategy	19
6.1	Imported clean topsoil	19
6.2	Imported fill materials	20
6.3	Construction best practice	21
7	Engineering Considerations	22
7.1	Proposed development	22
7.2	Potential coal mining	22
7.3	New abutment foundations	24
7.4	Wingwalls	25
7.5	Embankments	25
8	Conclusions and recommendations	27
8.1	Conclusions	27
8.2	Recommendations	27

Figures

- Figure 1 Site location plan
- Figure 2 Site boundary
- Figure 3 As-built Exploratory hole location plan
- Figure 4 Geological cross-section
- Figure 5 Features and constraints plan

Appendices

Appendix A

Soil screening results

Appendix B

South Yorkshire Mining Advisory Service report

Appendix C

Verification Requirements for Cover Systems

Executive summary

The site is located to the northeast of Barnsley City Centre and includes the A61, Old Mill Lane Bridge crossing the River Dearne. The proposed development involves widening and re-decking the existing bridge.

Historical land uses have included a paper mill which was situated on the southern bank of the river immediately adjacent to the existing western abutment and extended to the river edge. To the immediate east of the bridge a general works and tannery were located, and gas works to the immediate north of the river (off site).

A ground investigation was carried out by Allied Exploration & Geotechnics Ltd in June 2018 following a geotechnical and geo-environmental desk study. This consisted of four boreholes, three window samples and two dynamic probes. All exploratory holes on the south of the river (three boreholes and a windowless sample) hit obstructions within the made ground. The obstructions may be related to the mill historically present to the south of the river. An additional phase of ground investigation was undertaken in September 2021. This investigation targeted locations which could not be accessed during the earlier phase. The second phase consisted of four boreholes, three mechanically excavated trial pits and 10 dynamic probe locations.

The investigations identified made ground, over alluvium, over Pennine Middle Coal Measures bedrock. Boreholes identified two coal seams, assumed to be the Kent's Thin and Kent's Thick Coal seams. The Kent's Thin was encountered at depths of around 17m bgl (27mAOD) and the Kent's Thick was recorded at 11.5mbgl (33.9mAOD) on the south bank and 38.95mbgl (5.81mAOD) on the north bank.

A risk assessment of coal workings concluded that there is a low risk that possible mineworkings will affect the proposed development on the north bank but there is a higher risk on the south bank. Mitigation measures consist of piles on the south bank toeing into rock below the coal, probing pile locations prior to piling and obtaining a Coal Authority permit for piling through the coal seam.

The new bridge abutments and associated wingwalls will be supported by piled foundations extending down into the bedrock. This foundation approach eliminates the need for deep excavation adjacent to the river walls and will reduce settlement of the extended bridge section.

Ground improvement using soil mixing is required beneath the northern approach embankment to reduce settlement within the underlying soft alluvial clay.

The design sulphate classification is DS-3 AC-3.

Two geoenvironmental samples identified detectable quantities of asbestos. No other exceedance of contaminants compared to generic assessment criteria was recorded. Mitigation is limited to a validated clean cover layer on soft landscaping on the south bank. Excess material is likely to be disposed of as non-hazardous waste.

1 Introduction

1.1 General

Ove Arup and Partners Ltd (Arup) has been commissioned by South Yorkshire Mayoral Combined Authority (SYMCA) to produce a Ground Conditions and Contaminated Land Assessment for the proposed widening and re-decking of the A61 at Old Mill Lane Bridge, Barnsley.

1.2 Proposed development

The proposed development at the site consists of widening and re-decking of the existing bridge at Old Mill Lane, extending to the west. The widening will allow for an increase from three to four traffic lanes, a bus lane and footpath. It is assumed that the widening of the bridge would require partial demolition of the northern and southern river walls, with construction of new abutments adjacent to existing and new embankment on the western side of the bridge.

1.3 Purpose of the report

The purpose of this report is to provide a brief summary of the information previously gathered for the site and summarise the ground conditions, including an evaluation of stratigraphy, including coal mining risk and groundwater.

The findings of two phases of ground investigation completed in 2018 and 2021 by Allied Exploration and Geotechnics Ltd (AEG) have been analysed and an assessment of the risks posed by contamination to construction workers, future site users and controlled waters has been completed.

1.4 Sources of information

The following sources of information have been used for this report:

- Arup, Geotechnical and geo-environmental desk study (2018).
- Allied Exploration & Geotechnics Ltd, 2018, A61 Old Mill Lane Bridge final factual report (2018).
- Allied Exploration & Geotechnics Ltd, 2021, A61 Wakefield Road Corridor, Phase 1 final factual report.

Reference should be made to the Arup Desk Study (2018) for the sources of information used to compile the desk study report.

1.5 Report structure

This report has the following structure:

- Section 2 provides a summary of the site, site history, environmental and geological setting;

- Section 3 summarises the historical and recent ground investigation information on or near the site;
- Section 4 outlines the ground conditions at the site, using the ground investigation information;
- Section 5 provides a conceptual site model for the proposed development and a contamination risk assessment;
- Section 6 assesses the engineering considerations affecting the site; and
- Section 7 provides conclusions and recommendations.

1.6 Use of report and limitations

This report has been prepared by Arup on behalf of SYMCA in connection with the A61, Old Mill Lane development. This report is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party in relation to it.

All reasonable skill, care and diligence have been exercised within the timescale available and in accordance with the technical requirements of the brief. Notwithstanding the efforts made by the professional team in preparing the report, it is possible that other ground contamination or ground conditions as yet undetected may exist and consequently, reliance on this report must be limited accordingly.

2 The site

2.1 Site description and topography

The site is located to the north east of Barnsley City Centre at National Grid Reference SE350072 and is shown on Figure 1. The River Dearne flows approximately west to east through the site area.

The site primarily comprises the A61 highway and bridge (Old Mill Lane bridge), orientated in an approximate north east to south west alignment crossing the River Dearne. To allow for the widening of the bridge, the site also includes land to the west of the bridge and highway which comprises the river, river walls, river banks and land currently occupied by Asda car parking to the south and a retail park to the north. The site is bounded to the south west by car parking, to the north west by woodland and fields, and by industrial estates to the north east and south east. The site layout is provided in Figure 2.

The southern bank of the river is occupied by woodland and a public footpath. A stone river retaining wall is located on the southern bank and is approximately 3.5m – 4m high. A pipe discharges out of the river wall approximately 5m west of the bridge and approximately 2.5m below the path level behind the retaining wall.

The river wall on the northern bank is concrete and has an approximate retained height of 3m. A concrete pipe discharges out of the river wall approximately 5m to the west of the abutment with the invert level approximately 1.5m below the top of the retaining wall.

The northern bank of the river is occupied by private woodland with retail car parking for the existing Carphone Warehouse located adjacent to the north east. The woodland area is designated as being within the Green Belt and trees within this wooded area are understood to have tree preservation orders.

The A61 slopes down from around 52mAOD on the approach to the bridge, with the bridge road level at around 47mAOD, which slopes to around 45.5mAOD with progression northwards. The ground to the west of the road and bridge slopes from around 48.5m in the Asda car park to around 45mAOD on the southern river bank. The northern river bank (to the rear of the retaining wall) is at around 44 to 45mAOD.

2.2 Historical land use

A brief summary of the site history is provided below, a full description is available in the Arup geotechnical and geo-environmental desk study (2018).

The site has been occupied by Old Mill Lane Bridge since the earliest available mapping. The date and construction of the original bridge are not known. Part of the current bridge is understood to date from the widening of a masonry arch bridge that took place circa 1936. Re-decking of the bridge was completed in 1994.

Historical land uses have included a paper mill which was situated on the southern bank of the river immediately adjacent to the existing western abutment and extended to the river edge. Immediately adjacent to this was a further Paper Mill (Dearne Paper Works) located on the site of the existing Asda Supermarket and carpark (Figure 5).

On late 1800's mapping, a feature (possible water channel) is noted to extend through the site to the immediate west of the bridge (north of the river) joining the weir to the north, this feature was absent from early 1900's mapping.

To the immediate east of the bridge a general works and tannery were located, and gas works to the immediate north of the river (off site).

2.3 Geology

The 1:10,000 geological map sheets SE30NW and SE30NE indicate alluvial deposits to underlie the northern two thirds of the site and the area to the immediate west of the bridge currently occupied by woodland. The River Dearne marks the southern extent of the mapped extents of the superficial deposits and therefore alluvial deposits are not anticipated to the south of the river.

The solid geology beneath the majority of the site is mapped as the Kent's Rock sandstone of the Pennine Middle Coal Measures Formation (PMCM), shown to be dipping at 3 to 4 degrees to the east. A fault, with downthrow to the north east and trending in an approximate northwest to southeast alignment crosses through the southern section of the site marking the boundary between the Kent's Rock and undifferentiated Coal Measures which are mapped across the most southerly part of the site.

The Kent's Thin and Kent's Thick coal seams are shown to outcrop to the south west of the site, dipping beneath the site.

2.4 Hydrogeology

Both the alluvium and Pennine Middle Coal Measures Formation are classed as Secondary A Aquifers.

No surface water, groundwater or potable water abstraction licences are present within 500m of the site. No abstraction licences are recorded within 500m of the scheme and the site is not within 1km of a Source Protection Zone.

2.5 Hydrology

The A61 bridge crosses the River Dearne (a Main River) which is at approximately 42mAOD and flows roughly west to east. The Fleets, a fishing lake of approximately 4ha is situated approximately 210m to the west of the site, upstream.

2.6 Flood risk

Part of the site is classified as a Zone 3 floodplain (high risk) and part of it is also classified as having a high Risk of Flooding from Rivers and the Sea (RoFRaS). A high RoFRaS rating corresponds with a 1 in 30 or greater chance of flooding in any given year.

2.7 Archaeological Interest

Due to the historical land uses, there is a potential for archaeological constraints at the site, in particular, relating to historical mill buildings located on the southern banks of the river to immediately west of Old Mill Lane. Reference should be made to the archaeological desk study by Archaeological Services WYAS (ASWYAS) (Report No's 3158 and 3642).

2.8 Unexploded Ordnance (UXO)

Barnsley is recorded as an area with a low bomb risk according to the Zetica online mapping. The South Yorkshire Regional Unexploded Bomb Risk Map, however, appears to show Barnsley as an area with a high bomb risk. A potential UXO was identified within the River Dearne in May 2018.

3 Ground investigation

3.1 Historical ground investigation

No historical ground investigation data is available within the site boundary. A borehole (SE30NW21) was drilled to the immediate south west of the site in the site of the former paper mill (now Asda car park). The borehole records the main stratigraphic boundaries and presence of coal seams but provides no geotechnical or geo-environmental data.

3.2 AEG 2018 ground investigation

SYMCA commissioned a ground investigation to be completed at the site to inform the re-decking and widening proposals. Arup designed and specified the ground investigation and provided part time supervision on site. The proposed scope of works comprised the following:

- 2 no. dynamic sampling with rotary core follow-on boreholes to 30mbgl;
- 4 no. windowless sample holes to 5mbgl;
- 6 no. hand held dynamic probe holes behind the northern river wall to determine foundation locations;
- 2 no. dynamic probe holes to refusal;
- In-situ testing;
- Geotechnical, chemical and rock laboratory; and
- Post fieldwork gas and groundwater monitoring.

The hand-held dynamic probe holes and one windowless sample hole could not be progressed due to proximity to the river.

AEG carried out the investigation between the dates of 20th and 29th June, 2018, the following scope of works was completed and the as-built locations of the exploratory holes are shown in Figure 3:

- 4 no. dynamic sampling with rotary core follow-on boreholes (three stopped on obstructions within the made ground at a maximum depth of 3.5mbgl);
- 3 no. windowless sample holes (one hit obstructions on the southern bank);
- 2 no. dynamic probe holes;
- In-situ testing;
- Geotechnical, chemical and rock laboratory testing; and
- Post fieldwork gas and groundwater monitoring.

Borehole BH01 located on the south side of the river hit obstructions in three different locations and could not be progressed.

3.3 AEG 2021 ground investigation

An additional phase of ground investigation was undertaken by AEG between the 6th and 20th September. The following scope of works was completed and the as-built locations of the exploratory holes are shown in Figure 3:

- 4 no. dynamic sampling with rotary core follow-on boreholes;
- 3 no. machine excavated trial pits;
- 10 no. dynamic probe holes;
- In-situ testing;
- Geotechnical, chemical and rock laboratory testing.

3.3.1 Geotechnical laboratory testing

Geotechnical laboratory testing was completed on selected soil samples. Testing included the following:

- Moisture content;
- Atterberg limits;
- Particle size distribution (sieve and sedimentation);
- California bearing ratio;
- Oedometer determination of one-dimensional consolidation properties;
- Determination of dry density/moisture content relationship; and
- BRE SD1 tests (concrete in aggressive ground).

Suitable sub-samples of the rock core were tested for the following:

- Point Load Tests (PLTs); and
- Uniaxial compressive strength tests (UCS).

3.3.2 Chemical testing

Selected soil samples were scheduled for chemical testing. The suites of soil testing carried out are listed in the Table 1.

Table 1 Completed chemical testing suites

Suite	Determinand
General	Antimony, arsenic, beryllium cadmium chromium, hexavalent chromium, copper, lead, mercury, nickel, selenium, pentavalent vanadium, zinc, cyanide total, pH, boron (water soluble), total phenols, total organic carbon
Presence and identification of asbestos	Asbestos

Suite	Determinand
Polycyclic aromatic hydrocarbons (PAH), BTEX	USEPA 16 polyaromatic hydrocarbons, BTEX
PCB	Polychlorinated biphenyls

3.3.3 Gas and groundwater monitoring

Monitoring installations were installed in two of the window samples, one on either side of the river. Two monitoring visits were carried out after the investigation on 17th July and 2nd August 2018.

Table 2 Gas and groundwater monitoring response zones

Borehole ID	Response zone (mbgl)	Stratum
WS01	0.50 to 2.20	Made ground
WS03	1.00 to 4.00	Made ground/Alluvium

4 Ground conditions

4.1 Stratigraphy

Figure 4 shows the stratigraphy at the site. It shows made ground over alluvium underlain by the Pennine Middle Coal Measures Formation strata. Coal was identified at 11.50mbgl to 17.50mbgl and 38.90mbgl assumed to be the Kent's Thin and Kent's Thick respectively.

4.2 Made ground

Different types of made ground have been encountered and/or are anticipated across the different site areas. The two ground investigations undertaken by AEG did not cover the existing bridge nor its abutments. A prediction of the likely composition of these areas has been assumed from previous experience.

Standard Penetration Tests (SPTs) within the made ground showed a variable strength with little noticeable increase in depth, other than high values recorded at refusal.

4.2.1 Existing bridge and abutments

In the immediate vicinity of the bridge, made ground associated with the highway construction and service trenches is anticipated. The composition is not known but is likely to comprise a well-compacted coarse-grained fill and assumed to extend to bedrock (i.e., replacing the alluvial soils). Historical drawings of the bridge show the abutment foundations at approximately 8m below road level on the west abutment, and around 7.5m below road level on the east abutment.

4.2.2 Southern river bank

Exploratory hole 20-BH11 was undertaken directly behind the river wall and encountered concrete at a depth of 0.35mbgl. The made ground encountered was typically a sandy gravel including ash, limestone, concrete, brick and metal fragments.

Further from the river wall BH01, 20-TP11 and 20-TP12 all terminated due to obstructions and typically identified gravel with cobbles of brick and concrete. 20-BH14 was undertaken at the same location as 20-TP12 and went through the obstruction identifying made ground to 5.45mbgl. The made ground in this area appears to comprise some mixed fill beneath buried concrete and brick structures relating to historical buildings.

4.2.3 Northern river bank

The exploratory holes in this area identified soft sandy gravelly clay beneath a layer of topsoil, with mudstone, sandstone, clinker and brick noted. Made ground was typically encountered as being between 1.10m and 2.95m thick. It was similar to the underlying natural material and so differences in thickness may be due to

different interpretations between the two investigations. Made ground was typically described as thinner in the 2021 investigation, other than directly behind the river wall.

20-BH12 identified a gravel with cobbles at the base of the made ground that is likely associated with the construction of the river wall.

An Atterberg limit test was performed on one sample in the made ground which classified it as an intermediate plasticity silt.

A particle size distribution (PSD) test was performed on one sample in the made ground and showed a 50% sand content, although descriptions of the made ground highlighted its variability.

4.3 Alluvium

Alluvium was identified to the north of the river beneath the made ground and was typically described as a soft and firm sandy slightly gravelly clay but also as including a black organic silt. WS03 and WS04 identified a very loose clayey gravelly sand beneath the clay layer which was not identified elsewhere.

To the south of the river, an organic black sandy silt of between 0.80 and 1.75m thickness was found to underlie the made ground (20-BH11 and 20-BH14 respectively).

SPT tests within the alluvium typically agreed with the consistency description of soft to firm, with 'N' values ranging from 2 to 11. An 'N' value of 3 was recorded in the sand deposits. In addition to this, DP02 within the alluvium recorded 0 blows per 100mm penetration for all but one section between 1.90 and 3.00mbgl indicating a very soft material. 20-DP11 and 20-DP14 recorded blows of typically 1-2/100mm within the alluvium.

Nine Atterberg limit tests were performed on alluvium samples with variable results. These indicated a classification ranging from an intermediate to high plasticity clay. One sample (20-BH12, 3.50m bgl) was classified as a high plasticity silt.

PSD tests were carried out on nine alluvium samples, these showed the alluvium to be predominantly fine-grained (~35 to 85% fines by mass). PSD testing was not undertaken on encountered sand bands. One sample (20-BH12, 4.30mbgl) was classified as a slightly sandy gravel, though this is thought to be a discrete body.

Two samples of alluvium were subject to one-dimensional consolidation testing (Oedometer testing). Samples were collected at depths of 2.72 and 3.70m bgl. Cell pressures ranged from 13 to 200kN/m². A summary of the results from the 50 – 100kN/m² loading stage, which is understood to be the most representative of the design condition (c. 3m height embankment and sample depth), is provided below Table 3. The coefficient of volume compressibility, m_v , indicates a high compressibility that is typical of a normally consolidated soil.

Table 3 Summary of consolidation testing results

Exploratory Hole ID	Sample Depth (mbgl)	Pressure range (kN/m ²)	m _v (m ² /MN)	c _v (m ² /yr)
20-BH13	2.72	50 – 100	0.403	2.20
20-BH13	3.70	50 – 100	0.606	1.65

4.4 Pennine Middle Coal Measures Formation

Weathered bedrock was encountered and typically described as a stiff clay or medium dense to dense gravel and cobbles. Dynamic probing on the south bank showed an increase in resistance to penetration at rock head but managed to penetrate two to three metres into bedrock even though it was described as moderately weak and was able to be cored with full core recovery. This is likely to be due to significant fracturing of the rock.

On the north river bank, all dynamic probes reached refusal within dense gravel and cobbles above rockhead level.

SPTs within the weathered material ranged from 12 to refusal.

The bedrock comprises interbedded sandstone siltstone and mudstone along with coal bands and underlying seat earths.

The bedrock was typically described as very weak to moderately weak interbedded mudstone and siltstone units (indicating an intact unconfined compressive strength [q_{ci}] of between 1 to 25MPa in accordance with BS 5930). Sandstone was encountered underlying the coal seams and was typically described as very weak to medium strong (indicating an intact unconfined compressive strength of 1 to 50MPa). Mudstones and siltstones were described as laminated.

Coal bands and associated seat earths were encountered within the PMCM. Seat earths were found to be 0.2 and 0.5m thick. Coal was described as very weak to strong with very variable degrees of weathering. A summary of the encountered coal bands is provided below. The BGS geological memoir describes the strata above the Kent's Thin as potentially containing thin ironstone bands; these were not noted during the ground investigation to date.

Loss of flush was noted at various depths during the 2021 ground investigation. This included within a coal seam in 20-BH11. No voids were noted on the logs.

Table 4 Summary of coal seams encountered

Exploratory Hole ID	Depth Top (m bgl)	Depth Base (m bgl)	Thickness (m)	Elevation Top (mAOD)	Elevation Base (mAOD)	Interpreted Seam
BH02	17.50	18.10	0.6	27.26	26.66	Kent's Thin
BH02	38.95	39.90	0.95	5.81	4.86	Kent's Thick
20-BH11	11.50	12.40	0.9	33.90	33.00	Kent's Thick
20-BH12	16.80	17.34	0.54	27.20	26.66	Kent's Thin

4.5 Groundwater

Two groundwater strikes were recorded, one in BH02, at a depth of 4.1m bgl (40.66mAOD) and the other in 20-TP13 at 3.1m bgl (41.80mAOD) rising to 2.8m bgl after 20 minutes.

Results from the post fieldwork monitoring of the gas and groundwater installations are shown in Table 5.

Table 5 Post-fieldwork groundwater readings

Borehole ID	Water depth on 17/07/2018 (mbgl)	Water depth on 02/08/2018 (mbgl)
WS01	Dry	Dry
WS03	2.13	2.15

5 Geo-environmental assessment

5.1 Introduction

A conceptual site model (CSM) describes the scenario in which the risks to human health and the environment posed by contaminated land are assessed. The potential risks are considered in the context of a source-pathway-receptor model of the site, identifying:

- The principal pollutant hazards within the site (source);
- The principal receptors at risk from the hazards; and
- The existence, or absence, of plausible pathways which may exist between the identified hazards and receptor.

For risks to be present at the site, all three elements must be present.

The previous geotechnical and geo-environmental desk study (Arup, 2018) provides an initial CSM based on the historical and existing land uses on or near the site and the proposed end use. This is presented below and has been updated following the ground investigations.

5.2 Initial conceptual site model

The preliminary proposed CSM as detailed in the Arup Desk Study (2018) is shown in Table 6.

Table 6 Preliminary conceptual site model

Sources	Pathways	Receptors
Potentially contaminated made ground soils	Dermal contact with soils and dust	Construction workers
	Inhalation of dust and gases/vapours	Site neighbours, pedestrians and construction workers
	Pore waters	New planting
Ground gases	Accumulation of gases to toxic, asphyxiating or explosive concentrations in confined spaces	Future maintenance workers
Leachable contamination in the made ground and free phase hydrocarbons in the made ground	Downward percolation and migration	Groundwater River Dearne
Potentially impacted groundwater	Lateral migration of contamination within granular made ground deposits and coal measures strata	River Dearne

5.3 Data screening

5.3.1 Screening methodology

To simplify the assessment of ground contamination risks, the statutory guidance suggests that generic soil quality guideline values may be used for initial screening of soil contamination results. Generic assessment criteria (GAC) and site-specific assessment criteria can be calculated using the software version of the Contaminated Land Exposure Assessment (CLEA) model. The CLEA does not consider short-term risks to humans, such as those during construction but the longer term, post-construction risks. This also does not consider the risk posed by contaminated groundwater or of contaminated soils to groundwater.

5.3.2 Soil assessment criteria

The soil results have been compared to the Arup human health generic assessment criteria (GAC) for a commercial end use which is considered to be the most appropriate scenario for the proposed development. The GAC have been generated for a soil with organic matter content of 6% (based on average organic matter contents identified in made ground samples taken on site) using the Contaminated Land Exposure Assessment (CLEA) model (v1.07).

5.3.3 Soil screening results

Of the fifteen samples analysed, two exceeded the commercial GAC value for asbestos. Asbestos was identified in 20-TP12 at a depth of 0.30mbgl, this had a concentration of 0.001% and in WS01 at 2.2mbgl. No other soil exceedances were identified. The soil screening results are included in Appendix A.

5.3.4 Soil risk assessment

The former paper mill site (now Asda) likely underwent remediation prior to development but it is not clear what this consisted of or the extents of remediation. There is still potential for contamination up to the river walls, within the former paper mill extents.

The proposed development will involve areas of soft landscaping, associated with new embankments and topsoil/subsoil which will have to be imported. The presence of asbestos should be considered in advance of the works and appropriate mitigation measures put in place during construction.

A piled foundation solution is the preferred foundation solution due to site constraints. There is a risk that piling activities could create a preferential pathway for contaminant migration between the made ground downwards into the groundwater and river water.

The results of testing completed to date at the site, indicate that the majority of the made ground is unlikely to be severely contaminated, and therefore the risk of significant contamination of controlled waters is considered low.

The contamination of controlled waters with cement, concrete or grout is a possibility working immediately adjacent to the river. General good practice on site will prevent the loss of quantities of cement or grout into the watercourse.

Based on the data obtained from ground investigation, it is considered likely that a large proportion of the soil on site would be chemically suitable for reuse within this scheme with minimal mitigation. Mitigation is likely to comprise a clean cover system (hard landscaping and validated clean soils in soft landscaping areas) to minimise exposure to soil contaminants such as asbestos.

5.4 Soil disposal

25 tests were carried out on samples of the made ground from across the site. Using the HazWasteOnline tool (www.hazwasteonline.com) these were classified for potential waste disposal. None of the samples were classed as hazardous waste. Although there is the potential for elevated concentrations to be present across the site, in locations not sampled during the recent ground investigation, it gives some confidence that materials across the site will generally be non-hazardous. Results are included in Appendix A.

The HazWasteOnline tool does not consider asbestos containing materials (ACM). However, ACM has been detected in two soil samples out of the twelve samples tested for it. If the waste contains fibres that are free and dispersed then the waste will be hazardous if the waste as a whole contains 0.1% or more asbestos. Where the waste contains identifiable pieces of asbestos containing material (i.e. any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye), then these pieces must be assessed separately. The waste is hazardous if the concentration of asbestos in the piece of asbestos containing material is 0.1% or more.

The % by mass of the sample tested was 0.001%, less than the 0.1% threshold and would therefore be classed as non-hazardous. Quantitative assessment of the asbestos was not carried out on the other sample.

Further analysis to determine whether the non-hazardous waste would be accepted at an inert waste landfill will be required in the future should waste soils be likely to be generated, e.g., if the material is not planned to be re-used as part of the scheme.

5.5 Ground gas

Two rounds of gas monitoring were completed in the two standpipes installed within the site as part of the 2018 ground investigation on 17th July and 2nd August 2018.

The hazardous gas flow rate for CO₂ has been calculated for each installation using the following equation. Where no flow rate was recorded, a flow of 0.1l/hr is assumed.

$$Q_{hg} = q \times \frac{C_{hg}}{100}$$

Where q is flow rate and C_{hg} is the percentage concentration of the hazardous gas.

The maximum recorded results per installation are summarised in Table 7 below.

Table 7 Ground gas monitoring readings

BH ID	CO ₂ (%)	CH ₄ (%)	CO (ppm)	Flow rate (l/hr)	Q _{hg} CO ₂ (l/hr)
WS01	1.8	0.1	<1.0	0.0	0.0018
WS03	2.3	0.2	<1.0	0.1	0.0023

5.6 Ground gas risk assessment

A hazardous gas flow rate, Q_{hg} of 0.0023l/hr is calculated for WS03 in accordance with BS8485:2015. Only two monitoring visits were carried out and so there are limited readings, however, there is no reason to suggest the concentrations or flow rates would be higher. The Gas Screening Value, GSV, is therefore taken as 0.0023l/hr and corresponds with Characteristic Gas Situation CS1, a very low hazard potential.

5.7 Concrete aggressivity

Four sulphate tests were undertaken on samples from the Pennine Middle Coal Measures Formation and one from the made ground. A summary of the results is shown in Table 8 below.

Table 8 Summary of sulphate testing

Stratum	Sulphate aqueous extract (mg/l)		Total potential sulphate (%)		pH		Design sulphate class
	Range	Char*	Range	Char*	Range	Char*	
Made ground	21 to 289	289	0.06 to 0.96	0.96	7.88 to 10.93	7.88	DS-3, AC-3
Alluvium	113	113	0.047	0.047	7.8	7.8	DS-1, AC-1
Middle Coal Measures	17 to 688	688	0.05 to 0.87	0.87	7.1 to 9.3	7.1	DS-2, AC-2

*Char - characteristic value

The results indicate a design sulphate classification of DS-3 AC-3 for the made ground and DS-2, AC-2 for the PMCM.

Only piles will be in contact with the PMCM which will not allow for oxidation of sulphides and so total potential sulphate has not been included in the design sulphate class.

5.8 Revised conceptual site model

No evidence of significant ground contamination was recorded in the ground investigation however, two of the samples tested exceeded screening criteria for asbestos. The revised conceptual site model is shown below.

Table 9 Revised conceptual site model

Sources	Pathways	Receptors
Potentially contaminated made ground soils	Dermal contact with soils and dust	Construction workers
	Inhalation of dust and gases/vapours	Site neighbours, pedestrians and construction workers
Leachable contamination in the made ground and free phase hydrocarbons in the made ground	Downward percolation and migration	Groundwater River Dearne
Potentially impacted groundwater	Lateral migration of contamination within granular made ground deposits and coal measures strata	River Dearne

6 Remediation strategy

Based on Section 5, the remediation strategy below is proposed.

Table 10: Risk and remediation strategy

Hazard	Construction/ operation	Receptor	Risk significance	Mitigation	Residual risk after mitigation
Exposure to contaminated soil and groundwater	Construction	Construction workers, site visitors, neighbours	Moderate adverse	Dust suppression techniques to be employed. Appropriate PPE to be worn, and basic hygiene to be observed.	Negligible
Exposure to contaminated soils	Operation	Site users	Minor adverse	A minimum of 200mm clean capping material is required in areas of soft landscaping.	Negligible
Pollutant linkage to river during piling	Construction	River Dearne	Moderate adverse	Appropriate RAMS during piling operation.	Negligible
Coal combustion	Construction	Coal seam	Major adverse	Apply appropriate techniques during drilling or piling. Apply for Coal Authority permit.	Negligible
Degradation of buried structures	Operation	Concrete structures	Minor adverse	Design buried concrete for sulphate DS-3, AC-3.	Negligible

6.1 Imported clean topsoil

The development proposal includes areas of soft landscaping. A risk to site users from exposure to site soils has been identified. To mitigate this risk, a validated clean topsoil cover layer, minimum 200mm thick, should be placed in areas of soft landscaping. This should be confirmed with either at least two hand dug pits to confirm thickness, or a topographic survey of the base and final formation layer height in accordance with the Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG), 2021, Technical Guidance for Developers, Landowners and

Consultants, Verification Requirements for Cover Systems (Appendix C). This shall be recorded with photographs of the pits or the surveys to be included in the verification report.

Topsoil should be sourced from a greenfield site and materials brought on to site will require testing to ensure that they meet the standards set in Table 11 as a minimum. Imported materials should generally not exceed the concentrations of metals/metalloids and PAH within the existing site soils determined from the ground investigation. The Contractor will demonstrate the material is not waste. Imported topsoil should be sampled at a rate of 1 per 250m³ or a minimum of three samples; whichever is greater in accordance with the YALPAG guidance, and the Sheffield City Council Environmental Protection Service, 2013, acceptable methods of validating capping thickness, included in Appendix C.

Table 11: Soil quality criteria for clean imported materials to be used on site

Determinand	Quality criteria for clean soils imported to site (mg/kg)	Source
Arsenic	40	Residential Category 4 Screening Levels (C4SL)
Cadmium	3	Ministry of Agriculture, Fisheries and Food (MAFF)
Chromium	400	MAFF
Copper	200	MAFF
Lead	300	MAFF
Mercury	1	MAFF
Nickel	110	MAFF
Selenium	3	MAFF
Zinc	300	MAFF
Asbestos	No presence (<0.001%)	Professional judgement value
TPH Aromatic C8-C40	500*	Professional judgement value
Benzo(a)pyrene	5	Residential C4SL
* Whilst there may not be a risk to health at concentrations greater than this, there may be aesthetic issues with the soil.		

6.2 Imported fill materials

Fill will be required to be imported to form the embankments. All imported material shall, as a minimum, be within Generic Assessment Criteria used in this report. Chemical testing results for imported material shall also be compared against the ground investigation results (as indicative background levels) to ensure that the imported material is not more contaminated than existing soils.

In addition to asbestos testing, all imported material should be provided by a WRAP-approved supplier and the Contract Administrator should provide assurance

that all ACMs were removed prior to demolition and processing. The imported material shall not contain any asbestos fibres.

Table 12 Required chemical testing of imported material

Determinand	Class 1A/1B (embankment fill)	Class 6F5	Class 6N/6P	Type 1
Asbestos	500m ³ , minimum 2 per source	500m ³ , minimum 2 per source	500m ³ , minimum 2 per source	500m ³ , minimum 2 per source
PAH, TPH, metals	500m ³	-	-	-

6.3 Construction best practice

Control of fugitive dust will be implemented and as a minimum the works will be undertaken in accordance with BRE good practice guidance.

Appropriate measures should be taken to protect construction workers. This may include training in and enforcement of hygiene procedures, use of personal protective equipment and the implementation of dust control measures. Mitigation measures that will be used to counter the identified potential impacts of construction may include:

- Procedures and protocols to prevent construction workers, visitors and neighbours from being exposed to contaminated materials;
- Monitoring of excavation works to identify unforeseen areas of contamination;
- Systems to record and monitor the movement and deposition of waste materials leaving or being transported to other parts of the site;
- Preventing dust generation or odour during excavation and handling of potentially contaminated materials; and
- Preventing contaminated run-off and timely management of leaks and spills.

7 Engineering Considerations

7.1 Proposed development

As described in Section 1.2, it is proposed to widen and re-deck the existing bridge to the west.

The sequence of work is described in the Approval in Principle (AiP) (report reference AIP/253511/001) for the scheme and includes the following stages:

- Construction of piling platform and temporary enabling works.
- Construction of rotary bored piles.
- Ground improvement by soil mixing at location of proposed northern approach embankment.
- Place fill materials to form new embankments.
- Construct the new decks, including replacement of existing deck.

The following geotechnical risks for construction have been identified for the proposed development. A summary of identified constraints and the main historical land uses are shown on Figure 5.

7.2 Potential coal mining

7.2.1 Desk study information

As described in the Arup Desk Study (2018), based on geological mapping, two coal seams were anticipated beneath the site at relatively shallow depth: the Kent's Thin and the Kent's Thick. The Kent's Thin was anticipated to be present at the base of the Kent's Rock (anticipated to be around 10 to 15mbgl) with the Kent's Thick around 20 to 25m below the Kent's Thin.

The Coal Authority online viewer indicates the majority of the site to be located outside of a 'designated high risk' area. The southern extremity of the site is located within a high-risk area (with only changes to road layout proposed in this location). The high-risk area is assumed to relate to the presence of the Kent's Thin coal being mapped at outcrop in this area. The remainder of the site is classed as being at risk from workings at moderate depth, assumed to relate to possible workings in the Kent's Thick seam. It should be borne in mind that the boundary mapped will be subject to a degree of uncertainty and may in reality extend further into the site.

A non-residential Mining Report has been obtained from the Coal Authority. The report states the site is in an area affected by underground workings in three seams of coal from 90m to 400m depth (the shallowest recorded workings are likely to be in the Barnsley Coal). It is stated in the report that movement associated with these seams should now have stopped.

A South Yorkshire Mining Advisory (SYMAS) report (Appendix B) for Old Mill Lane Bridge, states that no known shallow coal mining has occurred beneath the site and classified the overall risk to the bridge from unrecorded shallow mine workings in the Kent's Thin seam to be low. It notes that deep coal mining has occurred in multiple seams beneath the site, with the most recent being in the 1960s.

7.2.2 SYMAS planning consultation

South Yorkshire Mining Advisory Service (SYMAS) were consulted on the proposed development on the 12th April 2018 and had the following comments:

- Only a small section of the scheme falls within a Coal Mining Referral area in the southern vicinity, clear of the bridge.
- Considering the nature of the proposed works in this area, along with the specifics of mining/geological position (Kent's Thin coal seam anticipated to be at relatively shallow depth but unlikely to be near surface) then the associated risks would be considered low.
- No intrusive investigations would be deemed necessary from a shallow mining perspective given the very limited knowledge of underground workings associated with the Kent's Thin seam in these parts and given the scale of development.
- SYMAS would have no objections for a future application to progress without the inclusion of a Coal Mining Risk Assessment.

7.2.3 Coal mining risk assessment

During the 2018 ground investigation, two coal seams (assumed to be the Kent's Thin and Kent's Thick) were encountered in BH02. One seam was also encountered in both 20-BH11 and 20-BH12 anticipated to be the Kent's Thick and the Kent's Thin respectively, refer to Table 3. Neither of the coal seams encountered showed direct evidence of workings (destructured rock/voids).

Figure 4 shows an interpreted cross section through the site that indicates the Kent's Thick seam is likely to lie at a depth of around 12m below the proposed ground level on the south bank. On the north bank, the Kent's Thin was encountered at around 17mbgl.

On the north bank, considering the low likelihood that the Kent's Thin seam has been worked along with its limited thickness and its depth, it presents a very low risk to the proposed development and no further mitigation measures are recommended.

On the south bank, due to the thicker coal seam and underlying seat earth, abutment piles on the south bank have been extended to rock sockets below the coal seam and seat earth. Prior to piling, probing is recommended to identify any possible workings on the south abutment pile locations.

The workings are approximately 12m below the road level and no further remediation measures are proposed beyond the bridge structure.

7.3 New abutment foundations

7.3.1 Shallow foundations

Shallow foundations are no longer proposed for the following reasons:

- On the north side of the river, there may be alluvial deposits or completely weathered mudstone at this founding level that may not be suitable for the imposed loads.
- Significant excavation may be required, potentially to elevations lower than 38.5mAOD to encounter a suitable bearing stratum, and the cofferdam would require to be designed to accommodate such deep excavations.
- There is a risk of differential settlement between the new and existing structure.
- Spread foundations may need to be founded deeper than the existing structures foundations to prevent unacceptable differential settlement between the old and new structures. This may necessitate additional temporary works or monitoring to ensure the stability of the existing structure.
- Removal and disposal of excavated materials from the site.
- Significant dewatering of the excavation is likely to be required adjacent to the river.

7.3.2 Piled foundations

Piled foundations are recommended at this site due to the issues associated with shallow foundations discussed in Section 7.3.1. It is anticipated that the piles will socket into the bedrock underlying the site.

Construction of driven or continuous flight auger (CFA) piles may be affected by the presence of bands of strong rock within the underlying strata. Consideration will need to be given to the variation of strength between the different rock types within the PMCM. Rotary auger bored piles would be preferred in this respect, and also because the actual ground conditions can be proved during construction.

Piles are proposed to toe below the coal seam on the south bank. Prior to the construction of piles, an application will be required to be made to the Coal Authority to obtain the relevant working permit. A safe working method will need to be developed to manage the risks associated with combustion of coal and associated ground gasses.

The design of the piles will need to consider the potential for downdrag which may be initiated within the alluvial deposits relating to the construction of the approach embankments.

7.4 Wingwalls

Wingwalls to the proposed widened sections of the bridge are to be short and parallel to the highway. Wingwalls are also anticipated to be supported by piled foundations socketed into rock.

Due to the potential for shallow obstructions on the south bank, piles positions are proposed to be probed for obstructions prior to piling.

7.5 Embankments

7.5.1 Trees

Trees are present north and south of the river and there are tree preservation orders for trees north of the river. Trees will need to be removed from beneath the full footprint of the proposed embankment.

7.5.2 Old structures

Exploratory holes on the southern river bank recorded obstructions between 0.60 and 4.20mbgl. These may be associated with the paper mill previously at the site. Such obstructions were found across the southern bank but not recorded directly behind the river wall. No significant obstructions were noted at exploratory hole locations on the northern bank but these may still be present elsewhere along the bank. These may impact on the proposed piles.

7.5.3 Form of embankment

7.5.3.1 Unretained

New embankments will need to be constructed on the western side of the existing retained highway. Ground conditions at formation level will generally comprise variable thicknesses of Made ground. Soft compressible alluvial clay was proved beneath the Made ground on the north side of the river.

Due to soft material identified on the north bank, ground improvement will be required to limit settlement. Imported material should then be placed as general fill to the required levels to form the new embankments.

7.5.4 Fill materials

It is assumed that the new embankments will be constructed using imported fill materials. However, materials suitable for re-use as general fill may be encountered during the enabling works and should be recycled wherever feasible under a Materials Management Plan.

7.5.5 Ground improvement

On the north side of the river, the surcharge from the new embankment fill will cause settlement of the underlying alluvial clay.

Given the large consolidation settlements anticipated, it is considered that ground improvement will need to be adopted. Consideration has been given to the options of vibro-stone columns and deep soil mixing with deep soil mixing preferred.

8 Conclusions and recommendations

8.1 Conclusions

Ground investigation undertaken in two phases has confirmed ground conditions underlying the site.

Two coal seams are anticipated to be present at c. 12m and 40m below the proposed bridge abutment foundations. The risk assessment presented has concluded that there is a low risk that possible mineworkings will affect the proposed works and no mitigation measures are proposed.

The bridge abutments and associated wingwalls are to be supported by bored pile foundations extending into the bedrock.

Ground improvement measures are required on the north bank to limit settlement beneath the proposed embankment.

Buried concrete structures should be designed assuming a design sulphate classification of DS-3 AC-3.

Asbestos was identified within two samples of twelve tested and may be present, particularly on the south bank. No evidence of significant ground contamination was recorded in the ground investigation, but may be present. Asbestos fibres were detected in one environmental sample. Material is considered likely to be suitable for re-use and is expected to predominantly be classified as non-hazardous waste based on available testing.

Due to the presence of asbestos a validated clean cover system is proposed on the south bank.

8.2 Recommendations

Recommendations for future work are as follows:

- Additional sampling of alluvial soils to allow the soil mixing specialist contractor to design an appropriate mix of soil and binder.
- Probe drilling in advance of piling on the south bank to identify possible mineworkings (bridge piles), and to identify possible obstructions (wing wall piles).
- A robust working method should be adopted on site to manage the risk associated with the potential for ground obstructions within the made ground as detailed in the factual reports and Section 7.5.2.
- Mitigation for contaminated soils should comprise a minimum 200mm of clean cover in areas of soft landscaping to minimise exposure to potential soil contaminants such as asbestos.

Figures

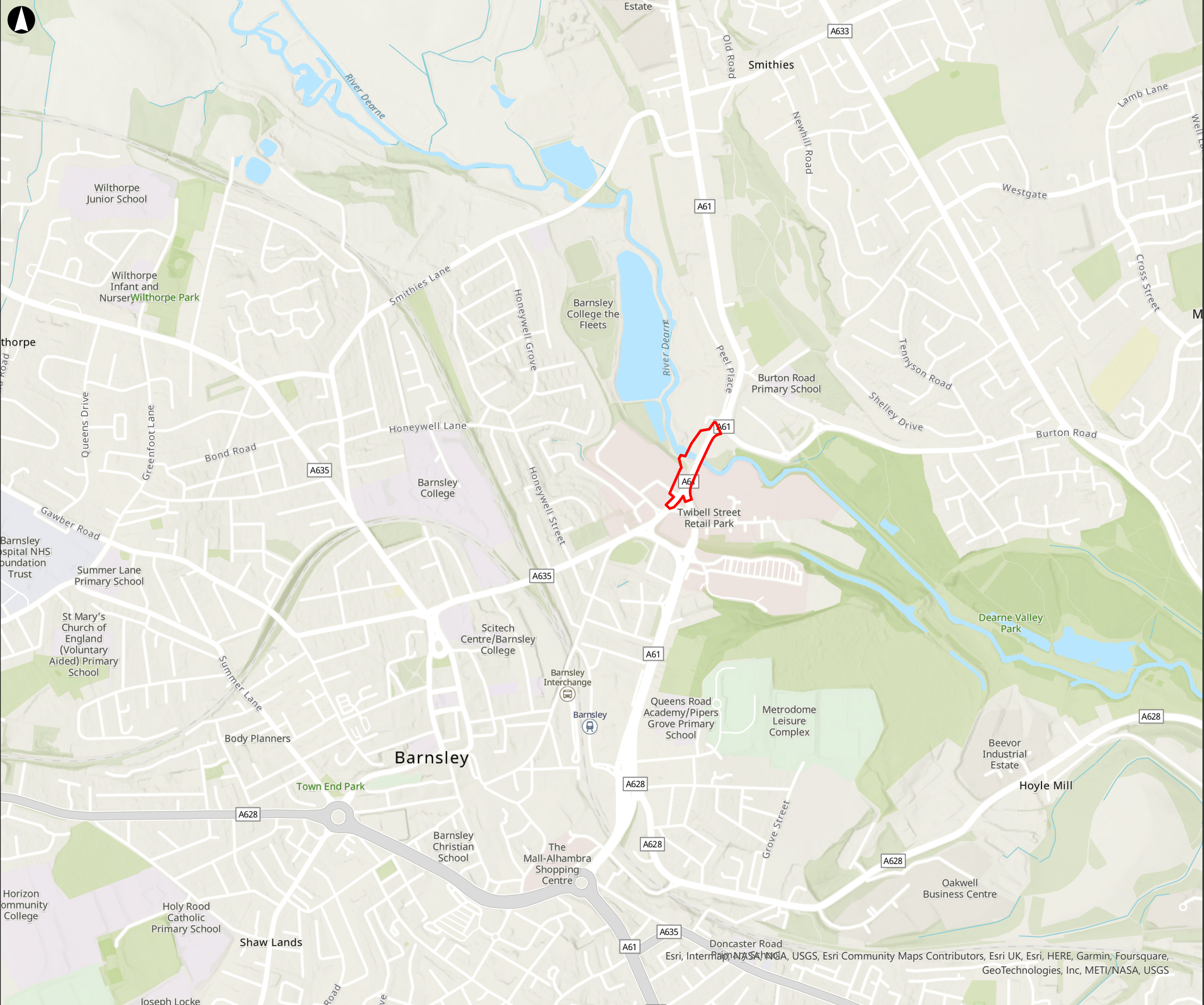
Figure 1 Site Location Plan

Figure 2 Site Boundary

Figure 3 As-built Exploratory Hole Location Plan

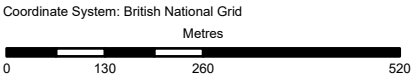
Figure 4 Geological Cross-section

Figure 5 Features and Constraints Plan



Legend

Site Boundary



P01	7/12/22	ZK	PST	JH
P00				
Rev	Date	By	Chkd	Appd

ARUP

6 Piccadilly Place
Manchester M1 3BN
www.arup.com

Client
**South Yorkshire Passenger
Transport Executive (SYLTE)**

Project Title
A61 Old Mill Lane, Barnsley

Drawing Title
Site Location Plan

Scale at A3
1:10,000
Role
Geotechnical Engineer
Suitability
For Issue

Arup Job No 253511-00	Rev P01
---------------------------------	-------------------

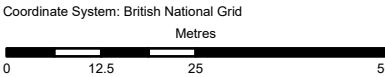
Name
Figure 1

Map data © OpenStreetMap contributors, Esri, Intel, Mapbox, NASA, NOAA, USGS, Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS



Legend

Site Boundary



P01	7/12/22	ZK	PST	JH
P00				
Rev	Date	By	Chkd	Appd

ARUP

6 Piccadilly Place
Manchester M1 3BN
www.arup.com

Client
**South Yorkshire Passenger
Transport Executive (SYLTE)**

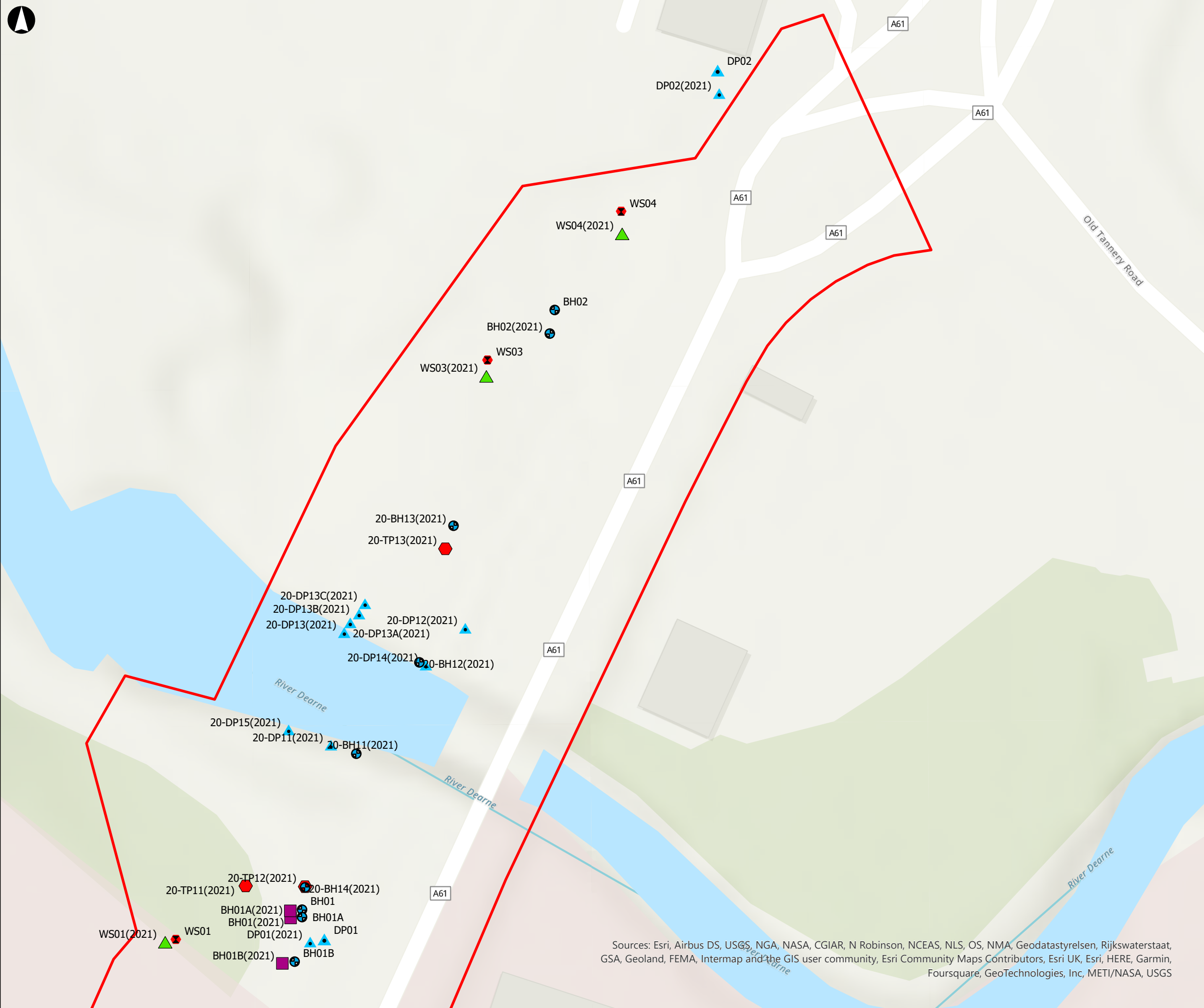
Project Title
A61 Old Mill Lane, Barnsley

Drawing Title
Site Boundary

Scale at A3
1:1,000
Role
Geotechnical Engineer
Suitability
For Issue

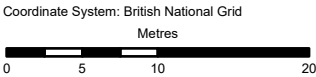
Arup Job No 253511-00	Rev P01
Name Figure 2	

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS



Legend

- Site Boundary
- GI Locations
 - Borehole
 - Dynamic Probe
 - Window Sample
 - Rotary Open-hole Borehole
 - Trial Pit
 - Windowless Sample



P01	7/12/22	ZK	PST	JH
P00				
Rev	Date	By	Chkd	Appd

ARUP

6 Piccadilly Place
Manchester M1 3BN
www.arup.com

Client
**South Yorkshire Passenger
Transport Executive (SYLTE)**

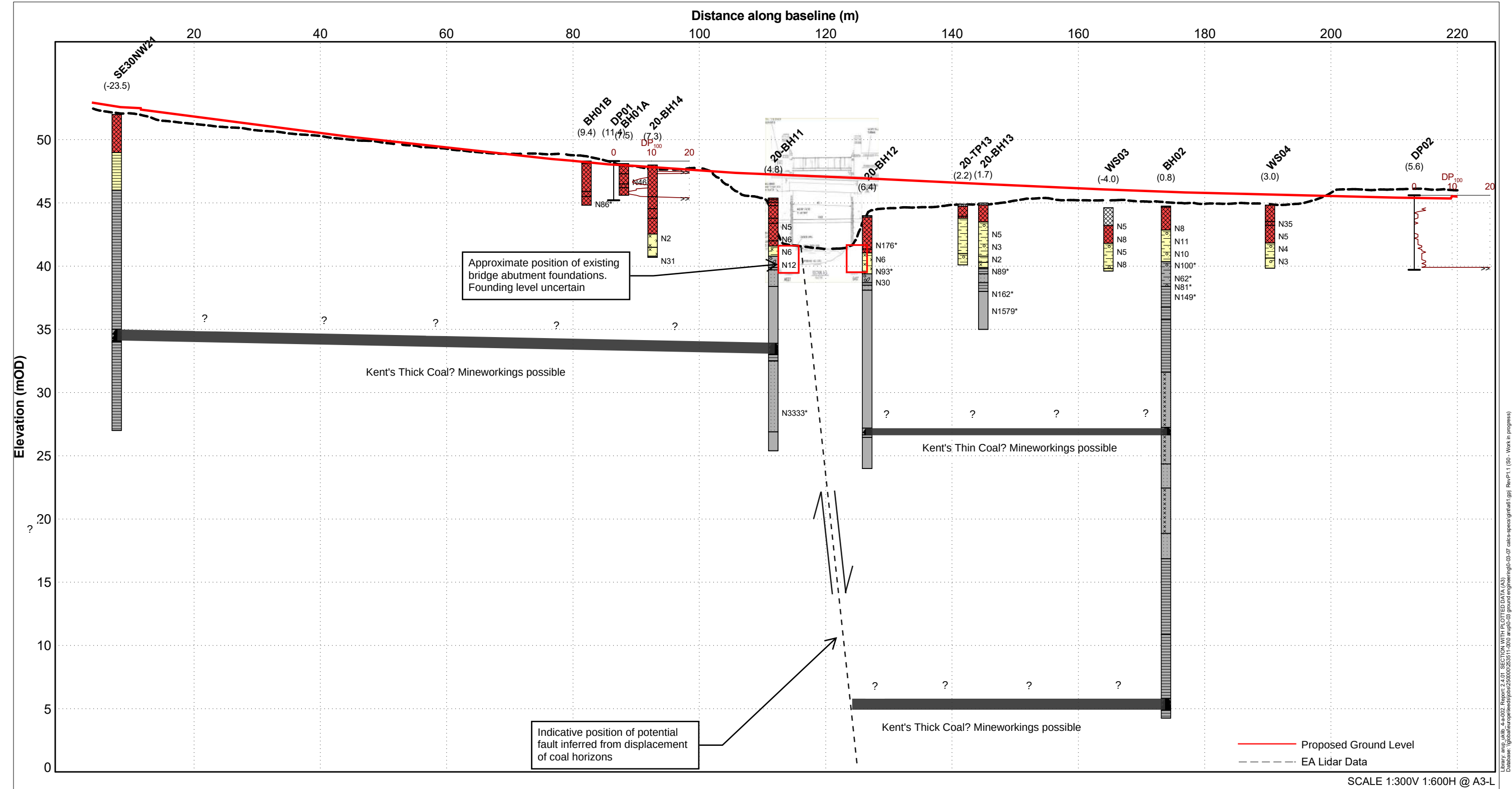
Project Title
A61 Old Mill Lane, Barnsley

Drawing Title
As-built Exploratory Hole Locations

Scale at A3
1:500
Role
Geotechnical Engineer
Suitability
For Issue

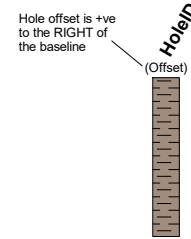
Arup Job No 253511-00	Rev P01
Name Figure 3	

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

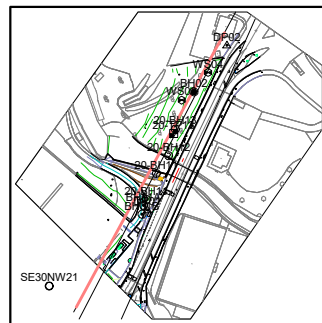


ARUP gINT v10.00.01.07 Made by James Astbury on 6-Dec-22

LEGEND



PLAN



COLOUR LEGEND

- Topsail [TOP]
- Made Ground [MG]
- Alluvium [ALV]
- Lower Coal Measures [LCM]

MATERIALS

- Fill (MADE GROUND)
- Sandy gravelly CLAY
- MUDSTONE
- SILTSTONE
- COAL
- SANDSTONE
- Clayey gravelly SAND
- Sandy CLAY
- Silty Clay
- Sandy GRAVEL
- Clayey SILT
- Cobbly GRAVEL
- SILT
- Sandy SILT
- GRAVEL

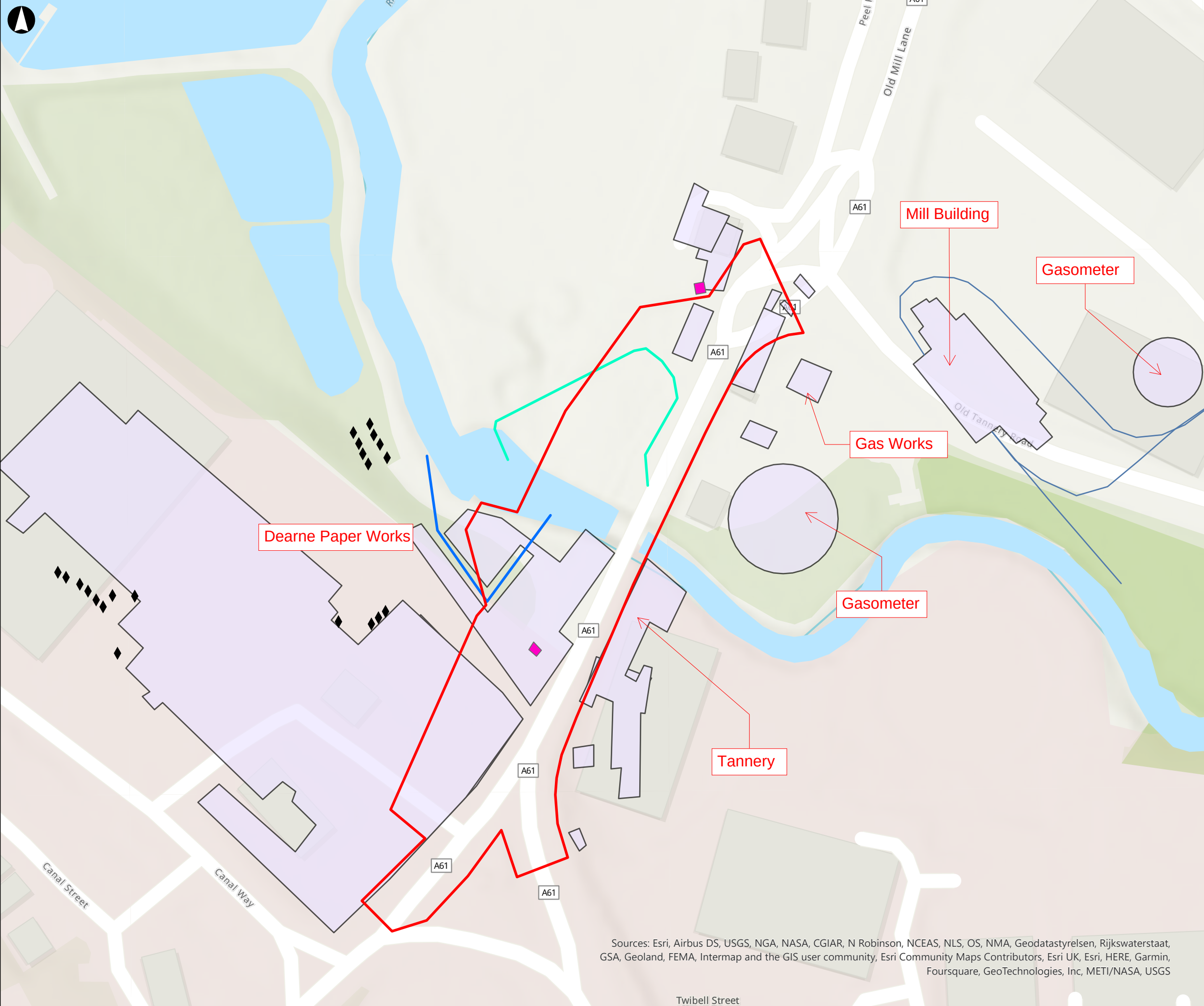
ARUP

Job Title
A61 OLD MILL LANE
BRIDGE WIDENING

Figure Title
Geological cross section
Parallel to bridge alignment

Job No
253511

Figure No
4



- Legend**
- Site Boundary
 - Historical Tanks
 - Historical Water Body
 - Historical Goyt/Mill Race
 - Historical Rail Sidings
 - Historical Industrial Structures
 - Existing Substations

Coordinate System: British National Grid

Metres

0 15 30 60

P01	7/12/22	ZK	PST	JH
P00				
Rev	Date	By	Chkd	Appd

ARUP

6 Piccadilly Place
Manchester M1 3BN
www.arup.com

Client
South Yorkshire Passenger Transport Executive (SYLTE)

Project Title
A61 Old Mill Lane, Barnsley

Drawing Title
Features and Constraints Plan

Scale at A3
1:1,250

Role
Geotechnical Engineer

Suitability
For Issue

Arup Job No 253511-00	Rev P01
---------------------------------	-------------------

Name
Figure 5

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

Appendix A

Soil screening results

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref	20-BH11	20-BH11	20-BH12	20-TP11	20-TP12	20-TP12
Sample Ref	7	2	4	3	5	1
Easting	435029.3	435029.3	435037.8	435014.4	435022.4	435022.4
Northing	407244	407244	407256.3	407226.2	407226.1	407226.1
Hole Elevation (mOD)	45.4	45.4	44	48	48	48
Sample Depth (mbgl)	1.8	0.3	1	1	1	0.3
Sample Date	13/09/21	06/09/21	13/09/21	08/09/21	08/09/21	08/09/21
Investigation	AEG2021	AEG2021	AEG2021	AEG2021	AEG2021	AEG2021
Geology	MG-CO	MG-GR	MG-CO	MG-GR	MG-GR	TOP

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation						
Metal															
Antimony	7350	AGAC	mg/kg	16 of 22	0	<1	7.2		0	1.8	<1	2	1.4	<1	2.4
Arsenic	635	AGAC	mg/kg	22 of 22	0	1.5	26		0	10	1.5	12	6.3	4.7	21
Beryllium	11.7	AGAC	mg/kg	21 of 22	0	<0.2	2.8		0	1	<0.2	1.2	0.4	0.4	0.9
Cadmium	190	.GAC/S4U	mg/kg	19 of 22	0	<0.1	1		0	0.2	1	0.2	0.4	0.3	0.3
Chromium	8570	GAC (Cr I	mg/kg	22 of 22	0	2.6	32		0	10	2.6	13	10	6.6	18
Chromium - Hexavalent	33	.GAC/S4U	mg/kg	0 of 4	0	<1	<1		0						
Copper	68300	AGAC	mg/kg	22 of 22	0	9.9	90		0	39	9.9	30	39	17	64
Lead	2300	C4SL	mg/kg	22 of 22	0	6.6	430		0	19	23	40	35	38	78
Mercury	1100	JL (inorga	mg/kg	13 of 22	0	<0.05	0.52		0	0.06	<0.05	0.08	0.2	0.07	0.25
Nickel	983	AGAC	mg/kg	22 of 22	0	2.3	45		0	35	2.3	29	9	5.7	21
Selenium	12261	AGAC	mg/kg	9 of 22	0	<0.5	1.1		0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	9000	L (pentave	mg/kg	22 of 22	0	3.7	90		0	19	3.7	24	17	15	30
Zinc	730000	.GAC/S4U	mg/kg	22 of 22	0	28	160		0	56	67	91	110	61	130
Inorganic															
pH			pH Units	No GAC	-	6.9	11.3		0	7.8	11.1	8.2	9.4	7.9	7.2
Cyanide	168	.C (free, a	mg/kg	18 of 22	0	<0.1	1.1		0	<0.1	<0.1	<0.1	0.4	0.1	0.6
Boron	236000	AGAC	mg/kg	21 of 22	0	<0.2	4.9		0	0.2	<0.2	0.8	0.5	0.3	0.7
Phenol (Monohydric)	1300	(direct co	mg/kg	8 of 22	0	<0.3	1.6		0	<0.3	<0.3	<0.3	0.4	<0.3	0.7
Total Organic Carbon			%	No GAC	-	0.2	8		0	1.7	0.2	1.7	1.1	0.5	2.3
Asbestos															
Asbestos Quantification (Total %)			%	No GAC	-	0.001	0.001		0						0.001
Asbestos (Presence of)			---	No GAC	-				0	NAD	NAD		NAD	NAD	Chrysotile
Asbestos Analysts Comments			---	No GAC	-				0	na	na		na	na	Chrysotile fibres
TPH															
Aliphatics >C10-12	47300	AGAC	mg/kg	0 of 13	0	<1.5	<1.5	283.0	0	<1.5		<1.5	<1.5	<1.5	<1.5
Aliphatics >C12-16	90200	AGAC	mg/kg	0 of 13	0	<1.2	<1.2	142.0	0	<1.2		<1.2	<1.2	<1.2	<1.2
Aliphatics >C16-21	143000000	(Ali >C1	mg/kg	2 of 13	0	<1.5	8.4	50.90	0	<1.5		<1.5	<1.5	<1.5	<1.5
Aliphatics >C21-35	143000000	(Ali >C1	mg/kg	3 of 13	0	<3.4	110	50.90	2	<3.4		<3.4	<3.4	<3.4	<3.4
Aliphatics >C35-44	143000000	(Ali >C1	mg/kg	0 of 6	0	<3.4	<3.4	50.90	0	<3.4		<3.4	<3.4	<3.4	<3.4
Aliphatics >C5-35			mg/kg	No GAC	-	<10	110		0						
Aliphatics >C5-6	12100	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	1150.0	0	<0.01		<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-8	39600	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	736.0	0	<0.01		<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-10	11300	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	451.0	0	<0.01		<0.01	<0.01	<0.01	<0.01
Aromatics >C10-12	34200	AGAC	mg/kg	0 of 13	0	<0.9	<0.9	2150.0	0	<0.9		<0.9	<0.9	<0.9	<0.9
Aromatics >C12-16	37800	AGAC	mg/kg	2 of 13	0	<0.5	2.9		0	<0.5		<0.5	<0.5	<0.5	<0.5
Aromatics >C16-21	28100	AGAC	mg/kg	3 of 13	0	<0.6	16		0	<0.6		<0.6	3.2	<0.6	<0.6
Aromatics >C21-35	28400	AGAC	mg/kg	3 of 13	0	<1.4	42		0	<1.4		<1.4	2.5	<1.4	<1.4
Aromatics >C35-44	28400	AGAC	mg/kg	0 of 6	0	<1.4	<1.4		0	<1.4		<1.4	<1.4	<1.4	<1.4
Aromatics >C7-8	183681	iAC (tolue	mg/kg	0 of 13	0	<0.01	<0.01	4360.0	0	<0.01		<0.01	<0.01	<0.01	<0.01
Aromatics >C8-10	17000	.GAC/S4U	mg/kg	0 of 13	0	<0.01	<0.01	3580.0	0	<0.01		<0.01	<0.01	<0.01	<0.01
Aromatics >C10-44			mg/kg	No GAC	-	<10	<10		0	<10		<10	<10	<10	<10
Aliphatics >C10-44			mg/kg	No GAC	-	<10	<10		0	<10		<10	<10	<10	<10
Aromatics >C5-7			mg/kg	No GAC	-	<0.01	<0.01		0	<0.01		<0.01	<0.01	<0.01	<0.01
Total Aliphatics and Aromatics C5-C35			mg/kg	No GAC	-	<10	170		0						
Total Aromatics C5-C35			mg/kg	No GAC	-	<10	61		0						
Total Aliphatics and Aromatics C10-C44			mg/kg	No GAC	-	<10	<10		0	<10		<10	<10	<10	<10
PAH															
Acenaphthene	104000	AGAC	mg/kg	5 of 13	0	<0.03	1.1		0	<0.03		<0.03	1	<0.03	0.03
Dibenz-a-h-anthracene	3.57	.GAC/S4U	mg/kg	6 of 13	0	<0.03	0.19		0	<0.03		0.03	0.19	<0.03	0.05
Fluoranthene	22700	AGAC	mg/kg	12 of 13	0	<0.03	5.3		0	<0.03		0.76	4.9	0.07	0.78
Fluorene	70800	AGAC	mg/kg	7 of 13	0	<0.03	1.1		0	<0.03		<0.03	1	<0.03	0.03

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref	20-BH11	20-BH11	20-BH12	20-TP11	20-TP12	20-TP12
Sample Ref	7	2	4	3	5	1
Easting	435029.3	435029.3	435037.8	435014.4	435022.4	435022.4
Northing	407244	407244	407256.3	407226.2	407226.1	407226.1
Hole Elevation (mOD)	45.4	45.4	44	48	48	48
Sample Depth (mbgl)	1.8	0.3	1	1	1	0.3
Sample Date	13/09/21	06/09/21	13/09/21	08/09/21	08/09/21	08/09/21
Investigation	AEG2021	AEG2021	AEG2021	AEG2021	AEG2021	AEG2021
Geology	MG-CO	MG-GR	MG-CO	MG-GR	MG-GR	TOP

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation						
Indeno(1,2,3-cd)pyrene	509	AGAC	mg/kg	11 of 13	0	<0.03	0.58	432.0	0	<0.03	0.11	0.58	0.03	0.16	
Phenanthrene	22500	AGAC	mg/kg	12 of 13	0	<0.03	6		0	<0.03	0.26	5.3	0.04	0.44	
Pyrene	54500	AGAC	mg/kg	12 of 13	0	<0.03	4.1		0	<0.03	0.71	4.1	0.07	0.65	
Napthalene	1090	AGAC	mg/kg	8 of 13	0	<0.03	1.2		0	<0.03	<0.03	0.57	<0.03	0.04	
Pah,Total			mg/kg	No GAC	-	0.33	31		0	0.33	4.1	27	0.74	4.3	
Acenaphthylene	104000	AGAC	mg/kg	5 of 13	0	<0.03	0.34		0	<0.03	0.34	0.1	<0.03	<0.03	
Anthracene	542000	AGAC	mg/kg	10 of 13	0	<0.03	1.9		0	<0.03	0.09	1.4	<0.03	0.11	
Benzo(a)anthracene	176	AGAC	mg/kg	12 of 13	0	<0.03	2.1		0	<0.03	0.64	1.5	0.03	0.26	
Benzo (g,h,i) perylene	3960	AGAC	mg/kg	11 of 13	0	<0.03	0.65		0	<0.03	0.11	0.64	0.04	0.19	
Benzo(a)pyrene	35.7	.GAC/S4U	mg/kg	13 of 13	0	0.09	1.7		0	0.33	0.34	1	0.31	0.49	
Benzo(b)fluoranthene	44.9	.GAC/S4U	mg/kg	12 of 13	0	<0.03	2		0	<0.03	0.38	1.5	0.07	0.49	
Benzo(k)fluoranthene	1190	AGAC	mg/kg	11 of 13	0	<0.03	0.87		0	<0.03	0.17	0.75	<0.03	0.19	
Chrysene	355	AGAC	mg/kg	12 of 13	0	<0.03	2		0	<0.03	0.22	2	0.06	0.45	
BTEX															
Benzene	90.17829	.GAC/S4U	mg/kg	0 of 13	0	<0.01	<0.01		0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	183681	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	4360.0	0	<0.01	<0.01	<0.01	<0.01	<0.01	
Ethylbenzene	27424	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	2840.0	0	<0.01	<0.01	<0.01	<0.01	<0.01	
Xylene	29969	AC (p-xyle	mg/kg	0 of 13	0	<0.01	<0.01	3170.0	0	<0.01	<0.01	<0.01	<0.01	<0.01	
PCBs															
PCB-118 2,3,4,4,5 - Pentachlorobiphenyl	0.000171	backgrou	mg/kg	0 of 6	0	<0.01	<0.01	0							
PCB-138 2,2,3,4,4,5 - Hexachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01	0							
PCB-153 2,2,4,4,5,5 - Hexachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01	0							
PCB-180 2,2,3,4,4,5,5 - Heptachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01	0							
PCB-52 2,2,5,5 - Tetrachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01	0							
PCB-101 2,2,4,5,5 - Pentachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01	0							
PCB 28 + PCB 31			mg/kg	No GAC	-	<0.01	<0.01	0							
PCB, Total Of 7 Congeners			mg/kg	No GAC	-	<0.01	<0.01	0							

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref	20-TP13	20-TP13	BH01	BH02	DP01	DP02
Sample Ref	8	1	6	2	1	1
Easting	435041.3	435041.3	435020.413	435055.375	435023.097	435078.222
Northing	407271.6	407271.6	407222.848	407300.576	407218.621	407332.899
Hole Elevation (mOD)	44.9	44.9	48.062	44.764	48.315	45.614
Sample Depth (mbgl)	2	0.3	1.1	0.5	0.5	0.5
Sample Date	09/09/21	09/09/21	20/06/18	26/06/18	21/06/08	22/06/18
Investigation	AEG2021	AEG2021	AEG2018	AEG2018	AEG2018	AEG2018
Geology	ALV-CO	MG-GR	MG-GR	MG-CO		

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation						
Metal															
Antimony	7350	AGAC	mg/kg	16 of 22	0	<1	7.2		0	1.9	1.2	<1	1.2	1.2	<1
Arsenic	635	AGAC	mg/kg	22 of 22	0	1.5	26		0	7.2	9.5	3.9	7	8	6.1
Beryllium	11.7	AGAC	mg/kg	21 of 22	0	<0.2	2.8		0	1	1.2	2.8	1.7	0.5	2.2
Cadmium	190	.GAC/S4U	mg/kg	19 of 22	0	<0.1	1		0	0.2	0.2	<0.1	0.1	0.4	0.7
Chromium	8570	GAC (Cr I	mg/kg	22 of 22	0	2.6	32		0	14	14	32	11	21	21
Chromium - Hexavalent	33	.GAC/S4U	mg/kg	0 of 4	0	<1	<1		0			<1			
Copper	68300	AGAC	mg/kg	22 of 22	0	9.9	90		0	21	20	22	18	40	15
Lead	2300	C4SL	mg/kg	22 of 22	0	6.6	430		0	18	21	6.6	19	31	16
Mercury	1100	JL (inorga	mg/kg	13 of 22	0	<0.05	0.52		0	<0.05	<0.05	<0.05	<0.05	0.13	<0.05
Nickel	983	AGAC	mg/kg	22 of 22	0	2.3	45		0	24	17	12	12	11	5.2
Selenium	12261	AGAC	mg/kg	9 of 22	0	<0.5	1.1		0	0.5	0.5	1.1	<0.5	<0.5	0.9
Vanadium	9000	L (pentave	mg/kg	22 of 22	0	3.7	90		0	21	26	90	22	23	51
Zinc	730000	.GAC/S4U	mg/kg	22 of 22	0	28	160		0	69	49	28	43	73	52
Inorganic															
pH			pH Units	No GAC	-	6.9	11.3		0	7.2	9	11.3	8.6	10	10.3
Cyanide	168	.C (free, a	mg/kg	18 of 22	0	<0.1	1.1		0	0.2	0.2	0.4	0.4	0.4	0.6
Boron	236000	AGAC	mg/kg	21 of 22	0	<0.2	4.9		0	0.6	0.6	3.3	1.6	2.6	4.4
Phenol (Monohydric)	1300	(direct co	mg/kg	8 of 22	0	<0.3	1.6		0	<0.3	<0.3	<0.3	<0.3	0.5	0.9
Total Organic Carbon			%	No GAC	-	0.2	8		0	1.6	1.6	2.7	3.6	3.3	4.7
Asbestos															
Asbestos Quantification (Total %)			%	No GAC	-	0.001	0.001		0						
Asbestos (Presence of)			---	No GAC	-				0	NAD	NAD	NAD			
Asbestos Analysts Comments			---	No GAC	-				0	na	na	na			
TPH															
Aliphatics >C10-12	47300	AGAC	mg/kg	0 of 13	0	<1.5	<1.5	283.0	0	<1.5		<1.5			
Aliphatics >C12-16	90200	AGAC	mg/kg	0 of 13	0	<1.2	<1.2	142.0	0	<1.2		<1.2			
Aliphatics >C16-21	143000000	(Ali >C1	mg/kg	2 of 13	0	<1.5	8.4	50.90	0	<1.5		<1.5			
Aliphatics >C21-35	143000000	(Ali >C1	mg/kg	3 of 13	0	<3.4	110	50.90	2	<3.4		<3.4			
Aliphatics >C35-44	143000000	(Ali >C1	mg/kg	0 of 6	0	<3.4	<3.4	50.90	0	<3.4					
Aliphatics >C5-35			mg/kg	No GAC	-	<10	110		0				<10		
Aliphatics >C5-6	12100	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	1150.0	0	<0.01		<0.01			
Aliphatics >C6-8	39600	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	736.0	0	<0.01		<0.01			
Aliphatics >C8-10	11300	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	451.0	0	<0.01		<0.01			
Aromatics >C10-12	34200	AGAC	mg/kg	0 of 13	0	<0.9	<0.9	2150.0	0	<0.9		<0.9			
Aromatics >C12-16	37800	AGAC	mg/kg	2 of 13	0	<0.5	2.9		0	<0.5		<0.5			
Aromatics >C16-21	28100	AGAC	mg/kg	3 of 13	0	<0.6	16		0	<0.6		<0.6			
Aromatics >C21-35	28400	AGAC	mg/kg	3 of 13	0	<1.4	42		0	<1.4		<1.4			
Aromatics >C35-44	28400	AGAC	mg/kg	0 of 6	0	<1.4	<1.4		0	<1.4					
Aromatics >C7-8	183681	iAC (tolue	mg/kg	0 of 13	0	<0.01	<0.01	4360.0	0	<0.01		<0.01			
Aromatics >C8-10	17000	.GAC/S4U	mg/kg	0 of 13	0	<0.01	<0.01	3580.0	0	<0.01		<0.01			
Aromatics >C10-44			mg/kg	No GAC	-	<10	<10		0	<10					
Aliphatics >C10-44			mg/kg	No GAC	-	<10	<10		0	<10					
Aromatics >C5-7			mg/kg	No GAC	-	<0.01	<0.01		0	<0.01		<0.01			
Total Aliphatics and Aromatics C5-C35			mg/kg	No GAC	-	<10	170		0			<10			
Total Aromatics C5-C35			mg/kg	No GAC	-	<10	61		0			<10			
Total Aliphatics and Aromatics C10-C44			mg/kg	No GAC	-	<10	<10		0	<10					
PAH															
Acenaphthene	104000	AGAC	mg/kg	5 of 13	0	<0.03	1.1		0	<0.03		<0.03			
Dibenz-a-h-anthracene	3.57	.GAC/S4U	mg/kg	6 of 13	0	<0.03	0.19		0	0.03		<0.03			
Fluoranthene	22700	AGAC	mg/kg	12 of 13	0	<0.03	5.3		0	0.38		1			
Fluorene	70800	AGAC	mg/kg	7 of 13	0	<0.03	1.1		0	<0.03		0.05			

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref	20-TP13	20-TP13	BH01	BH02	DP01	DP02
Sample Ref	8	1	6	2	1	1
Easting	435041.3	435041.3	435020.413	435055.375	435023.097	435078.222
Northing	407271.6	407271.6	407222.848	407300.576	407218.621	407332.899
Hole Elevation (mOD)	44.9	44.9	48.062	44.764	48.315	45.614
Sample Depth (mbgl)	2	0.3	1.1	0.5	0.5	0.5
Sample Date	09/09/21	09/09/21	20/06/18	26/06/18	21/06/08	22/06/18
Investigation	AEG2021	AEG2021	AEG2018	AEG2018	AEG2018	AEG2018
Geology	ALV-CO	MG-GR	MG-GR	MG-CO		

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation		
Indeno(1,2,3-cd)pyrene	509	AGAC	mg/kg	11 of 13	0	<0.03	0.58		0	0.09	0.27
Phenanthrene	22500	AGAC	mg/kg	12 of 13	0	<0.03	6		0	0.2	0.63
Pyrene	54500	AGAC	mg/kg	12 of 13	0	<0.03	4.1		0	0.32	0.96
Napthalene	1090	AGAC	mg/kg	8 of 13	0	<0.03	1.2	432.0	0	<0.03	0.15
Pah,Total			mg/kg	No GAC	-	0.33	31		0	2.4	6.7
Acenaphthylene	104000	AGAC	mg/kg	5 of 13	0	<0.03	0.34		0	<0.03	0.04
Anthracene	542000	AGAC	mg/kg	10 of 13	0	<0.03	1.9		0	0.07	0.23
Benzo(a)anthracene	176	AGAC	mg/kg	12 of 13	0	<0.03	2.1		0	0.13	0.58
Benzo (g,h,i) perylene	3960	AGAC	mg/kg	11 of 13	0	<0.03	0.65		0	0.1	0.31
Benzo(a)pyrene	35.7	.GAC/S4U	mg/kg	13 of 13	0	0.09	1.7		0	0.41	0.6
Benzo(b)fluoranthene	44.9	.GAC/S4U	mg/kg	12 of 13	0	<0.03	2		0	0.23	0.83
Benzo(k)fluoranthene	1190	AGAC	mg/kg	11 of 13	0	<0.03	0.87		0	0.25	0.41
Chrysene	355	AGAC	mg/kg	12 of 13	0	<0.03	2		0	0.24	0.61
BTEX											
Benzene	90.17829	.GAC/S4U	mg/kg	0 of 13	0	<0.01	<0.01		0	<0.01	<0.01
Toluene	183681	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	4360.0	0	<0.01	<0.01
Ethylbenzene	27424	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	2840.0	0	<0.01	<0.01
Xylene	29969	AC (p-xyle	mg/kg	0 of 13	0	<0.01	<0.01	3170.0	0	<0.01	<0.01
PCBs											
PCB-118 2,3,4,4,5 - Pentachlorobiphenyl	0.000171	n backgrou	mg/kg	0 of 6	0	<0.01	<0.01		0		<0.01
PCB-138 2,2,3,4,4,5 - Hexachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0		<0.01
PCB-153 2,2,4,4,5,5 - Hexachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0		<0.01
PCB-180 2,2,3,4,4,5,5 - Heptachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0		<0.01
PCB-52 2,2,5,5 - Tetrachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0		<0.01
PCB-101 2,2,4,5,5 - Pentachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0		<0.01
PCB 28 + PCB 31			mg/kg	No GAC	-	<0.01	<0.01		0		<0.01
PCB, Total Of 7 Congeners			mg/kg	No GAC	-	<0.01	<0.01		0		<0.01

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref	WS01	WS01	WS01	WS01	WS03	WS03
Sample Ref	5	12	13	2	13	15
Easting	435003.555	435003.555	435003.555	435003.555	435046.836	435046.836
Northing	407218.612	407218.612	407218.612	407218.612	407294.816	407294.816
Hole Elevation (mOD)	44.532	44.532	44.532	44.532	44.619	44.619
Sample Depth (mbgl)	0.5	1.2	2.2	0.2	3	4.8
Sample Date	20/06/18			20/06/18	26/06/18	26/06/18
Investigation	AEG2018	AEG2018	AEG2018	AEG2018	AEG2018	AEG2018
Geology	MG-GR	MG-GR	MG-GR	TOP	ALV-CO	ALV-GR

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation						
Metal															
Antimony	7350	AGAC	mg/kg	16 of 22	0	<1	7.2		0	<1		<1	1.9	1.5	4
Arsenic	635	AGAC	mg/kg	22 of 22	0	1.5	26		0	3.8		5.4	14	6	7.1
Beryllium	11.7	AGAC	mg/kg	21 of 22	0	<0.2	2.8		0	0.2		0.4	1.2	1	1.5
Cadmium	190	.GAC/S4U	mg/kg	19 of 22	0	<0.1	1		0	0.5		0.4	0.4	<0.1	<0.1
Chromium	8570	GAC (Cr I	mg/kg	22 of 22	0	2.6	32		0	5.2		8.3	22	12	13
Chromium - Hexavalent	33	.GAC/S4U	mg/kg	0 of 4	0	<1	<1		0	<1	<1				
Copper	68300	AGAC	mg/kg	22 of 22	0	9.9	90		0	16		29	90	18	18
Lead	2300	C4SL	mg/kg	22 of 22	0	6.6	430		0	16		39	52	38	24
Mercury	1100	JL (inorga	mg/kg	13 of 22	0	<0.05	0.52		0	<0.05		0.12	0.52	<0.05	<0.05
Nickel	983	AGAC	mg/kg	22 of 22	0	2.3	45		0	6.4		7.9	16	21	30
Selenium	12261	AGAC	mg/kg	9 of 22	0	<0.5	1.1		0	<0.5		<0.5	1	<0.5	<0.5
Vanadium	9000	L (pentava	mg/kg	22 of 22	0	3.7	90		0	7.9		14	36	21	35
Zinc	730000	.GAC/S4U	mg/kg	22 of 22	0	28	160		0	90		75	110	73	130
Inorganic															
pH			pH Units	No GAC	-	6.9	11.3		0	9		11	8.1	7.7	6.9
Cyanide	168	.C (free, a	mg/kg	18 of 22	0	<0.1	1.1		0	0.1		0.3	1.1	0.1	<0.1
Boron	236000	AGAC	mg/kg	21 of 22	0	<0.2	4.9		0	1.4		2	2.6	4	3.7
Phenol (Monohydric)	1300	(direct co	mg/kg	8 of 22	0	<0.3	1.6		0	1.6		<0.3	0.3	<0.3	<0.3
Total Organic Carbon			%	No GAC	-	0.2	8		0	5.1		4.5	4.6	2.4	0.6
Asbestos															
Asbestos Quantification (Total %)			%	No GAC	-	0.001	0.001		0						
Asbestos (Presence of)			---	No GAC	-				0	NAD		Amosite			
Asbestos Analysts Comments			---	No GAC	-				0	na pic asbestos sheeting board debris					
TPH															
Aliphatics >C10-12	47300	AGAC	mg/kg	0 of 13	0	<1.5	<1.5	283.0	0	<1.5	<1.5	<1.5	<1.5		
Aliphatics >C12-16	90200	AGAC	mg/kg	0 of 13	0	<1.2	<1.2	142.0	0	<1.2	<1.2	<1.2	<1.2		
Aliphatics >C16-21	143000000	(Ali >C1	mg/kg	2 of 13	0	<1.5	8.4	50.90	0	<1.5	8.4	5.1	<1.5		
Aliphatics >C21-35	143000000	(Ali >C1	mg/kg	3 of 13	0	<3.4	110	50.90	2	<3.4	69	110	28		
Aliphatics >C35-44	143000000	(Ali >C1	mg/kg	0 of 6	0	<3.4	<3.4	50.90	0						
Aliphatics >C5-35			mg/kg	No GAC	-	<10	110		0	<10	78	110	28		
Aliphatics >C5-6	12100	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	1150.0	0	<0.01	<0.01	<0.01	<0.01		
Aliphatics >C6-8	39600	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	736.0	0	<0.01	<0.01	<0.01	<0.01		
Aliphatics >C8-10	11300	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	451.0	0	<0.01	<0.01	<0.01	<0.01		
Aromatics >C10-12	34200	AGAC	mg/kg	0 of 13	0	<0.9	<0.9	2150.0	0	<0.9	<0.9	<0.9	<0.9		
Aromatics >C12-16	37800	AGAC	mg/kg	2 of 13	0	<0.5	2.9		0	<0.5	2	2.9	<0.5		
Aromatics >C16-21	28100	AGAC	mg/kg	3 of 13	0	<0.6	16		0	<0.6	12	16	<0.6		
Aromatics >C21-35	28400	AGAC	mg/kg	3 of 13	0	<1.4	42		0	<1.4	34	42	<1.4		
Aromatics >C35-44	28400	AGAC	mg/kg	0 of 6	0	<1.4	<1.4		0						
Aromatics >C7-8	183681	iAC (tolue	mg/kg	0 of 13	0	<0.01	<0.01	4360.0	0	<0.01	<0.01	<0.01	<0.01		
Aromatics >C8-10	17000	.GAC/S4U	mg/kg	0 of 13	0	<0.01	<0.01	3580.0	0	<0.01	<0.01	<0.01	<0.01		
Aromatics >C10-44			mg/kg	No GAC	-	<10	<10		0						
Aliphatics >C10-44			mg/kg	No GAC	-	<10	<10		0						
Aromatics >C5-7			mg/kg	No GAC	-	<0.01	<0.01		0	<0.01	<0.01	<0.01	<0.01		
Total Aliphatics and Aromatics C5-C35			mg/kg	No GAC	-	<10	170		0	<10	130	170	28		
Total Aromatics C5-C35			mg/kg	No GAC	-	<10	61		0	<10	48	61	<10		
Total Aliphatics and Aromatics C10-C44			mg/kg	No GAC	-	<10	<10		0						
PAH															
Acenaphthene	104000	AGAC	mg/kg	5 of 13	0	<0.03	1.1		0	<0.03	1.1	0.5	<0.03		
Dibenz-a-h-anthracene	3.57	.GAC/S4U	mg/kg	6 of 13	0	<0.03	0.19		0	<0.03	0.18	0.17	<0.03		
Fluoranthene	22700	AGAC	mg/kg	12 of 13	0	<0.03	5.3		0	0.53	5.3	3.6	0.22		
Fluorene	70800	AGAC	mg/kg	7 of 13	0	<0.03	1.1		0	<0.03	1.1	0.46	<0.03		

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref	WS01	WS01	WS01	WS01	WS03	WS03
Sample Ref	5	12	13	2	13	15
Easting	435003.555	435003.555	435003.555	435003.555	435046.836	435046.836
Northing	407218.612	407218.612	407218.612	407218.612	407294.816	407294.816
Hole Elevation (mOD)	44.532	44.532	44.532	44.532	44.619	44.619
Sample Depth (mbgl)	0.5	1.2	2.2	0.2	3	4.8
Sample Date	20/06/18			20/06/18	26/06/18	26/06/18
Investigation	AEG2018	AEG2018	AEG2018	AEG2018	AEG2018	AEG2018
Geology	MG-GR	MG-GR	MG-GR	TOP	ALV-CO	ALV-GR

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation				
Indeno(1,2,3-cd)pyrene	509	AGAC	mg/kg	11 of 13	0	<0.03	0.58		0	0.1	0.57	0.56	<0.03
Phenanthrene	22500	AGAC	mg/kg	12 of 13	0	<0.03	6		0	0.22	6	2.9	0.1
Pyrene	54500	AGAC	mg/kg	12 of 13	0	<0.03	4.1		0	0.43	4.1	2.9	0.2
Napthalene	1090	AGAC	mg/kg	8 of 13	0	<0.03	1.2	432.0	0	0.03	1.2	0.59	<0.03
Pah,Total			mg/kg	No GAC	-	0.33	31		0	2.4	31	20	1
Acenaphthylene	104000	AGAC	mg/kg	5 of 13	0	<0.03	0.34		0	<0.03	<0.03	0.08	<0.03
Anthracene	542000	AGAC	mg/kg	10 of 13	0	<0.03	1.9		0	0.09	1.9	1	<0.03
Benzo(a)anthracene	176	AGAC	mg/kg	12 of 13	0	<0.03	2.1		0	0.21	2.1	1.5	0.09
Benzo (g,h,i) perylene	3960	AGAC	mg/kg	11 of 13	0	<0.03	0.65		0	0.1	0.63	0.65	<0.03
Benzo(a)pyrene	35.7	.GAC/S4U	mg/kg	13 of 13	0	0.09	1.7		0	0.17	1.7	1.5	0.09
Benzo(b)fluoranthene	44.9	.GAC/S4U	mg/kg	12 of 13	0	<0.03	2		0	0.22	2	1.8	0.14
Benzo(k)fluoranthene	1190	AGAC	mg/kg	11 of 13	0	<0.03	0.87		0	0.08	0.87	0.76	0.06
Chrysene	355	AGAC	mg/kg	12 of 13	0	<0.03	2		0	0.19	1.9	1.4	0.12
BTEX													
Benzene	90.17829	.GAC/S4U	mg/kg	0 of 13	0	<0.01	<0.01		0	<0.01	<0.01	<0.01	<0.01
Toluene	183681	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	4360.0	0	<0.01	<0.01	<0.01	<0.01
Ethylbenzene	27424	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	2840.0	0	<0.01	<0.01	<0.01	<0.01
Xylene	29969	AC (p-xyle	mg/kg	0 of 13	0	<0.01	<0.01	3170.0	0	<0.01	<0.01	<0.01	<0.01
PCBs													
PCB-118 2,3,4,4,5 - Pentachlorobiphenyl	0.000171	n backgrou	mg/kg	0 of 6	0	<0.01	<0.01		0	<0.01		<0.01	
PCB-138 2,2,3,4,4,5 - Hexachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0	<0.01		<0.01	
PCB-153 2,2,4,4,5,5 - Hexachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0	<0.01		<0.01	
PCB-180 2,2,3,4,4,5,5 - Heptachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0	<0.01		<0.01	
PCB-52 2,2,5,5 - Tetrachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0	<0.01		<0.01	
PCB-101 2,2,4,5,5 - Pentachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0	<0.01		<0.01	
PCB 28 + PCB 31			mg/kg	No GAC	-	<0.01	<0.01		0	<0.01		<0.01	
PCB, Total Of 7 Congeners			mg/kg	No GAC	-	<0.01	<0.01		0	<0.01		<0.01	

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref	WS03	WS03	WS04	WS04	WS04
Sample Ref	3	12	15	1	13
Easting	435046.836	435046.836	435065.133	435065.133	435065.133
Northing	407294.816	407294.816	407314.005	407314.005	407314.005
Hole Elevation (mOD)	44.619	44.619	44.838	44.838	44.838
Sample Depth (mbgl)	1	1.2	2.2	0.5	1.3
Sample Date	21/06/18	26/06/18	26/06/18	22/06/18	26/06/18
Investigation	AEG2018	AEG2018	AEG2018	AEG2018	AEG2018
Geology	TOP	TOP	MG-CO	MG-GR	MG-GR

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation					
Metal														
Antimony	7350	AGAC	mg/kg	16 of 22	0	<1	7.2		0	1.8	7.2	1.5	1.6	2.7
Arsenic	635	AGAC	mg/kg	22 of 22	0	1.5	26		0	18	25	13	16	26
Beryllium	11.7	AGAC	mg/kg	21 of 22	0	<0.2	2.8		0	1.5	1.9	1.1	1.3	1.6
Cadmium	190	.GAC/S4U	mg/kg	19 of 22	0	<0.1	1		0	0.3	0.3	0.1	0.3	0.2
Chromium	8570	GAC (Cr I	mg/kg	22 of 22	0	2.6	32		0	15	18	16	16	17
Chromium - Hexavalent	33	.GAC/S4U	mg/kg	0 of 4	0	<1	<1		0		<1			
Copper	68300	AGAC	mg/kg	22 of 22	0	9.9	90		0	47	63	34	51	59
Lead	2300	C4SL	mg/kg	22 of 22	0	6.6	430		0	46	430	41	60	250
Mercury	1100	JL (inorga	mg/kg	13 of 22	0	<0.05	0.52		0	0.16	0.33	0.09	0.13	0.16
Nickel	983	AGAC	mg/kg	22 of 22	0	2.3	45		0	26	29	26	24	45
Selenium	12261	AGAC	mg/kg	9 of 22	0	<0.5	1.1		0	0.7	1	0.9	<0.5	0.5
Vanadium	9000	L (pentave	mg/kg	22 of 22	0	3.7	90		0	30	34	26	33	30
Zinc	730000	.GAC/S4U	mg/kg	22 of 22	0	28	160		0	86	160	74	86	100
Inorganic														
pH			pH Units	No GAC	-	6.9	11.3		0	8.3	8	7.9	8.2	7.9
Cyanide	168	.C (free, a	mg/kg	18 of 22	0	<0.1	1.1		0	0.7	0.4	0.4	0.7	0.2
Boron	236000	AGAC	mg/kg	21 of 22	0	<0.2	4.9		0	2	4.9	4.3	2.9	4.7
Phenol (Monohydric)	1300	(direct co	mg/kg	8 of 22	0	<0.3	1.6		0	0.4	<0.3	<0.3	0.5	<0.3
Total Organic Carbon			%	No GAC	-	0.2	8		0	7.3	7.7	6.6	8	6.2
Asbestos														
Asbestos Quantification (Total %)			%	No GAC	-	0.001	0.001		0					
Asbestos (Presence of)			---	No GAC	-				0	NAD	NAD			
Asbestos Analysts Comments			---	No GAC	-				0	na	na			
TPH														
Aliphatics >C10-12	47300	AGAC	mg/kg	0 of 13	0	<1.5	<1.5	283.0	0		<1.5			<1.5
Aliphatics >C12-16	90200	AGAC	mg/kg	0 of 13	0	<1.2	<1.2	142.0	0		<1.2			<1.2
Aliphatics >C16-21	143000000	(Ali >C1	mg/kg	2 of 13	0	<1.5	8.4	50.90	0		<1.5			<1.5
Aliphatics >C21-35	143000000	(Ali >C1	mg/kg	3 of 13	0	<3.4	110	50.90	2		<3.4			<3.4
Aliphatics >C35-44	143000000	(Ali >C1	mg/kg	0 of 6	0	<3.4	<3.4	50.90	0					
Aliphatics >C5-35			mg/kg	No GAC	-	<10	110		0		<10			<10
Aliphatics >C5-6	12100	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	1150.0	0		<0.01			<0.01
Aliphatics >C6-8	39600	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	736.0	0		<0.01			<0.01
Aliphatics >C8-10	11300	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	451.0	0		<0.01			<0.01
Aromatics >C10-12	34200	AGAC	mg/kg	0 of 13	0	<0.9	<0.9	2150.0	0		<0.9			<0.9
Aromatics >C12-16	37800	AGAC	mg/kg	2 of 13	0	<0.5	2.9		0		<0.5			<0.5
Aromatics >C16-21	28100	AGAC	mg/kg	3 of 13	0	<0.6	16		0		<0.6			<0.6
Aromatics >C21-35	28400	AGAC	mg/kg	3 of 13	0	<1.4	42		0		<1.4			<1.4
Aromatics >C35-44	28400	AGAC	mg/kg	0 of 6	0	<1.4	<1.4		0					
Aromatics >C7-8	183681	iAC (tolue	mg/kg	0 of 13	0	<0.01	<0.01	4360.0	0		<0.01			<0.01
Aromatics >C8-10	17000	.GAC/S4U	mg/kg	0 of 13	0	<0.01	<0.01	3580.0	0		<0.01			<0.01
Aromatics >C10-44			mg/kg	No GAC	-	<10	<10		0					
Aliphatics >C10-44			mg/kg	No GAC	-	<10	<10		0					
Aromatics >C5-7			mg/kg	No GAC	-	<0.01	<0.01		0		<0.01			<0.01
Total Aliphatics and Aromatics C5-C35			mg/kg	No GAC	-	<10	170		0		<10			<10
Total Aromatics C5-C35			mg/kg	No GAC	-	<10	61		0		<10			<10
Total Aliphatics and Aromatics C10-C44			mg/kg	No GAC	-	<10	<10		0					
PAH														
Acenaphthene	104000	AGAC	mg/kg	5 of 13	0	<0.03	1.1		0		<0.03			0.04
Dibenz-a-h-anthracene	3.57	.GAC/S4U	mg/kg	6 of 13	0	<0.03	0.19		0		<0.03			<0.03
Fluoranthene	22700	AGAC	mg/kg	12 of 13	0	<0.03	5.3		0		1.3			0.39
Fluorene	70800	AGAC	mg/kg	7 of 13	0	<0.03	1.1		0		0.03			0.05

Concentration exceeds GAC	100.00
Limit of Detection value exceeds GAC	<0.1
Concentration exceeds saturation value but not GAC	50

ARUP

Hole Ref	WS03	WS03	WS04	WS04	WS04
Sample Ref	3	12	15	1	13
Easting	435046.836	435046.836	435065.133	435065.133	435065.133
Northing	407294.816	407294.816	407314.005	407314.005	407314.005
Hole Elevation (mOD)	44.619	44.619	44.838	44.838	44.838
Sample Depth (mbgl)	1	1.2	2.2	0.5	1.3
Sample Date	21/06/18	26/06/18	26/06/18	22/06/18	26/06/18
Investigation	AEG2018	AEG2018	AEG2018	AEG2018	AEG2018
Geology	TOP	TOP	MG-CO	MG-GR	MG-GR

Contaminant Name	GAC	GAC Source	Units	Total > LOD	Total > GAC	Min	Max	Saturation Value	Total > Saturation				
Indeno(1,2,3-cd)pyrene	509	AGAC	mg/kg	11 of 13	0	<0.03	0.58		0			0.24	0.06
Phenanthrene	22500	AGAC	mg/kg	12 of 13	0	<0.03	6		0			0.57	0.35
Pyrene	54500	AGAC	mg/kg	12 of 13	0	<0.03	4.1		0			1.1	0.3
Napthalene	1090	AGAC	mg/kg	8 of 13	0	<0.03	1.2	432.0	0			0.03	0.16
Pah,Total			mg/kg	No GAC	-	0.33	31		0			6.3	2.1
Acenaphthylene	104000	AGAC	mg/kg	5 of 13	0	<0.03	0.34		0			0.05	<0.03
Anthracene	542000	AGAC	mg/kg	10 of 13	0	<0.03	1.9		0			0.15	0.1
Benzo(a)anthracene	176	AGAC	mg/kg	12 of 13	0	<0.03	2.1		0			0.57	0.16
Benzo (g,h,i) perylene	3960	AGAC	mg/kg	11 of 13	0	<0.03	0.65		0			0.25	0.05
Benzo(a)pyrene	35.7	.GAC/S4U	mg/kg	13 of 13	0	0.09	1.7		0			0.45	0.1
Benzo(b)fluoranthene	44.9	.GAC/S4U	mg/kg	12 of 13	0	<0.03	2		0			0.67	0.15
Benzo(k)fluoranthene	1190	AGAC	mg/kg	11 of 13	0	<0.03	0.87		0			0.28	0.06
Chrysene	355	AGAC	mg/kg	12 of 13	0	<0.03	2		0			0.62	0.16
BTEX													
Benzene	90.17829	.GAC/S4U	mg/kg	0 of 13	0	<0.01	<0.01		0			<0.01	<0.01
Toluene	183681	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	4360.0	0			<0.01	<0.01
Ethylbenzene	27424	AGAC	mg/kg	0 of 13	0	<0.01	<0.01	2840.0	0			<0.01	<0.01
Xylene	29969	AC (p-xyle	mg/kg	0 of 13	0	<0.01	<0.01	3170.0	0			<0.01	<0.01
PCBs													
PCB-118 2,3,4,4,5 - Pentachlorobiphenyl	0.000171	n backgrou	mg/kg	0 of 6	0	<0.01	<0.01		0			<0.01	<0.01
PCB-138 2,2,3,4,4,5 - Hexachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0			<0.01	<0.01
PCB-153 2,2,4,4,5,5 - Hexachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0			<0.01	<0.01
PCB-180 2,2,3,4,4,5,5 - Heptachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0			<0.01	<0.01
PCB-52 2,2,5,5 - Tetrachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0			<0.01	<0.01
PCB-101 2,2,4,5,5 - Pentachlorobiphenyl			mg/kg	No GAC	-	<0.01	<0.01		0			<0.01	<0.01
PCB 28 + PCB 31			mg/kg	No GAC	-	<0.01	<0.01		0			<0.01	<0.01
PCB, Total Of 7 Congeners			mg/kg	No GAC	-	<0.01	<0.01		0			<0.01	<0.01

Waste Classification Report

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

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



VSX51-1HSTX-SZAZ3

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

Job name

A61 Old Mill Lane (253511-00)

Description/Comments

This assessment was completed to the specified requirements at the time of writing, any changes may require re-evaluation.

Project

Site

Classified by

Name: **Tom Hartley**
Company: **Ove Arup**
Date: **19 Jul 2022 14:56 GMT**
Telephone:

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

HazWasteOnline™ Certification:

Course
Hazardous Waste Classification
Most recent 3 year Refresher

Date
18 Jun 2019
02 Aug 2022 *

* training course booked

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	20-BH11		Non Hazardous		3
2	20-BH11[2]		Non Hazardous		6
3	20-BH12		Non Hazardous		8
4	20-TP11		Non Hazardous		11
5	20-TP12		Non Hazardous		14
6	20-TP12[2]		Non Hazardous		17
7	20-TP13		Non Hazardous		20
8	20-TP13[2]		Non Hazardous		23
9	BH01		Non Hazardous		25
10	BH02		Non Hazardous		28
11	DP01		Non Hazardous		30
12	DP02		Non Hazardous		32
13	WS01		Non Hazardous		34
14	WS01[2]		Non Hazardous		37
15	WS01[3]		Non Hazardous		39
16	WS01[4]		Non Hazardous		42
17	WS03		Non Hazardous		45
18	WS03[2]		Non Hazardous		47
19	WS03[3]		Non Hazardous		49
20	WS03[4]		Non Hazardous		51
21	WS04		Non Hazardous		54
22	WS04[2]		Non Hazardous		56
23	WS04[3]		Non Hazardous		58

Related documents

#	Name	Description
1	A61	waste stream template used to create this Job

Report

Created by: Tom Hartley

Created date: 19 Jul 2022 14:56 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	61
Appendix B: Rationale for selection of metal species	62
Appendix C: Version	63

Classification of sample: 20-BH11


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

Sample details

Sample name:	LoW Code:
20-BH11	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.8	mg/kg	1.197	2.155	mg/kg	0.000215 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				10	mg/kg	1.32	13.203	mg/kg	0.00132 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1	mg/kg	2.775	2.775	mg/kg	0.000278 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.2	mg/kg	3.22	0.644	mg/kg	0.0000644 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				10	mg/kg	1.462	14.616	mg/kg	0.00146 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				39	mg/kg	1.126	43.91	mg/kg	0.00439 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	19	mg/kg	1.56	29.636	mg/kg	0.0019 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.06	mg/kg	1.353	0.0812	mg/kg	0.00000812 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				35	mg/kg	2.976	104.169	mg/kg	0.0104 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				19	mg/kg	2.774	52.709	mg/kg	0.00527 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				56	mg/kg		56	mg/kg	0.0056 %		
			TPH									
14	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
15	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
16	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
17	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
18	 cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD	
19	 pH			PH	7.8	pH		7.8	pH	7.8 pH			
20	 naphthalene 601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
21	 acenaphthylene	205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
22	 acenaphthene	201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
23	 fluorene	201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
24	 phenanthrene	201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
25	 anthracene	204-371-1	120-12-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
26	 fluoranthene	205-912-4	206-44-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
27	 pyrene	204-927-3	129-00-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
28	 benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
29	 chrysene 601-048-00-0	205-923-4	218-01-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
30	 benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
31	 benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
32	 benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.33	mg/kg		0.33	mg/kg	0.000033 %			
33	 indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
34	 dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
35	 benzo[ghi]perylene	205-883-8	191-24-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
36	 phenol 604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD	
Total:											0.0312 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0056%)

Classification of sample: 20-BH11[2]


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

Sample details

Sample name:	LoW Code:
20-BH11[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		<LOD
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				1.5	mg/kg	1.32	1.98	mg/kg	0.000198 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				<0.2	mg/kg	2.775	<0.555	mg/kg	<0.0000555 %		<LOD
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				<0.2	mg/kg	3.22	<0.644	mg/kg	<0.0000644 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				1	mg/kg	1.142	1.142	mg/kg	0.000114 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				2.6	mg/kg	1.462	3.8	mg/kg	0.00038 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				9.9	mg/kg	1.126	11.146	mg/kg	0.00111 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	23	mg/kg	1.56	35.876	mg/kg	0.0023 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.0000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				2.3	mg/kg	2.976	6.845	mg/kg	0.000685 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				3.7	mg/kg	2.774	10.264	mg/kg	0.00103 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				67	mg/kg		67	mg/kg	0.0067 %		
			TPH									
14	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 }				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
	006-007-00-5											
15	pH				11.1	pH		11.1	pH	11.1 pH		
			PH									
16	phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0129 %		

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
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0067%)

Classification of sample: 20-BH12


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

Sample details

Sample name:	LoW Code:
20-BH12	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2	mg/kg	1.197	2.394	mg/kg	0.000239 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.2	mg/kg	2.775	3.33	mg/kg	0.000333 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.8	mg/kg	3.22	2.576	mg/kg	0.000258 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13	mg/kg	1.462	19	mg/kg	0.0019 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				30	mg/kg	1.126	33.777	mg/kg	0.00338 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	40	mg/kg	1.56	62.393	mg/kg	0.004 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.08	mg/kg	1.353	0.108	mg/kg	0.0000108 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				29	mg/kg	2.976	86.312	mg/kg	0.00863 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				24	mg/kg	2.774	66.58	mg/kg	0.00666 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				91	mg/kg		91	mg/kg	0.0091 %		
			TPH									
14	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
15	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
16	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
17	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
18	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
	006-007-00-5											
19	pH				8.2	pH		8.2	pH	8.2 pH		
			PH									
20	naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
21	acenaphthylene				0.34	mg/kg		0.34	mg/kg	0.000034 %		
		205-917-1	208-96-8									
22	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-469-6	83-32-9									
23	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-695-5	86-73-7									
24	phenanthrene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
		201-581-5	85-01-8									
25	anthracene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
		204-371-1	120-12-7									
26	fluoranthene				0.76	mg/kg		0.76	mg/kg	0.000076 %		
		205-912-4	206-44-0									
27	pyrene				0.71	mg/kg		0.71	mg/kg	0.000071 %		
		204-927-3	129-00-0									
28	benzo[a]anthracene				0.64	mg/kg		0.64	mg/kg	0.000064 %		
	601-033-00-9	200-280-6	56-55-3									
29	chrysene				0.22	mg/kg		0.22	mg/kg	0.000022 %		
	601-048-00-0	205-923-4	218-01-9									
30	benzo[b]fluoranthene				0.38	mg/kg		0.38	mg/kg	0.000038 %		
	601-034-00-4	205-911-9	205-99-2									
31	benzo[k]fluoranthene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
	601-036-00-5	205-916-6	207-08-9									
32	benzo[a]pyrene; benzo[def]chrysene				0.34	mg/kg		0.34	mg/kg	0.000034 %		
	601-032-00-3	200-028-5	50-32-8									
33	indeno[123-cd]pyrene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		205-893-2	193-39-5									
34	dibenz[a,h]anthracene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
	601-041-00-2	200-181-8	53-70-3									
35	benzo[ghi]perylene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		205-883-8	191-24-2									
36	phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0367 %		

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
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0091%)

Classification of sample: 20-TP11


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

Sample details

Sample name: **20-TP11** LoW Code: Chapter: **17: Construction and Demolition Wastes (including excavated soil from contaminated sites)**
 Entry: **17 05 04 (Soil and stones other than those mentioned in 17 05 03)**

Hazard properties

None identified

Determinands

 Moisture content: **0% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.4	mg/kg	1.197	1.676	mg/kg	0.000168 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				6.3	mg/kg	1.32	8.318	mg/kg	0.000832 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.4	mg/kg	2.775	1.11	mg/kg	0.000111 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.5	mg/kg	3.22	1.61	mg/kg	0.000161 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.4	mg/kg	1.142	0.457	mg/kg	0.0000457 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				10	mg/kg	1.462	14.616	mg/kg	0.00146 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				39	mg/kg	1.126	43.91	mg/kg	0.00439 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	35	mg/kg	1.56	54.594	mg/kg	0.0035 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.2	mg/kg	1.353	0.271	mg/kg	0.0000271 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				9	mg/kg	2.976	26.786	mg/kg	0.00268 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				17	mg/kg	2.774	47.16	mg/kg	0.00472 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				110	mg/kg		110	mg/kg	0.011 %		
			TPH									
14	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
15	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
16	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
17	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
18	 cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.4	mg/kg	1.884	0.754	mg/kg	0.0000754 %			
19	 pH			PH	9.4	pH		9.4	pH	9.4 pH			
20	 naphthalene 601-052-00-2		202-049-5	91-20-3	0.57	mg/kg		0.57	mg/kg	0.000057 %			
21	 acenaphthylene		205-917-1	208-96-8	0.1	mg/kg		0.1	mg/kg	0.00001 %			
22	 acenaphthene		201-469-6	83-32-9	1	mg/kg		1	mg/kg	0.0001 %			
23	 fluorene		201-695-5	86-73-7	1	mg/kg		1	mg/kg	0.0001 %			
24	 phenanthrene		201-581-5	85-01-8	5.3	mg/kg		5.3	mg/kg	0.00053 %			
25	 anthracene		204-371-1	120-12-7	1.4	mg/kg		1.4	mg/kg	0.00014 %			
26	 fluoranthene		205-912-4	206-44-0	4.9	mg/kg		4.9	mg/kg	0.00049 %			
27	 pyrene		204-927-3	129-00-0	4.1	mg/kg		4.1	mg/kg	0.00041 %			
28	 benzo[a]anthracene 601-033-00-9		200-280-6	56-55-3	1.5	mg/kg		1.5	mg/kg	0.00015 %			
29	 chrysene 601-048-00-0		205-923-4	218-01-9	2	mg/kg		2	mg/kg	0.0002 %			
30	 benzo[b]fluoranthene 601-034-00-4		205-911-9	205-99-2	1.5	mg/kg		1.5	mg/kg	0.00015 %			
31	 benzo[k]fluoranthene 601-036-00-5		205-916-6	207-08-9	0.75	mg/kg		0.75	mg/kg	0.000075 %			
32	 benzo[a]pyrene; benzo[def]chrysene 601-032-00-3		200-028-5	50-32-8	1	mg/kg		1	mg/kg	0.0001 %			
33	 indeno[123-cd]pyrene		205-893-2	193-39-5	0.58	mg/kg		0.58	mg/kg	0.000058 %			
34	 dibenz[a,h]anthracene 601-041-00-2		200-181-8	53-70-3	0.19	mg/kg		0.19	mg/kg	0.000019 %			
35	 benzo[ghi]perylene		205-883-8	191-24-2	0.64	mg/kg		0.64	mg/kg	0.000064 %			
36	 phenol 604-001-00-2		203-632-7	108-95-2	0.4	mg/kg		0.4	mg/kg	0.00004 %			
Total:											0.032 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.011%)

Classification of sample: 20-TP12

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

Sample details

Sample name:	LoW Code:
20-TP12	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		<LOD
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				4.7	mg/kg	1.32	6.206	mg/kg	0.000621 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.4	mg/kg	2.775	1.11	mg/kg	0.000111 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.3	mg/kg	3.22	0.966	mg/kg	0.0000966 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				6.6	mg/kg	1.462	9.646	mg/kg	0.000965 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	38	mg/kg	1.56	59.273	mg/kg	0.0038 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.07	mg/kg	1.353	0.0947	mg/kg	0.00000947 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				5.7	mg/kg	2.976	16.965	mg/kg	0.0017 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				15	mg/kg	2.774	41.612	mg/kg	0.00416 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				61	mg/kg		61	mg/kg	0.0061 %		
			TPH									
14	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
15	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
16	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
17	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used	
		EU CLP index number	EC Number	CAS Number										
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]										
18	 cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }					0.1	mg/kg	1.884		0.188	mg/kg	0.0000188 %		
		006-007-00-5												
19	 pH			PH		7.9	pH			7.9	pH	7.9 pH		
20		naphthalene				<0.03	mg/kg			<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3										
21	 acenaphthylene					<0.03	mg/kg			<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8										
22	 acenaphthene					<0.03	mg/kg			<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9										
23	 fluorene					<0.03	mg/kg			<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7										
24	 phenanthrene					0.04	mg/kg			0.04	mg/kg	0.000004 %		
			201-581-5	85-01-8										
25	 anthracene					<0.03	mg/kg			<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7										
26	 fluoranthene					0.07	mg/kg			0.07	mg/kg	0.000007 %		
			205-912-4	206-44-0										
27	 pyrene					0.07	mg/kg			0.07	mg/kg	0.000007 %		
			204-927-3	129-00-0										
28		benzo[a]anthracene				0.03	mg/kg			0.03	mg/kg	0.000003 %		
		601-033-00-9	200-280-6	56-55-3										
29		chrysene				0.06	mg/kg			0.06	mg/kg	0.000006 %		
		601-048-00-0	205-923-4	218-01-9										
30		benzo[b]fluoranthene				0.07	mg/kg			0.07	mg/kg	0.000007 %		
		601-034-00-4	205-911-9	205-99-2										
31		benzo[k]fluoranthene				<0.03	mg/kg			<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9										
32		benzo[a]pyrene; benzo[def]chrysene				0.31	mg/kg			0.31	mg/kg	0.000031 %		
		601-032-00-3	200-028-5	50-32-8										
33	 indeno[123-cd]pyrene					0.03	mg/kg			0.03	mg/kg	0.000003 %		
			205-893-2	193-39-5										
34		dibenz[a,h]anthracene				<0.03	mg/kg			<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3										
35	 benzo[ghi]perylene					0.04	mg/kg			0.04	mg/kg	0.000004 %		
			205-883-8	191-24-2										
36		phenol				<0.3	mg/kg			<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2										
Total:												0.0199 %		

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
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0061%)

Classification of sample: 20-TP12[2]


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

Sample details

Sample name: **20-TP12[2]** LoW Code: Chapter: **17: Construction and Demolition Wastes (including excavated soil from contaminated sites)**
 Entry: **17 05 04 (Soil and stones other than those mentioned in 17 05 03)**

Hazard properties

None identified

Determinands

 Moisture content: **0% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.4	mg/kg	1.197	2.873	mg/kg	0.000287 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				21	mg/kg	1.32	27.727	mg/kg	0.00277 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.9	mg/kg	2.775	2.498	mg/kg	0.00025 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.7	mg/kg	3.22	2.254	mg/kg	0.000225 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18	mg/kg	1.462	26.308	mg/kg	0.00263 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				64	mg/kg	1.126	72.057	mg/kg	0.00721 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	78	mg/kg	1.56	121.666	mg/kg	0.0078 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.25	mg/kg	1.353	0.338	mg/kg	0.0000338 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				21	mg/kg	2.976	62.502	mg/kg	0.00625 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				30	mg/kg	2.774	83.224	mg/kg	0.00832 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				130	mg/kg		130	mg/kg	0.013 %		
			TPH									
14	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
15	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
16	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
17	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
18	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.6	mg/kg	1.884	1.13	mg/kg	0.000113 %		
	006-007-00-5											
19	pH				7.2	pH		7.2	pH	7.2 pH		
			pH									
20	naphthalene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
	601-052-00-2	202-049-5	91-20-3									
21	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8									
22	acenaphthene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		201-469-6	83-32-9									
23	fluorene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		201-695-5	86-73-7									
24	phenanthrene				0.44	mg/kg		0.44	mg/kg	0.000044 %		
		201-581-5	85-01-8									
25	anthracene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		204-371-1	120-12-7									
26	fluoranthene				0.78	mg/kg		0.78	mg/kg	0.000078 %		
		205-912-4	206-44-0									
27	pyrene				0.65	mg/kg		0.65	mg/kg	0.000065 %		
		204-927-3	129-00-0									
28	benzo[a]anthracene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
	601-033-00-9	200-280-6	56-55-3									
29	chrysene				0.45	mg/kg		0.45	mg/kg	0.000045 %		
	601-048-00-0	205-923-4	218-01-9									
30	benzo[b]fluoranthene				0.49	mg/kg		0.49	mg/kg	0.000049 %		
	601-034-00-4	205-911-9	205-99-2									
31	benzo[k]fluoranthene				0.19	mg/kg		0.19	mg/kg	0.000019 %		
	601-036-00-5	205-916-6	207-08-9									
32	benzo[a]pyrene; benzo[def]chrysene				0.49	mg/kg		0.49	mg/kg	0.000049 %		
	601-032-00-3	200-028-5	50-32-8									
33	indeno[123-cd]pyrene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
		205-893-2	193-39-5									
34	dibenz[a,h]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
	601-041-00-2	200-181-8	53-70-3									
35	benzo[ghi]perylene				0.19	mg/kg		0.19	mg/kg	0.000019 %		
		205-883-8	191-24-2									
36	phenol				0.7	mg/kg		0.7	mg/kg	0.00007 %		
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0496 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.013%)

Classification of sample: 20-TP13


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

Sample details

Sample name:	LoW Code:
20-TP13	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.9	mg/kg	1.197	2.274	mg/kg	0.000227 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				7.2	mg/kg	1.32	9.506	mg/kg	0.000951 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1	mg/kg	2.775	2.775	mg/kg	0.000278 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.6	mg/kg	3.22	1.932	mg/kg	0.000193 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				21	mg/kg	1.126	23.644	mg/kg	0.00236 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	18	mg/kg	1.56	28.077	mg/kg	0.0018 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				24	mg/kg	2.976	71.43	mg/kg	0.00714 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				0.5	mg/kg	2.554	1.277	mg/kg	0.000128 %		
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				21	mg/kg	2.774	58.257	mg/kg	0.00583 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				69	mg/kg		69	mg/kg	0.0069 %		
			TPH									
14	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
15	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
16	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
17	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
18	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.2	mg/kg	1.884	0.377	mg/kg	0.0000377 %		
	006-007-00-5											
19	pH				7.2	pH		7.2	pH	7.2 pH		
			PH									
20	naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
21	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8									
22	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-469-6	83-32-9									
23	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-695-5	86-73-7									
24	phenanthrene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
		201-581-5	85-01-8									
25	anthracene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
		204-371-1	120-12-7									
26	fluoranthene				0.38	mg/kg		0.38	mg/kg	0.000038 %		
		205-912-4	206-44-0									
27	pyrene				0.32	mg/kg		0.32	mg/kg	0.000032 %		
		204-927-3	129-00-0									
28	benzo[a]anthracene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
	601-033-00-9	200-280-6	56-55-3									
29	chrysene				0.24	mg/kg		0.24	mg/kg	0.000024 %		
	601-048-00-0	205-923-4	218-01-9									
30	benzo[b]fluoranthene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
	601-034-00-4	205-911-9	205-99-2									
31	benzo[k]fluoranthene				0.25	mg/kg		0.25	mg/kg	0.000025 %		
	601-036-00-5	205-916-6	207-08-9									
32	benzo[a]pyrene; benzo[def]chrysene				0.41	mg/kg		0.41	mg/kg	0.000041 %		
	601-032-00-3	200-028-5	50-32-8									
33	indeno[123-cd]pyrene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
		205-893-2	193-39-5									
34	dibenz[a,h]anthracene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
	601-041-00-2	200-181-8	53-70-3									
35	benzo[ghi]perylene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		205-883-8	191-24-2									
36	phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0282 %		

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
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0069%)

Classification of sample: 20-TP13[2]


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

Sample details

Sample name: **20-TP13[2]** LoW Code: Chapter: **17: Construction and Demolition Wastes (including excavated soil from contaminated sites)**
 Entry: **17 05 04 (Soil and stones other than those mentioned in 17 05 03)**

Hazard properties

None identified

Determinands

 Moisture content: **0% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.2	mg/kg	1.197	1.437	mg/kg	0.000144 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				9.5	mg/kg	1.32	12.543	mg/kg	0.00125 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.2	mg/kg	2.775	3.33	mg/kg	0.000333 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.6	mg/kg	3.22	1.932	mg/kg	0.000193 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				20	mg/kg	1.126	22.518	mg/kg	0.00225 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	21	mg/kg	1.56	32.756	mg/kg	0.0021 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				17	mg/kg	2.976	50.597	mg/kg	0.00506 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				0.5	mg/kg	2.554	1.277	mg/kg	0.000128 %		
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				26	mg/kg	2.774	72.128	mg/kg	0.00721 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				49	mg/kg		49	mg/kg	0.0049 %		
			TPH									
14	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 }				0.2	mg/kg	1.884	0.377	mg/kg	0.0000377 %		
	006-007-00-5											
15	pH				9	pH		9	pH	9pH		
			PH									
16	phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0257 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0049%)

Classification of sample: BH01


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

Sample details

Sample name: **BH01** LoW Code: Chapter: **17: Construction and Demolition Wastes (including excavated soil from contaminated sites)**
 Entry: **17 05 04 (Soil and stones other than those mentioned in 17 05 03)**

Hazard properties

None identified

Determinands

 Moisture content: **0% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	antimony { antimony trioxide }				<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %			<LOD
	051-005-00-X	215-175-0	1309-64-4								
2	arsenic { arsenic trioxide }				3.9 mg/kg	1.32	5.149 mg/kg	0.000515 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				2.8 mg/kg	2.775	7.771 mg/kg	0.000777 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { diboron trioxide; boric oxide }				3.3 mg/kg	3.22	10.626 mg/kg	0.00106 %			
	005-008-00-8	215-125-8	1303-86-2								
5	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				32 mg/kg	1.462	46.77 mg/kg	0.00468 %			
		215-160-9	1308-38-9								
7	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %			<LOD
	024-017-00-8										
8	copper { dicopper oxide; copper (I) oxide }				22 mg/kg	1.126	24.77 mg/kg	0.00248 %			
	029-002-00-X	215-270-7	1317-39-1								
9	lead { lead chromate }			1	6.6 mg/kg	1.56	10.295 mg/kg	0.00066 %			
	082-004-00-2	231-846-0	7758-97-6								
10	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
11	nickel { nickel chromate }				12 mg/kg	2.976	35.715 mg/kg	0.00357 %			
	028-035-00-7	238-766-5	14721-18-7								
12	selenium { nickel selenate }				1.1 mg/kg	2.554	2.809 mg/kg	0.000281 %			
	028-031-00-5	239-125-2	15060-62-5								
13	zinc { zinc chromate }				90 mg/kg	2.774	249.673 mg/kg	0.025 %			
	024-007-00-3	236-878-9	13530-65-9								
14	TPH (C6 to C40) petroleum group		TPH		28 mg/kg		28 mg/kg	0.0028 %			
15	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
16	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
18	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.4 mg/kg	1.884	0.754 mg/kg	0.0000754 %			
20	pH PH				11.3 pH		11.3 pH	11.3 pH			
21	naphthalene 601-052-00-2	202-049-5	91-20-3		0.15 mg/kg		0.15 mg/kg	0.000015 %			
22	acenaphthylene 205-917-1	208-96-8			0.04 mg/kg		0.04 mg/kg	0.000004 %			
23	acenaphthene 201-469-6	83-32-9			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
24	fluorene 201-695-5	86-73-7			0.05 mg/kg		0.05 mg/kg	0.000005 %			
25	phenanthrene 201-581-5	85-01-8			0.63 mg/kg		0.63 mg/kg	0.000063 %			
26	anthracene 204-371-1	120-12-7			0.23 mg/kg		0.23 mg/kg	0.000023 %			
27	fluoranthene 205-912-4	206-44-0			1 mg/kg		1 mg/kg	0.0001 %			
28	pyrene 204-927-3	129-00-0			0.96 mg/kg		0.96 mg/kg	0.000096 %			
29	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.58 mg/kg		0.58 mg/kg	0.000058 %			
30	chrysene 601-048-00-0	205-923-4	218-01-9		0.61 mg/kg		0.61 mg/kg	0.000061 %			
31	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.83 mg/kg		0.83 mg/kg	0.000083 %			
32	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.41 mg/kg		0.41 mg/kg	0.000041 %			
33	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.6 mg/kg		0.6 mg/kg	0.00006 %			
34	indeno[123-cd]pyrene 205-893-2	193-39-5			0.27 mg/kg		0.27 mg/kg	0.000027 %			
35	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
36	benzo[ghi]perylene 205-883-8	191-24-2			0.31 mg/kg		0.31 mg/kg	0.000031 %			
37	phenol 604-001-00-2	203-632-7	108-95-2		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<LOD
Total:									0.0429 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0028%)

Classification of sample: BH02


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

Sample details

Sample name:	LoW Code:
BH02	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.2	mg/kg	1.197	1.437	mg/kg	0.000144 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				7	mg/kg	1.32	9.242	mg/kg	0.000924 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.7	mg/kg	2.775	4.718	mg/kg	0.000472 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				1.6	mg/kg	3.22	5.152	mg/kg	0.000515 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11	mg/kg	1.462	16.077	mg/kg	0.00161 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				18	mg/kg	1.126	20.266	mg/kg	0.00203 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	19	mg/kg	1.56	29.636	mg/kg	0.0019 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				12	mg/kg	2.976	35.715	mg/kg	0.00357 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				22	mg/kg	2.774	61.031	mg/kg	0.0061 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				43	mg/kg		43	mg/kg	0.0043 %		
			TPH									
14	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 }				0.4	mg/kg	1.884	0.754	mg/kg	0.0000754 %		
	006-007-00-5											
15	pH				8.6	pH		8.6	pH	8.6 pH		
			PH									
16	phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0218 %		

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
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0043%)

Classification of sample: DP01


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

Sample details

Sample name:	LoW Code:
DP01	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.2	mg/kg	1.197	1.437	mg/kg	0.000144 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				8	mg/kg	1.32	10.563	mg/kg	0.00106 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.5	mg/kg	2.775	1.388	mg/kg	0.000139 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				2.6	mg/kg	3.22	8.372	mg/kg	0.000837 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.4	mg/kg	1.142	0.457	mg/kg	0.0000457 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21	mg/kg	1.462	30.693	mg/kg	0.00307 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				40	mg/kg	1.126	45.036	mg/kg	0.0045 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	31	mg/kg	1.56	48.354	mg/kg	0.0031 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.13	mg/kg	1.353	0.176	mg/kg	0.0000176 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				11	mg/kg	2.976	32.739	mg/kg	0.00327 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				23	mg/kg	2.774	63.805	mg/kg	0.00638 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				73	mg/kg		73	mg/kg	0.0073 %		
			TPH									
14	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 }				0.4	mg/kg	1.884	0.754	mg/kg	0.0000754 %		
	006-007-00-5											
15	pH				10	pH		10	pH	10pH		
			PH									
16	phenol				0.5	mg/kg		0.5	mg/kg	0.00005 %		
	604-001-00-2	203-632-7	108-95-2									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
17	polychlorobiphenyls; PCB					<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3								
Total:									0.0301 %		

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
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0073%)

Classification of sample: DP02


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

Sample details

Sample name:	LoW Code:
DP02	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		<LOD
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				6.1	mg/kg	1.32	8.054	mg/kg	0.000805 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				2.2	mg/kg	2.775	6.106	mg/kg	0.000611 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				4.4	mg/kg	3.22	14.167	mg/kg	0.00142 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.7	mg/kg	1.142	0.8	mg/kg	0.00008 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21	mg/kg	1.462	30.693	mg/kg	0.00307 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				15	mg/kg	1.126	16.888	mg/kg	0.00169 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	16	mg/kg	1.56	24.957	mg/kg	0.0016 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				5.2	mg/kg	2.976	15.477	mg/kg	0.00155 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				0.9	mg/kg	2.554	2.298	mg/kg	0.00023 %		
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				51	mg/kg	2.774	141.481	mg/kg	0.0141 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				52	mg/kg		52	mg/kg	0.0052 %		
			TPH									
14	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 }				0.6	mg/kg	1.884	1.13	mg/kg	0.000113 %		
	006-007-00-5											
15	pH				10.3	pH		10.3	pH	10.3 pH		
			PH									
16	phenol				0.9	mg/kg		0.9	mg/kg	0.00009 %		
	604-001-00-2	203-632-7	108-95-2									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
17	polychlorobiphenyls; PCB					<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3								
Total:									0.0307 %		

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
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0052%)

Classification of sample: WS01


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

Sample details

Sample name:	LoW Code:
WS01	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		<LOD
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				3.8	mg/kg	1.32	5.017	mg/kg	0.000502 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.2	mg/kg	2.775	0.555	mg/kg	0.0000555 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				1.4	mg/kg	3.22	4.508	mg/kg	0.000451 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.5	mg/kg	1.142	0.571	mg/kg	0.0000571 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				5.2	mg/kg	1.462	7.6	mg/kg	0.00076 %		
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<LOD
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				16	mg/kg	1.126	18.014	mg/kg	0.0018 %		
	029-002-00-X	215-270-7	1317-39-1									
9	lead { lead chromate }			1	16	mg/kg	1.56	24.957	mg/kg	0.0016 %		
	082-004-00-2	231-846-0	7758-97-6									
10	mercury { mercury dichloride }				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
11	nickel { nickel chromate }				6.4	mg/kg	2.976	19.048	mg/kg	0.0019 %		
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				7.9	mg/kg	2.774	21.916	mg/kg	0.00219 %		
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group		TPH		90	mg/kg		90	mg/kg	0.009 %		
15	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
16	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
17	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
18	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
19	 cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.1 mg/kg	1.884	0.188 mg/kg	0.0000188 %			
20	 pH PH				9 pH		9 pH	9pH			
21	naphthalene 601-052-00-2	202-049-5	91-20-3		0.03 mg/kg		0.03 mg/kg	0.000003 %			
22	 acenaphthylene 205-917-1	208-96-8			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
23	 acenaphthene 201-469-6	83-32-9			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
24	 fluorene 201-695-5	86-73-7			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
25	 phenanthrene 201-581-5	85-01-8			0.22 mg/kg		0.22 mg/kg	0.000022 %			
26	 anthracene 204-371-1	120-12-7			0.09 mg/kg		0.09 mg/kg	0.000009 %			
27	 fluoranthene 205-912-4	206-44-0			0.53 mg/kg		0.53 mg/kg	0.000053 %			
28	 pyrene 204-927-3	129-00-0			0.43 mg/kg		0.43 mg/kg	0.000043 %			
29	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.21 mg/kg		0.21 mg/kg	0.000021 %			
30	chrysene 601-048-00-0	205-923-4	218-01-9		0.19 mg/kg		0.19 mg/kg	0.000019 %			
31	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.22 mg/kg		0.22 mg/kg	0.000022 %			
32	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.08 mg/kg		0.08 mg/kg	0.000008 %			
33	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.17 mg/kg		0.17 mg/kg	0.000017 %			
34	 indeno[123-cd]pyrene 205-893-2	193-39-5			0.1 mg/kg		0.1 mg/kg	0.00001 %			
35	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
36	 benzo[ghi]perylene 205-883-8	191-24-2			0.1 mg/kg		0.1 mg/kg	0.00001 %			
37	phenol 604-001-00-2	203-632-7	108-95-2		1.6 mg/kg		1.6 mg/kg	0.00016 %			
38	 polychlorobiphenyls; PCB 602-039-00-4	215-648-1	1336-36-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
Total:									0.0192 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.009%)

Classification of sample: WS01[2]


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

Sample details

Sample name:	LoW Code:
WS01[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<LOD
	024-017-00-8									
2	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
3	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
4	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
5	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
6	naphthalene				1.2 mg/kg		1.2 mg/kg	0.00012 %		
	601-052-00-2	202-049-5	91-20-3							
7	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8							
8	acenaphthene				1.1 mg/kg		1.1 mg/kg	0.00011 %		
		201-469-6	83-32-9							
9	fluorene				1.1 mg/kg		1.1 mg/kg	0.00011 %		
		201-695-5	86-73-7							
10	phenanthrene				6 mg/kg		6 mg/kg	0.0006 %		
		201-581-5	85-01-8							
11	anthracene				1.9 mg/kg		1.9 mg/kg	0.00019 %		
		204-371-1	120-12-7							
12	fluoranthene				5.3 mg/kg		5.3 mg/kg	0.00053 %		
		205-912-4	206-44-0							
13	pyrene				4.1 mg/kg		4.1 mg/kg	0.00041 %		
		204-927-3	129-00-0							
14	benzo[a]anthracene				2.1 mg/kg		2.1 mg/kg	0.00021 %		
	601-033-00-9	200-280-6	56-55-3							
15	chrysene				1.9 mg/kg		1.9 mg/kg	0.00019 %		
	601-048-00-0	205-923-4	218-01-9							
16	benzo[b]fluoranthene				2 mg/kg		2 mg/kg	0.0002 %		
	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
	EU CLP index number	EC Number	CAS Number							
17	benzo[k]fluoranthene				0.87 mg/kg		0.87 mg/kg	0.000087 %		
	601-036-00-5	205-916-6	207-08-9							
18	benzo[a]pyrene; benzo[def]chrysene				1.7 mg/kg		1.7 mg/kg	0.00017 %		
	601-032-00-3	200-028-5	50-32-8							
19	indeno[123-cd]pyrene				0.57 mg/kg		0.57 mg/kg	0.000057 %		
		205-893-2	193-39-5							
20	dibenz[a,h]anthracene				0.18 mg/kg		0.18 mg/kg	0.000018 %		
	601-041-00-2	200-181-8	53-70-3							
21	benzo[ghi]perylene				0.63 mg/kg		0.63 mg/kg	0.000063 %		
		205-883-8	191-24-2							
Total:								0.0033 %		

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
ND	Not detected

Classification of sample: WS01[3]


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

Sample details

Sample name:	LoW Code:
WS01[3]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		<LOD
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				5.4	mg/kg	1.32	7.13	mg/kg	0.000713 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				0.4	mg/kg	2.775	1.11	mg/kg	0.000111 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				2	mg/kg	3.22	6.44	mg/kg	0.000644 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.4	mg/kg	1.142	0.457	mg/kg	0.0000457 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				8.3	mg/kg	1.462	12.131	mg/kg	0.00121 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				29	mg/kg	1.126	32.651	mg/kg	0.00327 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	39	mg/kg	1.56	60.833	mg/kg	0.0039 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.12	mg/kg	1.353	0.162	mg/kg	0.0000162 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				7.9	mg/kg	2.976	23.512	mg/kg	0.00235 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				14	mg/kg	2.774	38.838	mg/kg	0.00388 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				75	mg/kg		75	mg/kg	0.0075 %		
			TPH									
14	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
15	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
16	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
17	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
18	 cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.3	mg/kg	1.884	0.565	mg/kg	0.0000565 %			
		006-007-00-5											
19	 pH			PH	11	pH		11	pH	11pH			
20	 naphthalene				0.59	mg/kg		0.59	mg/kg	0.000059 %			
		601-052-00-2	202-049-5	91-20-3									
21	 acenaphthylene				0.08	mg/kg		0.08	mg/kg	0.000008 %			
			205-917-1	208-96-8									
22	 acenaphthene				0.5	mg/kg		0.5	mg/kg	0.00005 %			
			201-469-6	83-32-9									
23	 fluorene				0.46	mg/kg		0.46	mg/kg	0.000046 %			
			201-695-5	86-73-7									
24	 phenanthrene				2.9	mg/kg		2.9	mg/kg	0.00029 %			
			201-581-5	85-01-8									
25	 anthracene				1	mg/kg		1	mg/kg	0.0001 %			
			204-371-1	120-12-7									
26	 fluoranthene				3.6	mg/kg		3.6	mg/kg	0.00036 %			
			205-912-4	206-44-0									
27	 pyrene				2.9	mg/kg		2.9	mg/kg	0.00029 %			
			204-927-3	129-00-0									
28	 benzo[a]anthracene				1.5	mg/kg		1.5	mg/kg	0.00015 %			
		601-033-00-9	200-280-6	56-55-3									
29	 chrysene				1.4	mg/kg		1.4	mg/kg	0.00014 %			
		601-048-00-0	205-923-4	218-01-9									
30	 benzo[b]fluoranthene				1.8	mg/kg		1.8	mg/kg	0.00018 %			
		601-034-00-4	205-911-9	205-99-2									
31	 benzo[k]fluoranthene				0.76	mg/kg		0.76	mg/kg	0.000076 %			
		601-036-00-5	205-916-6	207-08-9									
32	 benzo[a]pyrene; benzo[def]chrysene				1.5	mg/kg		1.5	mg/kg	0.00015 %			
		601-032-00-3	200-028-5	50-32-8									
33	 indeno[123-cd]pyrene				0.56	mg/kg		0.56	mg/kg	0.000056 %			
			205-893-2	193-39-5									
34	 dibenz[a,h]anthracene				0.17	mg/kg		0.17	mg/kg	0.000017 %			
		601-041-00-2	200-181-8	53-70-3									
35	 benzo[ghi]perylene				0.65	mg/kg		0.65	mg/kg	0.000065 %			
			205-883-8	191-24-2									
36	 phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD	
		604-001-00-2	203-632-7	108-95-2									
37	 polychlorobiphenyls; PCB				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
		602-039-00-4	215-648-1	1336-36-3									
Total:											0.026 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0075%)

Classification of sample: WS01[4]


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

Sample details

Sample name:	LoW Code:
WS01[4]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.9	mg/kg	1.197	2.274	mg/kg	0.000227 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				14	mg/kg	1.32	18.485	mg/kg	0.00185 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.2	mg/kg	2.775	3.33	mg/kg	0.000333 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				2.6	mg/kg	3.22	8.372	mg/kg	0.000837 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.4	mg/kg	1.142	0.457	mg/kg	0.0000457 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22	mg/kg	1.462	32.154	mg/kg	0.00322 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				90	mg/kg	1.126	101.33	mg/kg	0.0101 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	52	mg/kg	1.56	81.11	mg/kg	0.0052 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.52	mg/kg	1.353	0.704	mg/kg	0.0000704 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				16	mg/kg	2.976	47.62	mg/kg	0.00476 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				1	mg/kg	2.554	2.554	mg/kg	0.000255 %		
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				36	mg/kg	2.774	99.869	mg/kg	0.00999 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				110	mg/kg		110	mg/kg	0.011 %		
			TPH									
14	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
15	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
16	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
17	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
18	 cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }					1.1 mg/kg	1.884		2.072 mg/kg	0.000207 %			
		006-007-00-5											
19	 pH					8.1 pH			8.1 pH	8.1 pH			
				PH									
20		naphthalene				<0.03 mg/kg			<0.03 mg/kg	<0.000003 %		<LOD	
		601-052-00-2	202-049-5	91-20-3									
21	 acenaphthylene					<0.03 mg/kg			<0.03 mg/kg	<0.000003 %		<LOD	
			205-917-1	208-96-8									
22	 acenaphthene					<0.03 mg/kg			<0.03 mg/kg	<0.000003 %		<LOD	
			201-469-6	83-32-9									
23	 fluorene					<0.03 mg/kg			<0.03 mg/kg	<0.000003 %		<LOD	
			201-695-5	86-73-7									
24	 phenanthrene					0.1 mg/kg			0.1 mg/kg	0.00001 %			
			201-581-5	85-01-8									
25	 anthracene					<0.03 mg/kg			<0.03 mg/kg	<0.000003 %		<LOD	
			204-371-1	120-12-7									
26	 fluoranthene					0.22 mg/kg			0.22 mg/kg	0.000022 %			
			205-912-4	206-44-0									
27	 pyrene					0.2 mg/kg			0.2 mg/kg	0.00002 %			
			204-927-3	129-00-0									
28		benzo[a]anthracene				0.09 mg/kg			0.09 mg/kg	0.000009 %			
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				0.12 mg/kg			0.12 mg/kg	0.000012 %			
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				0.14 mg/kg			0.14 mg/kg	0.000014 %			
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.06 mg/kg			0.06 mg/kg	0.000006 %			
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.09 mg/kg			0.09 mg/kg	0.000009 %			
		601-032-00-3	200-028-5	50-32-8									
33	 indeno[123-cd]pyrene					<0.03 mg/kg			<0.03 mg/kg	<0.000003 %		<LOD	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.03 mg/kg			<0.03 mg/kg	<0.000003 %		<LOD	
		601-041-00-2	200-181-8	53-70-3									
35	 benzo[ghi]perylene					<0.03 mg/kg			<0.03 mg/kg	<0.000003 %		<LOD	
			205-883-8	191-24-2									
36		phenol				0.3 mg/kg			0.3 mg/kg	0.00003 %			
		604-001-00-2	203-632-7	108-95-2									
Total:											0.0483 %		

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
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.011%)

Classification of sample: WS03


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

Sample details

Sample name:	LoW Code:
WS03	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.5	mg/kg	1.197	1.796	mg/kg	0.00018 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				6	mg/kg	1.32	7.922	mg/kg	0.000792 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1	mg/kg	2.775	2.775	mg/kg	0.000278 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				4	mg/kg	3.22	12.88	mg/kg	0.00129 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12	mg/kg	1.462	17.539	mg/kg	0.00175 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				18	mg/kg	1.126	20.266	mg/kg	0.00203 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	38	mg/kg	1.56	59.273	mg/kg	0.0038 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				21	mg/kg	2.976	62.502	mg/kg	0.00625 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				21	mg/kg	2.774	58.257	mg/kg	0.00583 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				73	mg/kg		73	mg/kg	0.0073 %		
			TPH									
14	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 }				0.1	mg/kg	1.884	0.188	mg/kg	0.0000188 %		
	006-007-00-5											
15	pH				7.7	pH		7.7	pH	7.7 pH		
			PH									
16	phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0297 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0073%)

Classification of sample: WS03[2]


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

Sample details

Sample name:	LoW Code:
WS03[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				4 mg/kg	1.197	4.788 mg/kg	0.000479 %		
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				7.1 mg/kg	1.32	9.374 mg/kg	0.000937 %		
	033-003-00-0	215-481-4	1327-53-3							
3	beryllium { beryllium oxide }				1.5 mg/kg	2.775	4.163 mg/kg	0.000416 %		
	004-003-00-8	215-133-1	1304-56-9							
4	boron { diboron trioxide; boric oxide }				3.7 mg/kg	3.22	11.914 mg/kg	0.00119 %		
	005-008-00-8	215-125-8	1303-86-2							
5	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13 mg/kg	1.462	19 mg/kg	0.0019 %		
		215-160-9	1308-38-9							
7	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	20.266 mg/kg	0.00203 %		
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	24 mg/kg	1.56	37.436 mg/kg	0.0024 %		
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel chromate }				30 mg/kg	2.976	89.288 mg/kg	0.00893 %		
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { nickel selenate }				<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5							
12	zinc { zinc chromate }				35 mg/kg	2.774	97.095 mg/kg	0.00971 %		
	024-007-00-3	236-878-9	13530-65-9							
13	TPH (C6 to C40) petroleum group				130 mg/kg		130 mg/kg	0.013 %		
			TPH							
14	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 }				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
	006-007-00-5									
15	pH				6.9 pH		6.9 pH	6.9 pH		
			PH							
16	phenol				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.0412 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.013%)

Classification of sample: WS03[3]


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

Sample details

Sample name:	LoW Code:
WS03[3]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.8	mg/kg	1.197	2.155	mg/kg	0.000215 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				18	mg/kg	1.32	23.766	mg/kg	0.00238 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.5	mg/kg	2.775	4.163	mg/kg	0.000416 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				2	mg/kg	3.22	6.44	mg/kg	0.000644 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15	mg/kg	1.462	21.923	mg/kg	0.00219 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				47	mg/kg	1.126	52.917	mg/kg	0.00529 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	46	mg/kg	1.56	71.751	mg/kg	0.0046 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.16	mg/kg	1.353	0.217	mg/kg	0.0000217 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				26	mg/kg	2.976	77.383	mg/kg	0.00774 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				0.7	mg/kg	2.554	1.788	mg/kg	0.000179 %		
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				30	mg/kg	2.774	83.224	mg/kg	0.00832 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				86	mg/kg		86	mg/kg	0.0086 %		
			TPH									
14	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 }				0.7	mg/kg	1.884	1.319	mg/kg	0.000132 %		
	006-007-00-5											
15	pH				8.3	pH		8.3	pH	8.3 pH		
			PH									
16	phenol				0.4	mg/kg		0.4	mg/kg	0.00004 %		
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0408 %		

Key

	User supplied data
■	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

CLP: Note 1 Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0086%)

Classification of sample: WS03[4]


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

Sample details

Sample name:	LoW Code:
WS03[4]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	antimony { antimony trioxide }				7.2 mg/kg	1.197	8.619 mg/kg	0.000862 %			
	051-005-00-X	215-175-0	1309-64-4								
2	arsenic { arsenic trioxide }				25 mg/kg	1.32	33.008 mg/kg	0.0033 %			
	033-003-00-0	215-481-4	1327-53-3								
3	beryllium { beryllium oxide }				1.9 mg/kg	2.775	5.273 mg/kg	0.000527 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { diboron trioxide; boric oxide }				4.9 mg/kg	3.22	15.777 mg/kg	0.00158 %			
	005-008-00-8	215-125-8	1303-86-2								
5	cadmium { cadmium oxide }				0.3 mg/kg	1.142	0.343 mg/kg	0.0000343 %			
	048-002-00-0	215-146-2	1306-19-0								
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18 mg/kg	1.462	26.308 mg/kg	0.00263 %			
		215-160-9	1308-38-9								
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %			<LOD
	024-017-00-8										
8	copper { dicopper oxide; copper (I) oxide }				63 mg/kg	1.126	70.931 mg/kg	0.00709 %			
	029-002-00-X	215-270-7	1317-39-1								
9	lead { lead chromate }			1	430 mg/kg	1.56	670.721 mg/kg	0.043 %			
	082-004-00-2	231-846-0	7758-97-6								
10	mercury { mercury dichloride }				0.33 mg/kg	1.353	0.447 mg/kg	0.0000447 %			
	080-010-00-X	231-299-8	7487-94-7								
11	nickel { nickel chromate }				29 mg/kg	2.976	86.312 mg/kg	0.00863 %			
	028-035-00-7	238-766-5	14721-18-7								
12	selenium { nickel selenate }				1 mg/kg	2.554	2.554 mg/kg	0.000255 %			
	028-031-00-5	239-125-2	15060-62-5								
13	zinc { zinc chromate }				34 mg/kg	2.774	94.321 mg/kg	0.00943 %			
	024-007-00-3	236-878-9	13530-65-9								
14	TPH (C6 to C40) petroleum group		TPH		160 mg/kg		160 mg/kg	0.016 %			
15	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
16	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
18	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				0.4 mg/kg	1.884	0.754 mg/kg	0.0000754 %			
20	pH PH				8 pH		8 pH	8pH			
21	naphthalene 601-052-00-2	202-049-5	91-20-3		0.03 mg/kg		0.03 mg/kg	0.000003 %			
22	acenaphthylene 205-917-1	208-96-8			0.05 mg/kg		0.05 mg/kg	0.000005 %			
23	acenaphthene 201-469-6	83-32-9			<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
24	fluorene 201-695-5	86-73-7			0.03 mg/kg		0.03 mg/kg	0.000003 %			
25	phenanthrene 201-581-5	85-01-8			0.57 mg/kg		0.57 mg/kg	0.000057 %			
26	anthracene 204-371-1	120-12-7			0.15 mg/kg		0.15 mg/kg	0.000015 %			
27	fluoranthene 205-912-4	206-44-0			1.3 mg/kg		1.3 mg/kg	0.00013 %			
28	pyrene 204-927-3	129-00-0			1.1 mg/kg		1.1 mg/kg	0.00011 %			
29	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.57 mg/kg		0.57 mg/kg	0.000057 %			
30	chrysene 601-048-00-0	205-923-4	218-01-9		0.62 mg/kg		0.62 mg/kg	0.000062 %			
31	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.67 mg/kg		0.67 mg/kg	0.000067 %			
32	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.28 mg/kg		0.28 mg/kg	0.000028 %			
33	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.45 mg/kg		0.45 mg/kg	0.000045 %			
34	indeno[123-cd]pyrene 205-893-2	193-39-5			0.24 mg/kg		0.24 mg/kg	0.000024 %			
35	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
36	benzo[ghi]perylene 205-883-8	191-24-2			0.25 mg/kg		0.25 mg/kg	0.000025 %			
37	phenol 604-001-00-2	203-632-7	108-95-2		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<LOD
Total:									0.0944 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.016%)

Classification of sample: WS04


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

Sample details

Sample name:	LoW Code:
WS04	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.5	mg/kg	1.197	1.796	mg/kg	0.00018 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				13	mg/kg	1.32	17.164	mg/kg	0.00172 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.1	mg/kg	2.775	3.053	mg/kg	0.000305 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				4.3	mg/kg	3.22	13.845	mg/kg	0.00138 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16	mg/kg	1.462	23.385	mg/kg	0.00234 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				34	mg/kg	1.126	38.28	mg/kg	0.00383 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	41	mg/kg	1.56	63.952	mg/kg	0.0041 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.09	mg/kg	1.353	0.122	mg/kg	0.0000122 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				26	mg/kg	2.976	77.383	mg/kg	0.00774 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				0.9	mg/kg	2.554	2.298	mg/kg	0.00023 %		
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				26	mg/kg	2.774	72.128	mg/kg	0.00721 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				74	mg/kg		74	mg/kg	0.0074 %		
			TPH									
14	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 }				0.4	mg/kg	1.884	0.754	mg/kg	0.0000754 %		
	006-007-00-5											
15	pH				7.9	pH		7.9	pH	7.9 pH		
			PH									
16	phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
Total:										0.0366 %		

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
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0074%)

Classification of sample: WS04[2]


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

Sample details

Sample name:	LoW Code:
WS04[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				1.6	mg/kg	1.197	1.915	mg/kg	0.000192 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				16	mg/kg	1.32	21.125	mg/kg	0.00211 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.3	mg/kg	2.775	3.608	mg/kg	0.000361 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				2.9	mg/kg	3.22	9.338	mg/kg	0.000934 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16	mg/kg	1.462	23.385	mg/kg	0.00234 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				51	mg/kg	1.126	57.42	mg/kg	0.00574 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	60	mg/kg	1.56	93.589	mg/kg	0.006 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.13	mg/kg	1.353	0.176	mg/kg	0.0000176 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				24	mg/kg	2.976	71.43	mg/kg	0.00714 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				33	mg/kg	2.774	91.547	mg/kg	0.00915 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				86	mg/kg		86	mg/kg	0.0086 %		
			TPH									
14	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 }				0.7	mg/kg	1.884	1.319	mg/kg	0.000132 %		
	006-007-00-5											
15	pH				8.2	pH		8.2	pH	8.2 pH		
			PH									
16	phenol				0.5	mg/kg		0.5	mg/kg	0.00005 %		
	604-001-00-2	203-632-7	108-95-2									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
17	polychlorobiphenyls; PCB					<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3								
Total:									0.0429 %		

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
ND	Not detected
CLP: Note 1 Only the metal concentration has been used for classification	

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0086%)

Classification of sample: WS04[3]


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

Sample details

Sample name:	LoW Code:
WS04[3]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.7	mg/kg	1.197	3.232	mg/kg	0.000323 %		
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				26	mg/kg	1.32	34.328	mg/kg	0.00343 %		
	033-003-00-0	215-481-4	1327-53-3									
3	beryllium { beryllium oxide }				1.6	mg/kg	2.775	4.441	mg/kg	0.000444 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				4.7	mg/kg	3.22	15.133	mg/kg	0.00151 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17	mg/kg	1.462	24.846	mg/kg	0.00248 %		
		215-160-9	1308-38-9									
7	copper { dicopper oxide; copper (I) oxide }				59	mg/kg	1.126	66.427	mg/kg	0.00664 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	250	mg/kg	1.56	389.954	mg/kg	0.025 %		
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.16	mg/kg	1.353	0.217	mg/kg	0.0000217 %		
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				45	mg/kg	2.976	133.932	mg/kg	0.0134 %		
	028-035-00-7	238-766-5	14721-18-7									
11	selenium { nickel selenate }				0.5	mg/kg	2.554	1.277	mg/kg	0.000128 %		
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc chromate }				30	mg/kg	2.774	83.224	mg/kg	0.00832 %		
	024-007-00-3	236-878-9	13530-65-9									
13	TPH (C6 to C40) petroleum group				100	mg/kg		100	mg/kg	0.01 %		
			TPH									
14	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
15	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
16	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
17	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
18	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.2	mg/kg	1.884	0.377	mg/kg	0.0000377 %		
	006-007-00-5											
19	pH				7.9	pH		7.9	pH	7.9 pH		
			PH									
20	naphthalene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
	601-052-00-2	202-049-5	91-20-3									
21	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8									
22	acenaphthene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		201-469-6	83-32-9									
23	fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		201-695-5	86-73-7									
24	phenanthrene				0.35	mg/kg		0.35	mg/kg	0.000035 %		
		201-581-5	85-01-8									
25	anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7									
26	fluoranthene				0.39	mg/kg		0.39	mg/kg	0.000039 %		
		205-912-4	206-44-0									
27	pyrene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
		204-927-3	129-00-0									
28	benzo[a]anthracene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
	601-033-00-9	200-280-6	56-55-3									
29	chrysene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
	601-048-00-0	205-923-4	218-01-9									
30	benzo[b]fluoranthene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
	601-034-00-4	205-911-9	205-99-2									
31	benzo[k]fluoranthene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
	601-036-00-5	205-916-6	207-08-9									
32	benzo[a]pyrene; benzo[def]chrysene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8									
33	indeno[123-cd]pyrene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		205-893-2	193-39-5									
34	dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
35	benzo[ghi]perylene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		205-883-8	191-24-2									
36	phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
37	polychlorobiphenyls; PCB				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3									
Total:										0.072 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because At this concentration TPH is sufficiently dilute that combustion is unlikely

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.01%)

Appendix A: Classifier defined and non GB MCL determinands

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

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

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

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

Description/Comments:

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

Reason for additional Hazards Statement(s):

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

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

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

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

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

Reason for additional Hazards Statement(s):

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

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

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 06 Aug 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 06 Aug 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

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

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

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

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

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

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

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

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

GB MCL index number: 602-039-00-4
 Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans; POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
 Additional Hazard Statement(s): Carc. 1A; H350
 Reason for additional Hazards Statement(s):
 20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings (edit as required)

arsenic {arsenic trioxide}

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

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics (edit as required)

boron {diboron trioxide; boric oxide}

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

cadmium {cadmium oxide}

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

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

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

copper {dicopper oxide; copper (I) oxide}

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

lead {lead chromate}

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

mercury {mercury dichloride}

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

nickel {nickel chromate}

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

selenium {nickel selenate}

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

zinc {zinc chromate}

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

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

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

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

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

Appendix C: Version

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

HazWasteOnline Classification Engine Version: 2022.192.5237.9831 (11 Jul 2022)

HazWasteOnline Database: 2022.192.5237.9831 (11 Jul 2022)

This classification utilises the following guidance and legislation:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)
Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

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

GB MCL List - version 1.1 of 09 June 2021

Appendix B

South Yorkshire Mining Advisory Service report

BARNSELY
Metropolitan Borough Council

FAO: Michael Lewis

Your Ref: B3.088

Ext: 2689

Subject: PRINCIPAL BRIDGE INSPECTION B3.088 OLD MILL LANE BRIDGE, BARNSELY.

A principal bridge inspection is to be undertaken at Old Mill Lane Bridge, Barnsley. A mining/mineral report has been requested.

Strata	Middle coal measures sandstone overlain by alluvium.
Faults	The position of a Geological fault is indicated 70m south of the bridge.
Seam Outcrop	None nearby.

Opencast/Quarry	None recorded
Shallow	None recorded. The shallowest coal seam is likely to be the Kents Thin. The risk of unrecorded mine workings being present is considered to be LOW.
Deep Coal	Mining has taken place in several seams of coal. The most recent workings were undertaken in the 1960's.
Mine Entries	None

Made ground/landfill is recorded as being present in adjacent areas.

CONCLUSION:

The location of the bridge can be regarded as stable as it is remote from the active coalfield.

THIS REPORT IS BASED ON AND LIMITED TO THE RECORDS IN THE POSSESSION OF SYMAS AT THE TIME THE ENQUIRY IS ANSWERED.

Copyright in this mineral stability report belongs to SYMAS. All rights are reserved and unauthorised use is prohibited. Copyright is not transferred to external parties by possession of this report, however, those for whom the report is compiled have the right to use it.

Report prepared by P James 29th January 2015



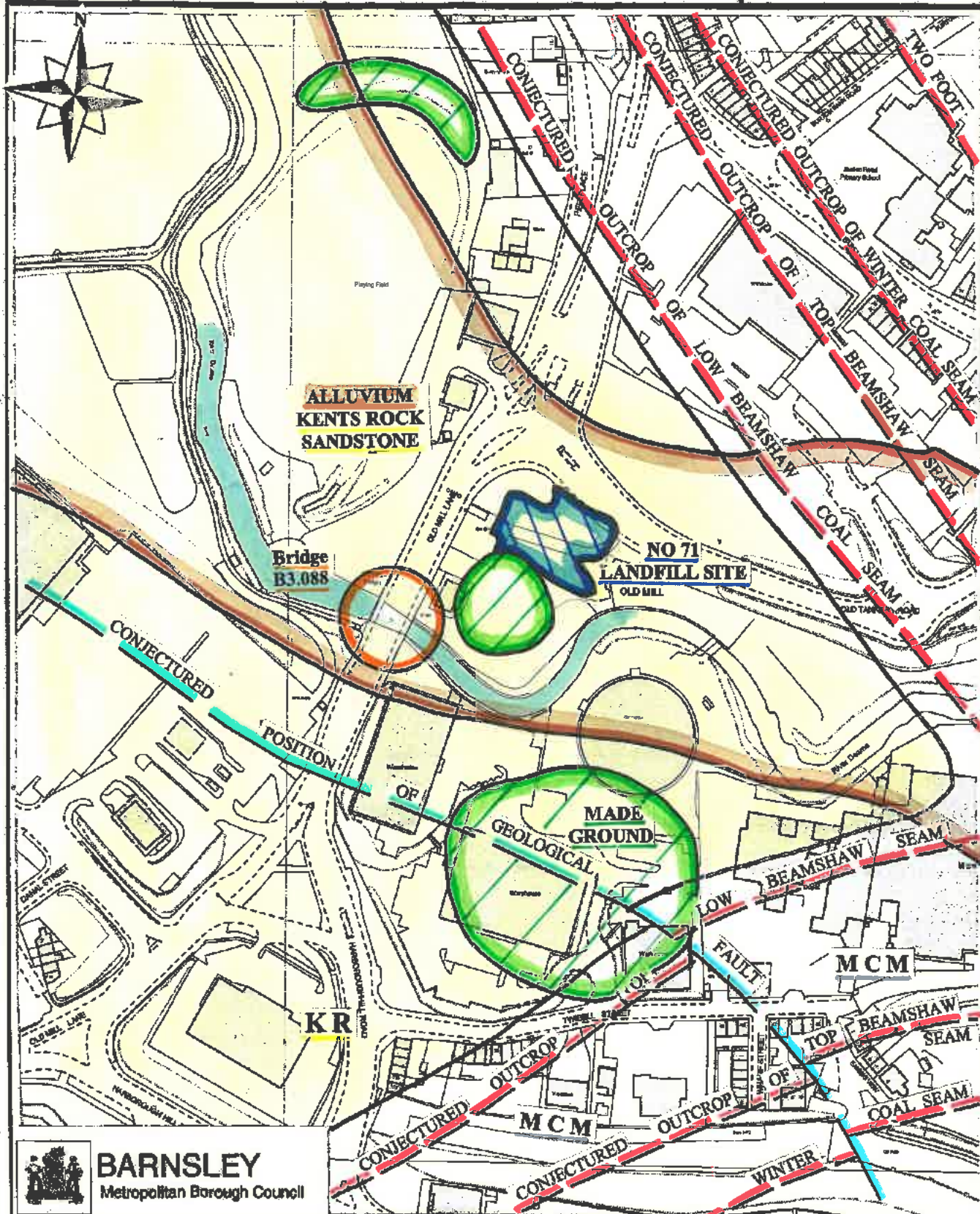
Principal Mining Engineer.

Enc.

DRAWING NO.

PRINCIPAL BRIDGE INSPECTIONS
B3.088 OLD MILL LANE BRIDGE, BARNSELY

**M4146B/
B3.088**



BARNESLEY
Metropolitan Borough Council

SCALE

1:2500

DATE _____

21.1.15

**SOUTH YORKSHIRE MINING
ADVISORY SERVICE**

O.S. REFERENCE

SE 3507

DRAWN BY

AS

CHECKED BY

HECKED BY

P. JAMES BSc (Hons).
PRINCIPAL MINING ENGINEER

Appendix C

Verification Requirements for Cover Systems



VERIFICATION REQUIREMENTS FOR COVER SYSTEMS

Technical Guidance for
Developers,
Landowners and
Consultants



**Yorkshire and Lincolnshire
Pollution Advisory Group**

Version 4.1 – June 2021

The purpose of this guidance is to promote consistency and good practice for development on land affected by contamination. The Local Authorities in Yorkshire, Lincolnshire, the North East of England, East Anglia, Greater Manchester and St Helens who have adopted this guidance are shown below:



Contents

Introduction	1
The Process of Verification	1
Overview Flowchart	2
Key Points	3
KP1: Source of Material	3
KP2: Characterisation of Material	3
KP3: Suitability of Material	5
KP5: Verification of Required Depth	6
KP6: Reporting	6
Appendix 1a – Sampling & Testing Matrix	8
Appendix 1b – Questions to Ask Your Soil Supplier Relating to Soil Quality	9
Appendix 2 – Checklist for Verification Reports	10
Appendix 3 – Examples of Good Quality Photographs	11

Disclaimer

This guidance is intended to serve as an informative and helpful source of advice. YALPAG will review this guidance every three years, but readers must note that legislation, guidance and practical methods are inevitably subject to change and therefore should be aware of current UK policy and best practice. This note should be read in conjunction with prevailing legislation and guidance, as amended, whether mentioned here or not. Where legislation and documents are summarised this is for general advice and convenience, and must not be relied upon as a comprehensive or authoritative interpretation. Ultimately it is the responsibility of the person/company involved in the development or assessment of land to apply up-to-date working practices to determine the contamination status of a site and the remediation and verification requirements.

Acknowledgments

YALPAG would like to thank North Lincolnshire Council, Leeds City Council, City of Bradford Metropolitan District Council, Barnsley Metropolitan Borough Council, Rotherham Metropolitan Borough Council, Wakefield Council, and Tameside Metropolitan Borough Council, for producing this guidance.

YALPAG would also like to acknowledge Liverpool City Council's Contaminated Land Team, Coopers Consulting Engineers for allowing us to use their guidance document and photographs and WSP Environmental Ltd for also donating photographs.

Consultation

39 Local Authorities and 6 Environmental Consultants were consulted over a four week period in 2010 during the production of the initial guidance. At that time, consultation comments were considered by the review panel and a number of revisions were made to the guidance to reflect these comments.

49 Local Authorities and 25 Environmental Consultants were consulted in 2021, during the production of this version [4.1] of the guidance. Consultation comments were considered by the review panel and a number of revisions were made to the guidance to reflect these comments.

Introduction

This guidance has been produced to help developers ensure that they can demonstrate that material brought onto a development site for gardens or areas of soft landscaping are suitable for use and do not present harm to people, the environment and/or property. It is intended to improve the quality of reports submitted to Local Authorities on this matter and to give contractors/consultants a point of reference to obtain approval for such work from their client. This guidance does not cover the geotechnical suitability of soils or materials, chemical suitability that does not affect human health e.g. sulphates, or importing soils contaminated with invasive (or injurious) plants.

The verification of cover systems should be an integral part of the remediation project and agreed between developers and regulators at an early stage in the project.

UK guidelines for remediation verification are set out within Land Contamination Risk Management¹ (LCRM) and the document on Verification of Remediation of Land Contamination². This guidance note should be considered as supplementary advice in conjunction with these documents.

This guidance relates to the remediation of land contamination by using cover systems; however, the verification of the quality of imported material is equally important in other situations, such as raising levels for flood prevention or general landscaping works. This guidance could also be used in such instances.

The Process of Verification

Implementation plans for remedial works should always be site specific. Where a cover system and potentially, excavation, is the main remedial method or a component of an overall site remediation, specific goals will need to be set that are linked directly to the risk management strategy for the site in question.

For cover and containment systems, verification will normally depend upon the provision of defensible measurements, observations and records. Critical factors to be considered are:

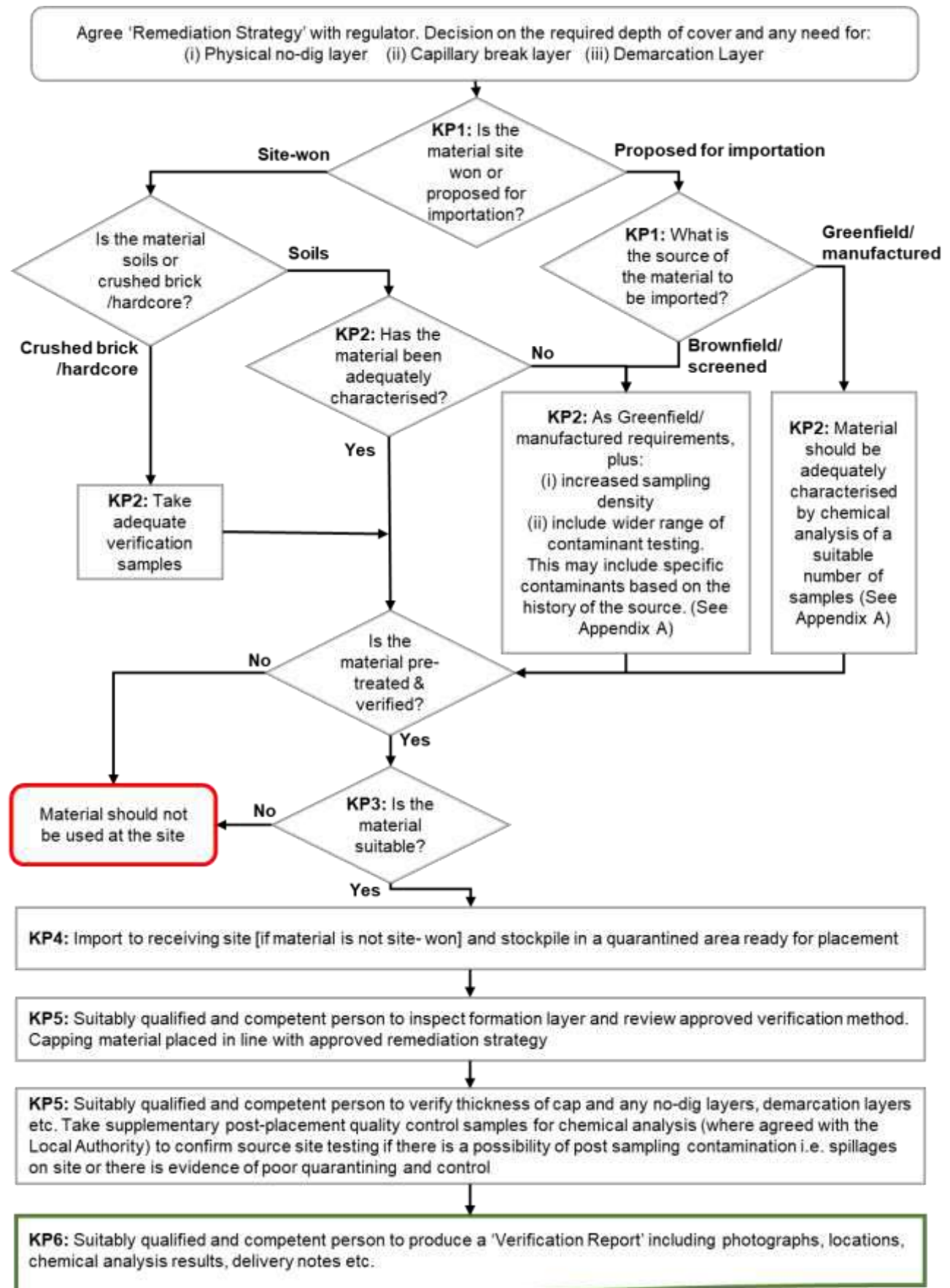
- What should be measured?
- When should they be measured?
- Where measurements need to be taken, what is the appropriate monitoring regime i.e. number and frequency of samples?
- Statistical constraints on sampling.

National Planning Policy Framework (NPPF) states that “planning policies and decisions should ensure that after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990”. The Verification Report is a key document to demonstrate compliance with NPPF, and the responsibility rests with the developer/applicant to submit the required Verification Report to complete the remediation and to discharge any planning conditions.

¹ Land Contamination Risk Management, Environment Agency, Oct 2020

² Verification of Remediation of Land Contamination. Environment Agency, Feb 2010

Overview Flowchart



Key Points

KP1: Source of Material

Material can be sourced from site won material i.e. crushed brick/hardcore or site-won soils from existing open or landscaped areas. In the interest of sustainability, Local Authorities promote the use of such site-won material providing that they are suitable for the intended end use of the site.

Alternatively, material can be sourced from other developments and commercial companies. Dependent on the source of the material it can be classified as either from a 'Greenfield/Manufactured' or 'Brownfield/Screened' source.

Broadly speaking material can be classified as follows:

Greenfield – Where documentary evidence is provided confirming that the source site has not been developed and that no past contaminative uses have occurred. Should evidence not be provided or approved by the Local Authority, please note that the source would be expected to be assessed as though it were a brownfield source.

Manufactured – from a commercial company who manufacture material by mixing or blending mineral soils (subsoil or sand) with an organic amendment (compost). If other soil component sources are used, documentary evidence should be provided confirming that the source site has not been developed and that no past contaminative uses have occurred. Should documentary evidence not be provided or approved by the Local Authority, please note that the source would be expected to be assessed as though it were a brownfield source.

Brownfield – material from a donor site that has previously been developed

Screened – material from a company who deal with skip/demolition waste which is screened for unsuitable material i.e. bricks, wood, plastic etc.

KP2: Characterisation of Material

It is essential that material is suitable for its intended use. Documentary evidence of the source of the material should be provided to the Local Authority. This may include desk study or site investigation reports. A defensible method is required to ensure the verification proposals are site specific and that the level of sampling reflects the need to ensure that imported material are suitable for their intended use.

Due to the diminishing supply of suitable Greenfield topsoil sources it has been found that the chemical quality of Greenfield sources is less reliable in certain areas. As a result the recommended analytical rate for the intended use of the development may vary between Local Authorities [see **Appendix 1a**].

When should this be done?

Sampling of material should be undertaken as early as possible i.e. prior to placement [for site won material] and prior to importation [for imported material]. This is to avoid the costly exercise of re-excavating unsuitable material and the possibility of cross contamination. Where the assessor has confidence that the material is of sufficient quality (i.e. tested by supplier, used previously) it is acceptable to test the material on site. Although, if it is deemed unsuitable it would have to be either removed off site or pre-treated at the cost and time of the developer. It is recommended that some verification samples are also taken once this material has been delivered to site to confirm suitability for use. Soils can become contaminated during transportation or when stockpiled on site.

What about certificates from commercial suppliers?

Where the material is provided by a commercial company, certificates or other industry Quality Protocol compliance i.e. WRAP, DoWCoP, will normally be accepted. This is on the proviso that it: (i) relates to the actual material being imported to the site and the type and amount of analysis is in line with what is prescribed in Appendix 1a; and, (ii) the certificates are less than two months old.

It is recommended that some additional verification samples are taken once this material has been delivered to site. Soils can become contaminated during transportation or when stockpiled on site.

Extreme caution should be given to importing material that has been recycled from demolition or skip waste as they could easily be contaminated e.g. asbestos containing materials. Please refer to “questions you should be asking your supplier” in **Appendix 1b** and include the responses in your report.

British Standard

Imported soils should be as specified in BS 3882:2015 for topsoil and BS8601:2013 for subsoil as ‘suitable for their intended purpose’. Both British Standards relate mostly to nutrient content of topsoil and phytotoxic contamination and they do not consider contaminants that pose a risk specifically to human health. Soils should be tested for contaminants that are considered to pose a risk to human health in addition to those specified in the relevant British Standards to ensure that they are suitable for their intended use.

Initial screening

A visual / olfactory inspection of the material should be carried out by a suitably qualified and competent person to ensure that:

- It is a suitable growing medium;
- It is free from obvious contamination i.e. staining/free product etc.;
- It has not come from areas where Japanese Knotweed or other invasive or injurious plants, as specified by the Environment Agency, are suspected to have been growing;
- It is not odorous (could be considered a statutory nuisance);
- It is free from unsuitable material i.e. bricks, brick ties, timber and glass etc.); and,
- There are no visible signs of asbestos containing material (ACMs).

Testing schedule & number of samples

Chemical testing will normally be required on any materials that are to be used as cover material, even where this includes first generation quarried material. This should be carried out by a suitably qualified and competent person.

Appendix 1a explains in detail the sampling and testing requirements for a typical residential development. These are only guidelines and it may be necessary to deviate away from them depending on local and site-specific factors. It is recommended that the developer discusses any deviation with the Local Authority.

The following criteria sets out the requirements for sampling and testing:

- **Virgin Quarried Material** sampling needs to be 1 or 2 samples depending on the type of stone utilised, to confirm the inert nature of the material. Testing to include standard metals/metalloids (should include as a minimum As, Cd, Cr, CrVI, Cu, Hg, Ni, Pb, Se, Zn).
- **Crushed Hardcore, Stone, Brick (excluding asphalt)** a minimum of 1 sample per 500m³. Testing to include standard metals/metalloids (as above), PAH (16 USEPA speciation), asbestos, total TPH. Any additional analysis dependant on the history of the donor site (e.g. phenol, total cyanide, BTEX, MTBE).
- **Greenfield/ Manufactured Soils** a minimum of 3 samples or, dependent on source and receptor, between 1 per 50m³ and 1 per 250m³. Testing to include standard metals/metalloids (as above), PAH (16 USEPA speciation), asbestos, pH and soil organic matter (SOM) (or calculated from total organic carbon (TOC)).
- **Brownfield/ Screened Soils** a minimum of 6 samples or dependent on source and receptor, between 1 per 50m³ and 1 per 100m³. Standard metals/ metalloids (as above), PAH (16 USEPA speciation), TPH (CWG banded), asbestos, pH and SOM (or calculated from TOC). Any additional analysis dependant on the history of the donor site (e.g. phenol, total cyanide, BTEX, MTBE).

The assessment criteria need to be UK based, e.g. LQM S4ULs, Defra C4SLs or other similarly derived GACs.

KP3: Suitability of Material

Based on the characterisation of material above, the material should be either deemed suitable or unsuitable. Obviously unsuitable material should not be used (unless it is treated to reduce levels of contaminants below agreed target levels i.e. bioremediation – this would have to be agreed and included within the Remediation Strategy) and an alternative source of material should be sought by the developer. If the material is considered suitable it can be imported (if not site won) and stockpiled in a suitably quarantined area [refer to **KP4**].

KP4: Stockpiling & Quarantining of Material

It is essential that the 'suitable' material is either placed in its intended area straight away i.e. soft/landscaped areas or stockpiled in a suitable quarantine area to prevent on-site contamination.

In the event that an assessor finds material has been stored in an unsuitable area, samples should be taken to confirm that no cross contamination has occurred (including a visual/olfactory check of the material). The material should then be suitably quarantined or placed at its intended location immediately.

KP5: Verification of Required Depth

In line with the agreed Remediation Strategy, it is important to establish that the required depth has been achieved and is consistent across the site. There are two main ways to achieve this:

Depth testing in situ – small trial pit excavated to allow measurement of its depth by standardised tape measure or measuring staff.

Topographical surveys – accurate survey of the base and final formation layer height to establish the depth of cover.

Specific Local Authority Policy

Please check with the local Contaminated Land Officer to establish:

- Which type of method for testing depth is accepted; and,
- The number of verification areas per property, plot, landscaped area or garden area (some Local Authorities recommend at least 2 per plot for residential developments).

Important Note: Where demarcation, physical no-dig and capillary break layers exist they should be verified for their thickness and presence during the time of their installation. Details of the demarcation layer should be agreed with the Contaminated Land Officer prior to placement. This will include the design, type and strength of the geotextile separator or visual warning membrane. The verification of depth and confirmation of such layers should be carried out by a suitably qualified and competent person.

KP6: Reporting

The purpose of verification documentation is to provide transparent reasoning why the remediation was required, a methodology about how it was to be undertaken and proof that the specified works have been undertaken and to provide confirmation that the site is “suitable for its intended use”.

The document is utilised not only to satisfy conditions of planning permissions but also is to be kept on record by the Local Authority should queries be raised during the lifetime of the development and to confirm to future purchasers that the site is suitable for use.

National Planning Policy Framework (NPPF) states that “planning policies and decisions should ensure that after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990”. The Verification Report is a key document to demonstrate compliance with NPPF, and the responsibility rests with the developer/applicant to submit the required Verification Report to complete the remediation and to discharge any planning conditions.

It is also essential that other supporting documentation is included within a report carried out by a suitably qualified and competent person e.g. laboratory analysis results, delivery tickets for material, certificates for imported material (or if unavailable, documented evidence of the source of the Greenfield material), trial pit logs etc. A checklist has been included in **Appendix 2** to give an idea on what information should be recorded.

Additionally, any reporting should include details of any measures required to maintain the cover system integrity in the future e.g. successive construction phases (management plans) and longer term (restrictive covenants on title deeds).

Photographic evidence for validating the depth of cover

The Local Authority ideally would recommend the following programme of photographs to be taken of the placement of inert cover:

- Photographs of any stockpiles and quarantine areas
- Proof that the depth of inert cover has been installed
- Proof of the quality of the material to be used as inert cover
- Proof there is a geotextile separator and visual warning membranes if used between the underlying material and suitable for use soils.
- Proof of the method of placement and different layers if appropriate
- Proof of the completed project
- Inclusion of background features which will aid locating the photograph
- Inclusion of site identification boards within the photos which show the date, position taken i.e. corner of plot 3 and the site name.
- Inclusion of photographs of site stockpiles and quarantine areas.

The presence of good quality photographs is essential to prove beyond doubt that the remediation has been done as specified both by method and position, and that the images have been taken from the specific area stated.

Refer to **Appendix 3** for examples of good photographic evidence.

Appendix 1a – Sampling & Testing Matrix

Type	Number of Samples	Testing Schedule	Assessment Criteria
Please note that these guidelines apply to a typical residential development, and relaxation of the guidelines or more stringent requirements may apply dependent on local and site specific factors. Therefore, <u>all parameters need to be agreed with the Local Authority.</u>			
Virgin Quarried Material	1 or 2 depending on the type of stone utilised, to confirm the inert nature of the material.	Standard metals/metalloids (should include as a minimum As, Cd, Cr, CrVI, Cu, Hg, Ni, Pb, Se, Zn)	The assessment criteria need to be UK based, e.g. LQM S4ULs, Defra C4SLs or other similarly derived GACs.
Crushed Hardcore, Stone, Brick (excluding asphalt)	Minimum 1 per 500m ³	Standard metals/metalloids (as above), PAH (16 USEPA speciation), asbestos, total TPH. Any additional analysis dependant on the history of the donor site (e.g. phenol, total cyanide, BTEX, MTBE).	
Greenfield/ Manufactured Soils	Minimum 3 Dependent on source and receptor, between 1 per 50m ³ and 1 per 250m ³	Standard metals/metalloids (as above), PAH (16 USEPA speciation), asbestos, pH and soil organic matter (SOM) (or calculated from total organic carbon (TOC)).	
Brownfield/ Screened Soils	Minimum 6 Dependent on source and receptor, between 1 per 50m ³ and 1 per 100m ³	Standard metals/ metalloids (as above), PAH (16 USEPA speciation), TPH (CWG banded), asbestos, pH and SOM (or calculated from TOC). Any additional analysis dependant on the history of the donor site (e.g. phenol, total cyanide, BTEX, MTBE).	

Appendix 1b – Questions to Ask Your Soil Supplier Relating to Soil Quality

- What is the source of the material (refer to KP1)? If the source is Greenfield, can they provide evidence of this?
- Will all of the material be coming from the same source?
- Are you satisfied that the material is a suitable growing medium for the proposed end use?
- Has the supplier used an appropriate sampling protocol to ensure a representative sample is analysed? What volume of soil is represented by the analysis and does it comply with Appendix 1a?
- Does the testing include analysis of contaminants identified in Appendix 1a?
- Does the laboratory conducting the analysis have UKAS and MCERTS accreditation for the tests they are carrying out?
- Does the material comply with relevant waste regulations?
- Can I have a copy of the whole analysts report and does it include an interpretive section?
- Will the provided certificate be dated within the last 2 months?

Appendix 2 – Checklist for Verification Reports

Example only. Not to be considered as typical minimum requirements. Additional information should be included for non-cover systems aspects of the remediation i.e. gas protection measures etc.

Site Details	
Site Name / location	
Developer name	
Development use	
Plot No / description of landscaped area (inc plan of inspection areas)	
National Grid Reference	
Inspection visit date	
Supporting Evidence	
Description of remediation (as per agreed Remediation Method Statement including depths / thickness checks, topographical readings)	
Material tracking information (including way tickets etc.)	
Name of groundwork's remediation contractor	
Name of supervising environmental consultant	
Site Specific chemical analysis results	
Verification Photographs (inc. remarks)	
Recommendations	
Pass/fail	
If material fails, how will this be managed i.e. removed, treated	
Detail any further remedial works and/or inspection	
Signed off	

Failure to provide any of the above information may prevent planning conditions from being discharged.

Appendix 3 – Examples of Good Quality Photographs



© **Coopers
Consulting
Engineers**

Photograph 1:
Depth check of inert
cover within area of
public open space.
Physical break layer
and topsoil visible.



© **WSP**

Photograph 2:
Depth check of inert
cover with Site &
Location Information
Board.



© **Coopers Consulting Engineers**

Photograph 3:
Depth check of inert cover within areas of front gardens.



© **Coopers Consulting Engineers**

Photograph 4:
Depth check of inert cover within areas of front gardens.



© **Coopers Consulting Engineers**

Photograph 5:
Depth check of inert cover within rear gardens. Taut string line spans across excavation.



© Coopers
Consulting
Engineers

Photograph 6:
Depth check of inert
cover within rear
gardens. Taut string
line spans across
excavation.



© Coopers
Consulting
Engineers

Photograph 7:
Shows the spatial
location of the
verification pit.



© **Coopers Consulting Engineers**

Photograph 8:
Excavation within public open space and verification pit showing the presence of a remediation break layer at the base, a crushed sandstone inert fill overlain by topsoil.



© **Coopers Consulting Engineers**

Photograph 9:
Inert crushed sandstone being delivered. The spatial area of the remediation can be observed from these photographs (old terrace housing).



© **Coopers Consulting Engineers**

Photograph 10: Inert crushed sandstone being delivered with visible remediation break layer. The spatial area of the remediation can be observed from these photographs (traffic lights).



© **Coopers
Consulting
Engineers**

Photograph 11:
Shows the remediation of the rear garden, with a significant depth (1.0m) of inert cover. This photograph has been stitched to form a panoramic photograph and hence there is slight distortion



© **Coopers
Consulting
Engineers**

Photograph 12:
Shows the remediation of the rear garden, with a significant depth (1.0m) of inert cover. Remediation break layer visible at the base of the excavation.