

TECHNICAL NOTE 1

DATE:	09 June 2023	CONFIDENTIALITY:	Confidential
SUBJECT:	Intrusive Ground Investigation – Interim Report		
PROJECT:	70085596 Stanhope Bridge	AUTHOR:	Rebecca Hoyle
CHECKED:	Lydia Evans	APPROVED:	Lydia Evans

1 Introduction

WSP was instructed by Haringey Council to undertake an environmental intrusive investigation at Stanhope Road Bridge, Stanhope Road, Haringey, London, N6 5DE, ('the Site'). It is understood that the on-site bridge is unstable and requires replacement. The aim of the intrusive investigation was to investigate the fill on either side of the bridge for contamination and waste disposal purposes.

This technical summary presents the preliminary findings of the ground investigation undertaken between the 17th and 18th May 2023.

The site location is shown on **Figure 1**, included in **Appendix A**.

General limitations of the assessment are included in **Appendix B**.

2 Background and Site Setting

Site Description & History

The Site is irregular in shape and is centred around a footbridge which crosses Stanhope Road, with two parcels of land, one to the east and one to the west of the bridge. The land to the east and west of the bridge is elevated approximately 5m above the level of Stanhope Road. Two steel supports were noted under the footbridge.

The Site is currently a part of Parkland Walk, a nature reserve and area of public open space. A foot / cycle path runs through the centre of the Site from east to west. It is understood that the Site was historically a railway line. The Site is located within a predominantly residential area.

Historical maps indicate that the Site comprised undeveloped agricultural land from 1864, until a rail line was constructed through the site in the 1870s. Stanhope Road was constructed in approximately 1894. The railway was dismantled by 1974 and was replaced by a footpath prior to 1991.

Geology

Reference to the British Geological Survey (BGS) map 256 of North London (1:50,000 scale Bedrock and Superficial Edition) and the BGS GeoIndex website indicates that the Site is underlain by a bedrock geology comprising the London Clay Formation. The London Clay Formation is underlain sequentially by the Lambeth Group, Thanet Formation and Chalk Group. No superficial deposits are mapped on the Site; however, the Site is located within an area denoted as having 'head propensity' on BGS mapping, which means that there is the potential for quaternary head deposits to be present.

Two British Geological Survey (BGS) borehole logs are available relating to the subject site. These found Made Ground/ Topsoil to 0.40- 0.45 m below ground level (bgl) underlain by the London Clay Formation which was proven to 11.00 m bgl.

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The bridge embankment at the Site is known to be man-made and the thickness of Made Ground deposits beneath this area is considered likely to be up to 5m in depth.

Hydrology & Hydrogeology

The Environment Agency (EA) classifies the units underlying the Site as follows:

- London Clay Formation – Unproductive strata
- Lambeth Group – Secondary A Aquifer
- Thanet Formation – Secondary A Aquifer
- Chalk Group – Principal Aquifer

The Environment Agency does not provide an aquifer classification for Made Ground deposits. Although there is the potential for groundwater to be present within Made Ground deposits, it is considered unlikely to be a continuous groundwater body, but rather localised pockets or perched water that are likely to be recharged via surface infiltration. However, infiltration to embankment soils directly underlying the hard surface areas of the bridge are expected to have been minimal.

There are no records of groundwater abstractions within 2km of the Site.

The Site is not located within an Environment Agency designated Groundwater Source Protection Zone (SPZ) and there is no SPZ located within 2km of the Site.

The closest surface water feature to the Site are ponds associated with Waterlow Park located approximately 1km south-west of the Site.

There are no records of surface water abstractions within 2km of the Site.

3 Preliminary Conceptual Site Model

The preliminary Conceptual Site Model (CSM) is taken from the WSP Preliminary Risk Assessment ref. 70077287-WSP-EGT-B-RP-LE-0002, dated September 2021.

The assessment followed a risk-based approach with the potential environmental risk assessed qualitatively using the ‘source-pathway-receptor’ contaminant linkage concept introduced in the guidance documents (principally the EA’s LCRM guidance) on the practical implementation of the Environmental Protection Act 1990.

Environmental risk can be defined as the combination of the consequence of a harmful effect and the probability of its occurrence. The existence of a contaminant linkage is primarily dependant on site usage and environmental conditions.

The environmental risk assessment has been carried out by identifying and evaluating the significance of the following:

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- Potential sources of contamination: these include any actual or potentially contaminating materials and activities, located either on or in the vicinity of the Site;
- Potential receptors of contamination: these include future land users, activities or persons at the Site; and
- Potential pathways for contamination migration: these are the routes or mechanisms by which contaminants may migrate from the source to the receptor.

Table 1 below provides a summary of the potential sources of contamination that may be present on the Site as well as the likely nature of such sources.

Table 1 – Preliminary Conceptual Site Model

Potential Contaminant Sources	Receptor	Pathways	Comments
<i>On-Site</i>			
Made Ground and Embankment Fill; and Railway Line and Railway Land.	Human Health Current and future Site users; Construction and maintenance workers; and, Third party neighbours.	Dermal contact; Indirect ingestion of contaminants; Inhalation of dust / fibres; and Ground gas / vapour migration.	A large proportion of the Site is occupied by soft landscaping and open ground, therefore there is the potential for direct contact pathways (i.e. dermal contact, ingestion, inhalation) to be present. However, given that Site is an area of public open space, the nature of Site users is considered to be transient. The risk to current and future Site users and third-party is considered to be Low . Ground gas and vapours have the potential to be present, however given the nature of the proposed development works the likelihood for confined spaces, in which ground gases and vapours can accumulate, to be present is minimal. The risk from ground gas is considered to be Low . Construction workers or maintenance workers may come in to contact with contaminated soils/groundwater during ground or maintenance works (e.g. dermal exposure or inhalation of vapours or ground gases). The risk is considered to be Low-Moderate , however these risks should be managed via Health and Safety protocols during the works.
	Flora Plant life	Direct contact with contaminated soils or groundwater.	Given the historical land uses, there is the potential for contaminants to be present within Made Ground deposits on the Site. Additionally, the Site was noted to be vegetated and is designated as a Local

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			Nature Reserve. Therefore, the risk to plant life on the Site is considered to be Low-Moderate .
	Building Fabric and Services; Below ground services; and Building structures.	Direct contact; and Permeation of hydrocarbons through plastic pipes	Given the historical land uses, there is the potential for permeation of hydrocarbons into plastic pipes. Additionally, the Site is underlain by the London Clay Formation, which is known to be sulphate bearing. Therefore, there is a risk to below ground concrete structures from sulphate attack. Given the former land uses at the Site and the underlying geology, the risk is considered to be Low-Moderate.
Off-Site			
Made Ground, Embankment Fill, potentially infilled ponds and brick fields; Milk depot; and, Electrical substation	Human Health Current and future Site users; Construction and maintenance workers; and, Third party neighbours.	Inhalation of windblown dust and asbestos fibres; and Migration of ground gas and volatile vapours	The majority of the areas surrounding the Site are covered with hardstanding, buildings or grass cover, therefore it is considered unlikely that windblown dust and fibres from off-site sources will impact receptors on the Site. The risk to human health receptors from windblown dust and fibres from off-Site is considered to be Low . Ground gas and vapours generated from Made Ground, embankment fill, infilled ponds and brick fields in the areas surrounding the Site may migrate laterally in the subsurface. However, confined spaces for ground gases and vapours to accumulate in are not anticipated to be a part of the proposed development works. Therefore, the risk from ground gases and vapour migrating on to the Site from off-Site sources is considered to be Low .
	Flora Plant life	Direct contact with contaminated soils or groundwater.	Given that the London Clay Formation (unproductive strata) underlies the Site and immediate area surrounding the Site, there is no laterally continuous groundwater body underlying the Site. Therefore, there is no active contamination pathway for contaminants to migrate in groundwater from off-Site

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			sources and impact plant life. The risk is considered to be Very Low .
	Building Fabric and Services Below ground services; and Building structures.	Lateral migration of contaminants via impacted groundwater	Given that the London Clay Formation (unproductive strata) underlies the Site and immediate area surrounding the Site, there is no laterally continuous groundwater body underlying the Site. Therefore, there is no active contamination pathway for contaminants to migrate in groundwater from off-Site sources and impact building fabric and services. The risk is considered to be Very Low.

4 Summary of ground investigation

Site Works

Ground investigation works were undertaken within accessible areas of the Site on the 18 and 19 May 2023. The works comprised:

- 5 No. Windowless Boreholes to 5.00 m bgl; and,
- Collection of soil samples for subsequent analysis.

The exploratory hole location plan is included within **Appendix A**. The exploratory hole logs are included in **Appendix C**.

Ground Conditions Summary

A detailed account of ground conditions can be found listed below in **Table 2**. All of the boreholes were completed successfully to the target depth of 5.00 m bgl.

Table 2: Summary of Strata Encountered During the Site Investigation

Stratum Name	Depth to Base of Strata (m bgl) *	Elevation of Base of Strata (m AOD) *	Thickness (m) *	Typical Description
Topsoil	0.25 – 0.50	74.492 – 72.386	0.25 – 0.50	Typically, black organic very gravelly fine to coarse sand with frequent rootlets and roots. Gravel is angular to subrounded fine to coarse of brick, flint, slag and coal.

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Made Ground	2.40 – (4.90)	70.533 – 69.377	2.00 – (4.60)	Typically, red sandy subangular to very angular fine and medium gravel of brick. Sand is comprised of weathered brick
Relict Topsoil	4.10 – (5.00)	70.642 - 69.277	0.25 - Not Proven (0.10) – 0.35	Typically, dark brown organic clayey fine to coarse sand with frequent rootlets
London Clay Formation	(5.00)	67.886 - 69.742	Not Proven (0.90)- Not Proven (2.60)	Typically, soft pale brownish grey slightly sandy clay.

* Brackets indicate maximum unproven depth / thickness and the minimum elevation.

■ Made Ground

Made Ground was recovered at all locations to depths between 2.40 m and >5.00 m bgl. The base of the Made Ground was not proven in WS03.

The Made Ground deposits were variable and comprised both cohesive and granular materials. Cohesive material comprised reworked clay and granular material predominantly comprised brick.

Gravel constituents comprised fine to coarse angular bricks and flint. Cobbles of brick were also recorded.

■ Relict Topsoil

The Made Ground, was underlain by relict topsoil deposits in three locations (WS03-WS05). In all instances, the deposits were encountered as sandy clay with rootlets.

■ London Clay Formation

The Made Ground and Relict Topsoil were underlain by the London Clay Formation, which was encountered in three locations where the base of the Made Ground/ Relict topsoil was proven. The formation comprises clay that may be sandy and/or gravelly; the gravel fraction consists of flints.

Groundwater

Groundwater was encountered in none of the locations during the investigation.

Visual / Olfactory Evidence of Contamination

No visual / olfactory observations of contamination were found during the work.

5 Human Health Risk Assessment

Rationale

In the United Kingdom, the presence of contamination on a site is generally only of concern if an actual or potentially unacceptable risk exists. Legislation and guidance on the assessment of contaminated sites, consistent with the European Union best practice, acknowledges the need for a tiered risk-based approach.

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This report represents a Generic Quantitative Risk Assessment (GQRA), being a comparison of site contaminant levels against highly conservative standards and compliance criteria including an assessment of the risk using the source-pathway-receptor model.

WSP has derived a set of Generic Assessment Criteria (GAC) for the CLEA generic land use scenarios using the CLEA Workbook v1.071 Excel modelling tool.

Further details on the assumptions and methodologies adopted by WSP are presented in **Appendix D**.

The screening criteria for a Parks Public Open Space land use has been selected for the interpretation of the soil laboratory results under the understanding that the Site is to continue as a public footpath.

A Soil Organic Content (SOM) of 1% has been used for the screening process, as the most conservative value for this assessment.

Soil Contamination

Eight soil samples were collected and tested for a range of contaminants and an additional two soil samples were scheduled for Waste Acceptance Criteria (WAC) testing. The testing results were screened against Generic Assessment Criteria (GACs) for a Parks Public Open Space land use.

None of the eight samples screened were found to be in exceedance of the relevant GAC for Human Health criteria for the current Parks Public Open Space land use.

A copy of the laboratory certificates is included in **Appendix E** and the soil screening tables in **Appendix D**.

6 Preliminary Waste Classification

The results of the Waste Acceptance Criteria testing for the two soil samples analysed indicated that for waste disposal the material could fall within the inert classification.

However, a HazWasteOnline™ preliminary assessment has been completed based on the chemical analytical results of the total soil concentrations from the other eight soil samples to inform potential off-site disposal options.

For waste classification purposes, the HazWasteOnline™ preliminary assessment indicates that all of the tested soil samples from across the Site are classified as 'Non-Hazardous' for disposal to landfill.

Asbestos fibres were not detected in any of the analysed soil samples.

It is recommended that to facilitate the disposal of Site materials, laboratory data should be provided to the waste receiver to confirm the final classification. The responsibility for classification of waste for disposal lies with the 'waste producer' and it will be their responsibility to agree the final classification and acceptability of the material for disposal with the receiving landfill.

A copy of the HazWasteOnline™ report is presented in **Appendix F**.

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7 Conclusions

A revised conceptual site model will be provided in the final Generic Quantitative Risk Assessment (GQRA) report. However, it is considered that no relevant pollutant linkages have been identified and thus the findings of the assessment indicate the soils underlying the Site do not currently pose a long-term exposure risk to current Site users and future Site users.

The risk to construction / maintenance workers and third-party neighbours during any future below ground works is considered to be **Low** and would be appropriately managed through the risk assessment and control measures set out within CDM 2015.

No visual and / or olfactory contamination was observed in any of the exploratory hole locations during the intrusive investigation.

For waste classification purposes, the soils requiring removal from Site are indicated to all be ‘Non-Hazardous’ for disposal to landfill. This classification will need to be confirmed with the operator of the receiving landfill prior to removal from Site.

No further site investigation or remediation work is considered necessary for the Site; however the GQRA report will provide information on a discovery strategy should unexpected contamination be identified during subsequent demolition works.

Appendix A

DRAWINGS







Appendix B

LIMITATIONS



REPORT LIMITATIONS - GROUND AND WATER

GENERAL

1. WSP UK Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.
2. Unless explicitly agreed otherwise, in writing, this report has been prepared under WSP UK Limited standard Terms and Conditions as included within our proposal to the Client.
3. Project specific appointment documents may be agreed at our discretion and a charge may be levied for both the time to review and finalise appointments documents and also for associated changes to the appointment terms. WSP UK Limited reserves the right to amend the fee should any changes to the appointment terms create an increase risk to WSP UK Limited.
4. The report needs to be considered in the light of the WSP UK Limited proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

PHASE 1 GEO ENVIRONMENTAL AND PRELIMINARY RISK ASSESSMENTS

Coverage: *This section covers reports with the following titles or combination of titles: phase 1; desk top study; geo environmental assessment; development appraisal; preliminary environmental risk assessment; constraints report; due diligence report; geotechnical development review; environmental statement; environmental chapter; project scope summary report (PSSR), program environmental impact report (PEIR), geotechnical development risk register; and, baseline environmental assessment.*

5. The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects responses may not have been received from all parties. WSP UK Limited cannot be held responsible for any disclosures that are provided post production of our report and will not automatically update our report.
6. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, WSP UK Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.
7. It should be noted that any risks identified in this report are perceived risks based on the information reviewed. Actual risks can only be assessed following intrusive investigations of the site.
8. WSP UK Limited does not warrant work / data undertaken / provided by others.

REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

INTRUSIVE INVESTIGATION REPORTS

Coverage: *The following report titles (or combination) may cover this category of work: geo environmental site investigation; geotechnical assessment; GIR (Ground Investigation reports); preliminary environmental and geotechnical risk assessment; and, geotechnical risk register.*

9. The investigation has been undertaken to provide information concerning either:
 - i. The type and degree of contamination present at the site in order to allow a generic quantitative risk assessment to be undertaken; or
 - ii. Information on the soil properties present at the site to allow for geotechnical development constraints to be considered.
10. The scope of the investigation was selected on the basis of the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.
11. For contamination purposes, the objectives of the investigation are limited to establishing the risks associated with potential contamination sources with the potential to cause harm to human health, building materials, the environment (including adjacent land), or controlled waters.
12. For geotechnical investigations the purpose is to broadly consider potential development constraints associated with the physical property of the soils underlying the site within the context of the proposed future or continued use of the site, as stated within the report.
13. The amount of exploratory work, soil property testing and chemical testing undertaken has necessarily been restricted by various factors which may include accessibility, the presence of services; existing buildings; current site usage or short timescales. The exploratory holes completed assess only a small percentage of the area in relation to the overall size of the Site, and as such can only provide a general indication of conditions.
14. The number of sampling points and the methods of sampling and testing do not preclude the possible existence of contamination where concentrations may be significantly higher than those actually encountered or ground conditions that vary from those identified. In addition, there may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.
15. The inspection, testing and monitoring records relate specifically to the investigation points and the timeframe that the works were undertaken. They will also be limited by the techniques employed. As part of this assessment, WSP UK Limited has used reasonable skill and care to extrapolate conditions between these points based upon assumptions to develop our interpretation and conclusions. The assumption made in forming our conclusions is that the ground and groundwater conditions (both chemically and physically) are the same as have been encountered during the works undertaken at the specific points of investigation. Conditions can change between investigation points and these interpretations should be considered indicative.
16. The risk assessment and opinions provided are based on currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values. Specific assumptions associated

REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

with the WSP UK Limited risk assessment process have been outlined within the body or associated appendix of the report.

17. Additional investigations may be required in order to satisfy relevant planning conditions or to resolve any engineering and environmental issues.
18. Where soil contamination concentrations recorded as part of this investigation are used for commentary on potential waste classification of soils for disposal purposes, these should be classed as indicative only. Due consideration should be given to the variability of contaminant concentrations taken from targeted samples versus bulk excavated soils and the potential variability of contaminant concentrations between sampling locations. Where major waste disposal operations are considered, targeted waste classification investigations should be designed.
19. The results of the asbestos testing are factually reported and interpretation given as to how this relates to the previous use of the site, the types of ground encountered and site conceptualisation. This does not however constitute a formal asbestos assessment. These results should be treated cautiously and should not be relied upon to provide detailed and representative information on the delineation, type and extent of bulk ACMs and / or trace loose asbestos fibres within the soil matrix at the site.
20. If costs have been included in relation to additional site works, and / or site remediation works these must be considered as indicative only and must be confirmed by a qualified quantity surveyor.

EUROCODE 7: GEOTECHNICAL DESIGN

21. On 1st April 2010, BS EN 1997-1:2004 (Eurocode 7: Geotechnical Design – Part 1) became the mandatory baseline standard for geotechnical ground investigations.
22. In terms of geotechnical design for foundations, slopes, retaining walls and earthworks, EC7 sets guidance on design procedures including specific guidance on the numbers and spacings of boreholes for geotechnical design, there are limits to methods of ground investigation and the quality of data obtained and there are also prescriptive methods of assessing soil strengths and methods of design. Unless otherwise explicitly stated, the work has not been undertaken in accordance with EC7. A standard geotechnical interpretative report will not meet the requirements of the Geotechnical Design Report (GDR) under Eurocode 7. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. The report is likely to represent a Ground Investigation Report (GIR) under the Eurocode 7 guidance.

DETAILED QUANTITATIVE RISK ASSESSMENTS AND REMEDIAL STRATEGY REPORTS

23. These reports build upon previous report versions and associated notes. The scope of the investigation, further testing and monitoring and associated risk assessments were selected on the basis of the specific development and land use scenario proposed by the Client and may not be appropriate to another form of development or scheme layout. The risk assessment and opinions provided are based on currently available approaches in the generation of Site Specific Assessment Criteria relating to contamination concentrations and are not considered to represent a risk in a specific land use scenario to a specific receptor. No liability can be accepted for the retrospective effects of any future changes or amendments to these values, associated models or associated guidance.



REPORT LIMITATIONS - GROUND RISK AND REMEDIATION

- 24. The outputs of the Detailed Quantitative Risk Assessments are based upon WSP UK Limited manipulation of standard risk assessment models. These are our interpretation of the risk assessment criteria.
- 25. Prior to adoption on site they will need discussing and agreeing with the Regulatory Authorities prior to adoption on site. The regulatory discussion and engagement process may result in an alternative interpretation being determined and agreed. The process and timescales associated with the Regulatory Authority engagement are not within the control of WSP UK Limited. All costs and programmes presented as a result of this process should be validated by a quantity surveyor and should be presumed to be indicative.

GEOTECHNICAL DESIGN REPORT (GDR)

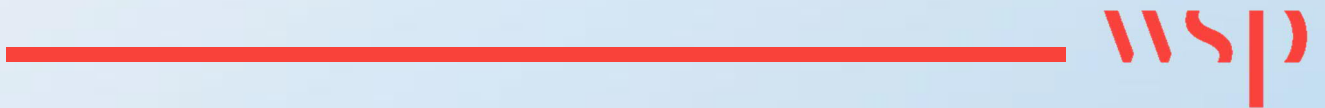
- 26. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. All the relevant information needs to be provided to allow for a GDR to be produced.

MONITORING (INCLUDING REMEDIATION MONITORING REPORTS)

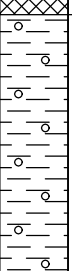
- 27. These reports are factual in nature and comprise monitoring, normally groundwater and ground gas and data provided by contractors as part of an earthworks or remedial works.
- 28. The data is presented and will be compared with assessment criteria.

Appendix C

EXPLORATORY HOLE LOGS



 WSP Telephone: Email:	BOREHOLE LOG		Hole No. WS01
	Project Stanhope Road Bridge		Sheet 1 of 1
Job No 70085596	Client Haringey Borough Council		Date Start: 18-05-23 End: 18-05-23
Contractor/Driller Jacksons	Method/Plant Used Comacchio Geo 300	Logged By Rebecca Hoyle	Co-Ordinates () E: 529368.78 N: 187824.64
		Ground Level (m) 74.714	

SAMPLES & TESTS							STRATA					
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
0.00-0.40	ES						74.46	0.25	Black organic very gravelly fine to coarse SAND with frequent rootlets and roots. Gravel is angular to subrounded fine to coarse of brick, flint, slag and coal.		TS	
							74.16	0.55			MG	
							74.01	0.70	Brownish red organic sandy very angular to subrounded fine to coarse GRAVEL of brick.		MG	
1.00-1.50	ES							(0.90)	Red sandy slightly clayey subangular to very angular fine to coarse GRAVEL of brick.		MG	
							73.11	1.60	Reddish brown slightly gravelly CLAY. Gravel is subangular to very angular fine and medium of brick.			
								(1.20)	Stiff brown slightly gravelly slightly sandy SILT. Gravel is subangular fine and medium of brick.		MG	
							71.91	2.80	2.50 - 3.00 Tree root present			
								(2.20)	Very stiff brown gravelly CLAY. Gravel is subangular to subrounded fine and medium of flint.		LC	
							69.71	5.00	Reached scheduled depth			

Boring Progress						Water Strikes					
Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt	Date	Time	Strike	Minutes	Standing	Casing
Chiselling				Water Added		General Remarks					
From	To	Hours	Tool	From	To						
Scale 1:62.5		Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.									

 WSP Telephone: Email:	BOREHOLE LOG		Hole No. WS02
	Project Stanhope Road Bridge		Sheet 1 of 1
Job No 70085596	Client Haringey Borough Council		Date Start: 18-05-23 End: 18-05-23
Contractor/Driller Jacksons	Method/Plant Used Archway Competitor Dart	Logged By Rebecca Hoyle	Co-Ordinates () E: 529379.34 N: 187831.90
		Ground Level (m) 72.933	

SAMPLES & TESTS							STRATA								
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P. Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill			
0.50-0.80	ES						72.53	0.40	Dark brown gravelly clayey fine to coarse SAND with frequent rootlets and roots. Gravel is very angular to subrounded fine and medium of brick, concrete, flint and glass and plastic (TOPSOIL).		TS				
							72.43	0.50			MG				
							72.23	0.70			MG				
										(0.90)	MADE GROUND comprising: Brown slightly sandy slightly clayey angular to subangular fine to coarse GRAVEL of brick and flint.		MG		
										MADE GROUND comprising: Red friable very sandy slightly clayey angular to subangular fine and medium GRAVEL of brick. Sand is of weathered brick.					
							71.33	1.60	MADE GROUND comprising: Firm pale orange and grey CLAY.		MG				
							71.13	1.80	MADE GROUND comprising: Dark greyish brown friable CLAY.		MG				
								(0.50)	MADE GROUND comprising: Stiff pale orangish grey CLAY.		MG				
										70.63	2.30	MADE GROUND comprising: Firm dark greyish brown friable CLAY.		MG	
										70.53	2.40			MG	
										70.13	2.80			LC	
											(0.70)	Stiff brown mottled grey slightly gravelly CLAY. Gravel is subangular to rounded fine and medium of flint. LONDON CLAY FORMATION.		LC	
											Firm orangish brown CLAY. LONDON CLAY FORMATION.				
										69.43	3.50	LC			
					69.23	3.70	Soft pale brownish grey slightly sandy CLAY. LONDON CLAY FORMATION.		LC						
						(1.30)	Firm brown CLAY. LONDON CLAY FORMATION.								
					67.93	5.00	Reached scheduled depth								

Boring Progress						Water Strikes					
Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt	Date	Time	Strike	Minutes	Standing	Casing
Chiselling				Water Added		General Remarks					
From	To	Hours	Tool	From	To						
Scale 1:62.5		Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.									

 WSP Telephone: Email:	BOREHOLE LOG		Hole No. WS03	
	Project Stanhope Road Bridge		Sheet 1 of 1	
Job No 70085596		Client Haringey Borough Council		Date Start: 18-05-23 End: 18-05-23
Contractor/Driller Jacksons	Method/Plant Used Comacchio Geo 300	Logged By Rebecca Hoyle	Co-Ordinates () E: 529365.42 N: 187831.19	Ground Level (m) 72.886

SAMPLES & TESTS							STRATA					
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill
0.00-0.50	ES							(0.50)	Black organic very gravelly fine to coarse SAND with frequent rootlets and roots. Gravel is angular to subrounded fine to coarse of brick, flint and coal and glass (Topsoil).		TS	
							72.39 0.50	MADE GROUND comprising: Brown and black sandy slightly clayey very angular to subrounded fine to coarse GRAVEL of brick.		MG		
							72.24 0.65			MG		
	ES							(1.15)	MADE GROUND comprising: Red sandy very angular to angular fine to coarse GRAVEL of brick.		MG	
1.50-1.80							71.09 1.80	MADE GROUND comprising: Firm brown slightly gravelly slightly sandy CLAY. Gravel is subangular fine of brick and flint.	MG			
3.00-3.50	ES						69.39	3.50	MADE GROUND comprising: Stiff yellowish brown and grey very sandy slightly gravelly CLAY with low cobble content and . Cobbles are subangular of brick. Gravel is subangular to well rounded fine of flint.		MG	
							69.04 3.85	TS				
							68.79 4.10	Brown organic gravelly fine to coarse SAND with frequent rootlets, roots and wood fragments. Gravel is subangular to very angular fine and medium of brick, flint and Coal (RELICT TOPSOIL).		LC		
							(0.90)					
							67.89 5.00				MADE GROUND comprising: Stiff dark brown sandy slightly gravelly CLAY. Gravel is subrounded to well rounded fine and medium of flint.	
Reached scheduled depth												

Boring Progress						Water Strikes					
Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt	Date	Time	Strike	Minutes	Standing	Casing
Chiselling				Water Added		General Remarks					
From	To	Hours	Tool	From	To						
Scale 1:62.5		Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.									

 WSP Telephone: Email:	BOREHOLE LOG		Hole No. WS04
	Project Stanhope Road Bridge		Sheet 1 of 1
Job No 70085596	Client Haringey Borough Council		Date Start: 18-05-23 End: 18-05-23
Contractor/Driller Jacksons	Method/Plant Used Comacchio Geo 300	Logged By Rebecca Hoyle	Co-Ordinates () E: 529312.73 N: 187827.18
		Ground Level (m) 74.742	

SAMPLES & TESTS							STRATA					
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thickness)	Description	Legend	Geology	Install / Backfill
0.00-0.50	ES						74.49	0.25	Black organic very gravelly fine to coarse SAND with frequent rootlets.		TS	
							74.34	0.40	Gravel is angular to subrounded fine to coarse of brick, flint and coal and glass (TOPSOIL).			
							74.04	0.70	MADE GROUND comprising: Red and black sandy slightly clayey very angular to subrounded fine to coarse GRAVEL of brick.			
							73.94	0.80				
1.00-1.40	ES						73.54	1.20	MADE GROUND comprising: Reddish brown sandy CLAY.		MG	
									MADE GROUND comprising: Red sandy very angular to angular fine to coarse GRAVEL of brick. Sand is comprised of weathered brick.			
									MADE GROUND comprising: Firm brown slightly gravelly slightly sandy CLAY. Gravel is subangular fine of brick and flint.			
									MADE GROUND comprising: Stiff brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine and medium of flint.			
4.00-4.50	ES							(2.20)			MG	
							71.34	3.40				
							70.89	3.85	MADE GROUND comprising: stiff yellowish brown and grey very sandy slightly gravelly CLAY. Gravel is subangular to well rounded fine of flint.			
							70.64	4.10	Dark brown organic gravelly fine to coarse SAND with roots and rootlets. Gravel is subangular to very angular fine and medium of brick, flint and coal (TOPSOIL).			
								(0.90)	Orangish brown friable sandy slightly gravelly CLAY. Gravel is subrounded to well rounded fine and medium of flint. LONDON CLAY FORMATION		TS	
							69.74	5.00				
Reached scheduled depth												

Boring Progress						Water Strikes					
Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt	Date	Time	Strike	Minutes	Standing	Casing
Chiselling				Water Added		General Remarks					
From	To	Hours	Tool	From	To						
Scale 1:62.5		Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.									

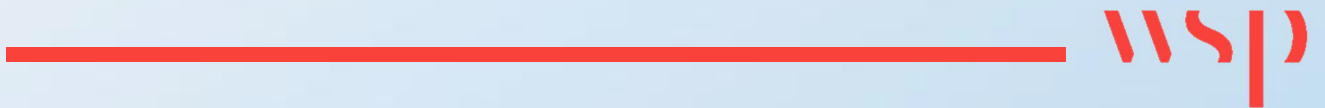
 WSP Telephone: Email:	BOREHOLE LOG		Hole No. WS05	
	Project Stanhope Road Bridge		Sheet 1 of 1	
Job No 70085596		Client Haringey Borough Council		Date Start: 18-05-23 End: 18-05-23
Contractor/Driller Jacksons	Method/Plant Used Archway Competitor Dart	Logged By Rebecca Hoyle	Co-Ordinates () E: 529312.60 N: 187833.84	Ground Level (m) 74.277

SAMPLES & TESTS							STRATA						
Depth	Type	Test Result	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (m)	Depth (Thick-ness)	Description	Legend	Geology	Install / Backfill	
0.30-0.60	ES						73.98	0.30	Brownish black organic gravelly clayey fine to coarse SAND with frequent roots and rootlets. Gravel is very angular to well rounded fine to coarse of brick and flint (TOPSOIL)		TS		
							73.78	0.50					
							73.48	0.80	MADE GROUND comprising: Pale brown and black slightly sandy very angular to rounded fine to coarse GRAVEL of brick and flint.		MG		
							73.18	1.10	MADE GROUND comprising: Red sandy subangular to very angular fine and medium GRAVEL of brick. Sand is comprised of weathered brick.				
							2.00-2.50	ES					
		MADE GROUND comprising: Stiff brown mottled grey slightly sandy CLAY.											
(1.50)		MADE GROUND comprising: Very stiff brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is subangular fine of flint.											
71.08	3.20	MADE GROUND comprising: Hard orangish brown mottled pale grey CLAY.											
(1.70)													
							69.38	4.90	Dark brown organic clayey fine to coarse SAND with frequent rootlets (RELICT TOPSOIL).		TS		
							69.28	5.00					
Reached scheduled depth													

Boring Progress						Water Strikes					
Date	Time	Depth	Casing Dpt	Dia. (mm)	Water Dpt	Date	Time	Strike	Minutes	Standing	Casing
Chiselling				Water Added		General Remarks					
From	To	Hours	Tool	From	To						
Scale 1:62.5		Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.									

Appendix D

GAC METHODOLOGY AND SCREENING TABLES



PRE-REPORT DATA CHECK



All GEOL_GEO2 codes are complete.



All GEOL_GEO2 codes are recognised and suitable for this report.



All Test Types are valid and Sample Matrix can be calculated.



All result and screening units match



All TPH fractions are present for all samples to enable the calculation of the TPH Hazard Index

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

Unrecognised analytes

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
WAC (Unrecognised code)	10.0	10.0	10.0	0.0000	-	0.0000	-	mg/kg	2	2	2	0	

Aliphatics and Aromatics

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Aliphatic C05-C06	0.010	0.005	0.010	0.010	0.005	0.010	94,700	mg/kg	5	8	0	0	
Aliphatic C06-C08	0.010	0.007	0.017	0.010	0.005	0.010	146,000	mg/kg	5	8	1	0	
Aliphatic C08-C10	0.010	0.010	0.035	0.010	0.005	0.010	14,300	mg/kg	5	8	1	0	
Aliphatic C10-C12	1.00	0.50	1.00	1.00	0.50	1.00	20,900	mg/kg	5	8	0	0	
Aliphatic C12-C16	1.00	0.50	1.00	1.00	0.50	1.00	24,700	mg/kg	5	8	0	0	
Aliphatic C16-C21	1.00	0.50	1.00	1.00	0.50	1.00	-	mg/kg	5	8	0	0	
Aliphatic C16-C35	1.00	0.50	1.00	2.09	5.05	8.00	525,000	mg/kg	5	8	2	0	
Aliphatic C21-C35	1.00	0.50	1.00	2.09	4.78	7.47	-	mg/kg	5	8	2	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

Aliphatics and Aromatics

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Aliphatic C35-C44	1.00	0.50	1.00	1.00	0.50	1.00	525,000	mg/kg	5	8	0	0	
Aliphatics C05-C10	0.050	0.030	0.052	0.050	0.025	0.050	-	mg/kg	5	8	1	0	
Aliphatics C10-C44	5.00	2.50	5.00	5.00	5.72	8.93	-	mg/kg	5	8	1	0	
Aromatic C06-C07	0.010	0.005	0.010	0.010	0.005	0.010	-	mg/kg	5	8	0	0	
Aromatic C07-C08	0.010	0.005	0.010	0.010	0.005	0.010	86,800	mg/kg	5	8	0	0	
Aromatic C08-C10	0.010	0.008	0.024	0.010	0.005	0.010	7,220	mg/kg	5	8	1	0	
Aromatic C10-C12	1.00	0.50	1.00	1.00	0.50	1.00	9,240	mg/kg	5	8	0	0	
Aromatic C12-C16	1.00	0.50	1.00	1.00	0.50	1.00	10,200	mg/kg	5	8	0	0	
Aromatic C16-C21	1.00	0.50	1.00	1.00	1.04	1.57	7,880	mg/kg	5	8	1	0	
Aromatic C16-C35	1.00	0.82	1.52	1.36	6.28	11.2	-	mg/kg	5	8	4	0	
Aromatic C21-C35	1.00	0.69	1.07	1.12	5.36	9.59	7,880	mg/kg	5	8	4	0	
Aromatic C35-C44	1.00	0.50	1.00	1.00	0.50	1.00	7,880	mg/kg	5	8	0	0	
Aromatic C40-C44	1.00	0.50	1.00	1.00	0.50	1.00	-	mg/kg	5	8	0	0	
Aromatics C05-C10	0.050	0.025	0.050	0.050	0.025	0.050	-	mg/kg	5	8	0	0	
Aromatics C10-C44	5.00	2.50	5.00	5.00	7.35	12.2	-	mg/kg	5	8	1	0	
Total Aliphatics & Aromatics (C10-C44)	10.00	5.00	10.00	10.0	13.1	21.1	-	mg/kg	5	8	1	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

Aliphatics and Aromatics

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Total Aliphatics and Aromatics (C05-C44)	10.00	5.00	10.00	10.0	13.1	21.1	-	mg/kg	5	8	1	0	
TPH Hazard Index	0.0003	0.0004	0.0004	0.0004	0.001	0.002	1.00	mg/kg	5	8	N/A	0	

Alkali and Alkaline Earth Metals

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Barium	24.9	44.7	97.5	36.3	104	172	5,770	mg/kg	5	8	8	0	
Beryllium	0.73	0.97	1.24	0.70	1.24	1.77	63.0	mg/kg	5	8	8	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

BTEX and Fuel Additives

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Benzene	0.009	0.046	0.180	0.090	0.045	0.090	90.0	mg/kg	5	8	0	0	
BTEX	0.04	0.20	0.80	0.40	0.20	0.40	-	mg/kg	5	8	0	0	
Ethylbenzene	0.004	0.020	0.080	0.040	0.020	0.040	16,500	mg/kg	5	8	0	0	
Methyl t-butylether (MTBE)	0.010	0.051	0.200	0.10	0.050	0.10	98,400	mg/kg	5	8	0	0	
TAME	0.010	0.051	0.200	0.10	0.050	0.10	-	mg/kg	5	8	0	0	
Toluene	0.007	0.036	0.140	0.070	0.035	0.070	87,200	mg/kg	5	8	0	0	
Xylene - Total (Summed)	0.01	0.10	0.20	0.10	0.10	0.10	16,600	mg/kg	5	8	8	0	
Xylene-m & p	0.010	0.051	0.200	0.10	0.050	0.10	16,600	mg/kg	5	8	0	0	
Xylene-o	0.010	0.051	0.200	0.10	0.050	0.10	16,600	mg/kg	5	8	0	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

General Chemistry

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Acid Neutralisation Capacity at pH 6	0.030	0.015	0.030	0.0000	-	0.0000	-	mol/kg	2	2	0	0	
Acid Neutralisation Capacity pH4	0.030	0.031	0.046	0.0000	-	0.0000	-	mol/kg	2	2	1	0	
pH	4.09	6.84	8.74	4.70	6.30	7.89	-	pH units	5	8	8	0	

Inorganics

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Sulphate as SO4	10,500	746,883	2,370,000	20,100	272,550	525,000	-	ug/l	5	8	8	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

Metals

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Arsenic	10.0	13.7	18.8	13.6	16.7	19.8	168	mg/kg	5	8	8	0	
Boron	1.00	0.50	1.00	1.00	0.50	1.00	46,000	mg/kg	5	8	0	0	
Cadmium	0.024	0.072	0.153	0.035	0.15	0.27	555	mg/kg	5	8	8	0	
Chromium	10.2	26.3	32.3	9.26	16.0	22.8	-	mg/kg	5	8	8	0	
Copper	11.5	15.0	19.1	31.4	161	291	44,400	mg/kg	5	8	8	0	
Hexavalent Chromium	0.60	0.30	0.60	0.60	0.30	0.60	69.0	mg/kg	5	8	0	0	
Lead	12.3	15.8	24.9	65.6	82.8	100	808	mg/kg	5	8	8	0	
Mercury	0.100	0.050	0.100	0.10	0.47	0.89	242	mg/kg	5	8	1	0	
Nickel	16.4	22.2	27.9	13.8	23.0	32.1	804	mg/kg	5	8	8	0	
Selenium	1.00	0.50	1.00	1.00	0.50	1.00	1,850	mg/kg	5	8	0	0	
Vanadium	36.7	54.0	63.6	41.5	44.7	47.9	5,030	mg/kg	5	8	8	0	
Zinc	30.7	45.5	64.9	38.9	89.5	140	173,000	mg/kg	5	8	8	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

Other

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Total organic carbon (TOC)	0.20	0.18	0.25	0.0000	-	0.0000	-	%	2	2	1	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

PAHs

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Acenaphthene	0.008	0.004	0.008	0.008	0.008	0.012	-	mg/kg	5	8	1	0	
Acenaphthylene	0.012	0.006	0.012	0.012	0.022	0.038	-	mg/kg	5	8	1	0	
Anthracene	0.016	0.010	0.019	0.016	0.041	0.074	-	mg/kg	5	8	2	0	
Benzo (a) anthracene	0.014	0.009	0.017	0.014	0.17	0.34	-	mg/kg	5	8	2	0	
Benzo (a) pyrene	0.015	0.011	0.029	0.015	0.14	0.27	11.0	mg/kg	5	8	2	0	
Benzo (b) fluoranthene	0.015	0.013	0.041	0.015	0.21	0.41	-	mg/kg	5	8	2	0	
Benzo (ghi) perylene	0.024	0.016	0.037	0.024	0.084	0.16	-	mg/kg	5	8	2	0	
Benzo (k) fluoranthene	0.014	0.007	0.014	0.014	0.089	0.17	-	mg/kg	5	8	1	0	
Chrysene	0.010	0.005	0.010	0.010	0.18	0.35	-	mg/kg	5	8	1	0	
Coronene	0.20	0.10	0.20	0.0000	-	0.0000	-	mg/kg	2	2	0	0	
Dibenzo (ah) anthracene	0.023	0.012	0.023	0.023	0.025	0.038	-	mg/kg	5	8	1	0	
Fluoranthene	0.017	0.012	0.031	0.017	0.29	0.58	-	mg/kg	5	8	2	0	
Fluorene	0.010	0.005	0.010	0.010	0.010	0.015	-	mg/kg	5	8	1	0	
Indeno (1,2,3-cd) pyrene	0.018	0.013	0.031	0.018	0.081	0.15	-	mg/kg	5	8	2	0	
Naphthalene	0.009	0.005	0.009	0.009	0.034	0.064	1,240	mg/kg	5	8	1	0	
PAH Total (EPA 16)	0.118	0.095	0.274	0.12	1.74	3.43	-	mg/kg	5	8	2	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

PAHs

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
PAH Total (EPA 17)	10.00	5.00	10.00	0.0000	-	0.0000	-	mg/kg	2	2	0	0	
Phenanthrene	0.015	0.013	0.039	0.015	0.14	0.27	-	mg/kg	5	8	2	0	
Pyrene	0.015	0.011	0.031	0.015	0.25	0.49	-	mg/kg	5	8	2	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

PCBs

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
PCB101	0.003	0.002	0.003	0.003	0.002	0.003	-	mg/kg	3	4	0	0	
PCB118	0.003	0.002	0.003	0.003	0.002	0.003	-	mg/kg	3	4	0	0	
PCB138	0.003	0.002	0.003	0.003	0.002	0.003	-	mg/kg	3	4	0	0	
PCB153	0.003	0.002	0.003	0.003	0.002	0.003	-	mg/kg	3	4	0	0	
PCB180	0.003	0.002	0.003	0.003	0.002	0.003	-	mg/kg	3	4	0	0	
PCB28	0.003	0.002	0.003	0.003	0.002	0.003	-	mg/kg	3	4	0	0	
PCB52	0.003	0.002	0.003	0.003	0.002	0.003	-	mg/kg	3	4	0	0	
Total PCB Congeners ICES 7	0.021	0.011	0.021	0.021	0.011	0.021	2.60	mg/kg	3	4	0	0	

Phenols

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Phenol	0.010	0.005	0.010	0.010	0.005	0.010	760	mg/kg	5	8	0	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site
Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

Physical													
ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
Loss on ignition	1.25	1.94	2.63	0.0000	-	0.0000	-	%	2	2	2	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

QA Standard

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
4-Bromofluorobenzene	94.5	96.7	98.8	0.0000	-	0.0000	-	%	2	2	2	0	
Acenaphthene-d10	91.3	95.9	99.5	87.8	91.0	94.2	-	%	5	8	8	0	
Chrysene-d12	86.1	98.5	111.0	97.4	98.4	99.3	-	%	5	8	8	0	
Dibromofluoromethane	104	109	113	0.0000	-	0.0000	-	%	2	2	2	0	
EPH Surrogate % recovery**	92.0	94.3	96.6	0.0000	-	0.0000	-	%	2	2	2	0	
Naphthalene-d8	90.5	94.9	98.4	90.0	91.3	92.5	-	%	5	8	8	0	
Perylene-d12**	81.9	94.2	108.0	76.9	86.0	95.0	-	%	5	8	8	0	
Phenanthrene-d10 IS	94.1	98.4	105.0	84.9	90.6	96.3	-	%	5	8	8	0	
Toluene-d8 Surrogate	97.2	97.7	98.2	0.0000	-	0.0000	-	%	2	2	2	0	

Stanhope Road Bridge



Parks Public Open Space, SOM=1%

Site Area(s) Selected: Whole site

Phase(s): All phases

Notes: * For results below LOD, a value of half LOD is used in the calculation of the mean

TPH/EPH

ANALYTE	MADEGROUND			NATURAL GROUND			ASSESSMENT CRITERIA (AC)	UNITS	NO. OF LOCATIONS	NO. OF SAMPLES	NO. OF SAMPLES > LOD	NO. OF LOCATIONS > AC	LOCATIONS FAILING SCREENING
	MIN	MEAN*	MAX	MIN	MEAN*	MAX							
GRO Surrogate	101	108	115	90.8	98.4	106	-	%	5	8	8	0	
Mineral oils	5.00	2.50	5.00	0.0000	-	0.0000	-	mg/kg	2	2	0	0	
PRO (>C5-C10)	0.020	0.017	0.052	0.020	0.010	0.020	-	mg/kg	5	8	1	0	

THERE WERE NO EXCEEDANCES OF Parks Public Open Space, SOM=1%

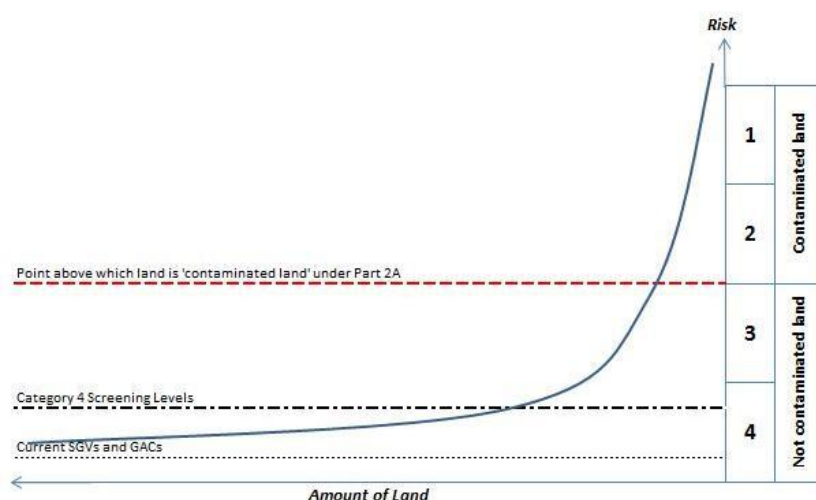
METHODOLOGY FOR THE DERIVATION OF GENERIC QUANTITATIVE ASSESSMENT CRITERIA TO EVALUATE RISKS TO HUMAN HEALTH FROM SOIL & GROUNDWATER CONTAMINATION

UK APPROACH

In the UK, the potential risks to human health from contamination in the ground are usually evaluated through a generic quantitative risk assessment (GQRA) approach. This allows generic and conservative exposure assumptions to be readily applied to risk assessments, and can be a useful tool for rapidly screening data and to identify those contaminants or scenarios that could benefit from further investigation and/or site-specific detailed quantitative risk assessment (DQRA). Current industry good practice is to use the approach presented in the Environment Agency (EA) publications SR2¹ and SR3². This approach allows the derivation of Generic Assessment Criteria (GACs), primarily for chronic exposure.

In April 2012, the Department of Environment, Food and Rural Affairs (Defra) published updated statutory guidance³ which introduced a four category approach to determining whether land in England and Wales is contaminated or not on the grounds of significant possibility of significant harm (SPOSH). **Figure 1** presents a graphical representation of the categories.

Figure 1: Four Categories for Determining if Land Represent a SPOSH



Cases classified as Category 1 are considered to be SPOSH based on actual evidence or an unacceptably high probability of harm existing. Category 4 cases are those where there is no risk, or a low risk of SPOSH.

¹ Environment Agency 'Human Health Toxicological Assessment of Contaminants in Soil', Report SC050021/SR2. January 2009.

² Environment Agency 'Updated Technical Background to the CLEA Model,' Report SC050021/SR3. January 2009.

³ Defra 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance'. April 2012.

GACs represent a minimal risk level, well within Category 4. A 2014 publication by Contaminated Land: Applications in Real Environments (CL:AIRE), SP1010⁴ and endorsed by Defra⁵ provided an approach to determine Category 4 Screening Levels (C4SLs) which are higher than the GACs whilst being “more pragmatic but still strongly precautionary”. It also provided C4SLs for six contaminants of concern. Although the C4SLs were designed to support Part 2A assessments to determine ‘contaminated land’ they are specifically mentioned, along with reference to the Part 2A statutory guidance, by the Department for Communities and Local Government (DCLG) for use in a planning context⁶.

An updated version the Contaminated Land Exposure Assessment (CLEA) Workbook (v1.071) was released by the EA in September 2015 to take into account the publication of SP1010. The updates comprised: additional toxicity data for the six chemicals for which C4SLs were derived; two new public open space land use scenarios; updated exposure parameters; options to run the model using C4SL exposure assumptions; and increased functionality. There were no changes to algorithms, so it is still possible to replicate the withdrawn SGVs using the input parameters held within v1.071.

It should be noted that the four category approach has not been adopted in Scotland under Part 2A or the planning regime. The Part 2A statutory guidance applicable in Scotland (Paper SE/2006/44 dated May 2006) does not reflect the changes introduced by Defra in April 2012 which allow for the use of C4SLs within Part 2A risk assessments. Additionally, it is considered that the principal of ‘minimal risk’ should still apply under planning in Scotland, based on current guidance.

WSP APPROACH

Following the withdrawal of the SGVs, and in the absence of an industry-wide, accepted set of GACs it is down to individual practitioners to derive their own soil assessment criteria. WSP has used the approach provided within SR2, SR3, SP1010, CLEA Workbook v1.071 and SR4⁷ to produce a set of minimal risk GACs. The chemical-specific data within two key publications were considered during their production: CL:AIRE 2010⁸ and LQM 2015⁹. Both documents provide comprehensive sets of GACs for different contaminants of concern.

The LQM Suitable For Use Levels (S4ULs) have selected exposure parameters consistent with the C4SL exposure scenarios. This approach was rejected by WSP as not representing minimal risk. However, the LQM S4UL document was critically reviewed and the approach and chemical input parameters were utilised where considered to be appropriate.

An industry-led C4SL Working Group is in the process of deriving a larger set of C4SLs in the near future, for approximately 20 contaminants. This will include a critical review of the chemical input data for all selected substances, and may therefore lead to further amendments to the chemical input data used in the WSP in-house screening values. It is considered likely that the contaminant list will

⁴ CL:AIRE ‘Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination’ SP1010, Final Project Report (Revision 2). September 2014.

⁵ Defra ‘SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document’. December 2014.

⁶ DCLG Planning Practice Guidance ‘Land Affected by Contamination’, particularly Paragraphs 001 and 007. Ref IDs: 33-001-20140306 & 33-007-20140612.

⁷ Environment Agency ‘CLEA Software (Version 1.05) Handbook (and Software)’, Report SC050021/SR4. September 2009.

⁸ CL:AIRE ‘The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment’. ISBN 978-1-05046-20-1. January 2010.

⁹ Nathanail et al ‘The LQM/CIEH S4ULs for Human Health Risk Assessment’, Land Quality Press, ISBN 978-0-9931084-0-2. 2015.

crossover with the 2009 EIC/AGS/CL:AIRE GACs. As such, this document was not critically reviewed by WSP.

WSP's current approach to the assessment of risks to human health is to continue to evaluate minimal risk through the use of in-house derived GACs, and to use the published C4SLs as a secondary tier of assessment until such time as additional C4SLs are published and/or in-house values are derived.

EXPOSURE MODELS

LAND USES

WSP has largely adopted the exposure assumptions of the generic land use scenarios included within SR3, with two additional public open space scenarios included from within SP1010 and two bespoke exposure scenarios (highways):

- à Residential with homegrown produce consumption;
- à Residential without homegrown produce consumption;
- à Allotments;
- à Commercial;
- à Public open space near residential housing (POS_{resi});
- à Public park (POS_{park});
- à Highways (surface soils); and
- à Highways (subsurface soils).

Exceptions are described in the following Sections.

SOIL PROPERTIES

SR3 assumes a sandy loam soil with a pH of 7 and a Soil Organic Matter (SOM) content of 6% for its generic land uses, based on the geographical spread of topsoils in the UK. WSP has adopted these default values. In addition, GACs based on an SOM of 1% and 2.5% have been derived, based on common experience of the nature of Made Ground and lack of topsoil on many brownfield sites.

RECEPTOR CHARACTERISTICS AND BEHAVIOURS

SP1010 provides some updated exposure parameters for long-term inhalation rates¹⁰ and the consumption rates for homegrown produce¹¹ compared to those provided in SR3. This data was used to derived WSP's GACs.

The changes in inhalation rates do not apply to the allotment generic land use scenario, as these are based on the breathing rates for short-term exposure of light to moderate intensity activity which were derived from a study that was not updated in USEPA 2011, so the SR3 rates were retained.

¹⁰ USEPA, National Centre for Environmental Assessment 'Exposure Factors Handbook: 2011 Edition' EPA/600/R-09/052F. September 2011.

¹¹ National Diet and Nutrition Survey 2008/2009 to 2010/2011.

HIGHWAYS EXPOSURE SCENARIOS

Human health GAC for a Highways exposure scenario have been derived. The site area is defined by publicly accessible land adjacent to highways, comprising both hard and soft landscaped areas. Exposure is considered to be largely transitory.

There are no publicly available GAC for this exposure scenario. Consequently, WSP have derived GAC for the following exposure scenarios:

- à Highways (surface soils); and
- à Highways (sub-surface soils).

Surface soils GAC are for soil at ground level and within 300mm of the surface. Conversely, subsurface GAC are for soils at a depth exceeding 0.3m bgl. These GAC are not to be used as import criteria.

The critical receptor is a young female child, CLEA age classes 4-9. This is consistent with the critical receptor for the POS(resi) exposure scenario, and considered to be appropriate for a child potentially playing outside without direct adult supervision.

For all GAC, a sandy loam soil and a soil organic matter content of 1% is assumed. There is no building on site.

Exposure scenarios for surface and subsurface soils are detailed below. These are considered to be conservative estimates, due to the mostly transitory use of publically accessible lands adjacent to highways.

HIGHWAYS GAC (SURFACE SOILS)

The relevant exposure pathways include direct soil and dust ingestion, dermal contact (outdoors) and the inhalation of outdoor dust and vapour.

The exposure frequency is 170 days per annum, and the occupancy period outdoors is 1 hour per day (as per the POS (resi) exposure scenario). The soil and dust ingestion rate has been set at 50 mg/day, consistent with a POS(park) exposure scenario.

HIGHWAYS GAC (SUBSURFACE SOILS)

The single relevant exposure pathway is the inhalation of outdoor vapour. Direct exposure pathways are not viable due to the depth of the soils below ground level.

The exposure frequency is 170 days per annum, and the occupancy period outdoors is 1 hour per day (as per the POS (resi) exposure scenario). The soil and dust ingestion rate has been set to zero, as direct exposure pathways to soils at this depth are not viable.

CHEMICAL DATA

PHYSICO-CHEMICAL PARAMETERS

Physico-chemical properties for the contaminants for which GACs have been derived have been obtained following critical review of the following hierarchy of data sources:

1. Environment Agency/Defra SGV reports where available;
2. Environment Agency '*Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values*', Report SC050021/SR7, November 2008; and
3. Published fate and transport reviews within Nathanail et. al 2015 and CL:AIRE 2010.

Where appropriate, and where sufficient data is available, values were adjusted to reflect a UK soil temperature of 10°C (e.g. K_{aw}).

TOXICOLOGICAL DATA

Toxicological data for the derivation of minimal risk Health Criteria Values (HCV) for each contaminant was selected with due regard to the approach presented in SR2. Where appropriate, the following hierarchy of data sources was used:

1. UK toxicity reviews published by authoritative bodies including:
 - < EA;
 - < Public Health England (PHE);
 - < Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT); and
 - < Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment (COC).
2. Authoritative European sources such as European Food Standards Agency (EFSA)
3. International organisations including:
 - < World Health Organisation (WHO); and
 - < Joint FAO/WHO Expert Committee on Food Additives (JECFA).
4. Authoritative country-specific sources including:
 - < United States Environmental Protection Agency (USEPA);
 - < US Agency for Toxic Substances and Disease Registry (ATSDR);
 - < US Integrated Risk Information System (IRIS); and
 - < Netherlands National Institute for Public Health and the Environment (RIVM).

Factors such as the applicability of the data to human health (e.g. epidemiological vs. animal studies), the quality of the data, the level of uncertainty in the results and the age of the data were also taken into account in the final selection. Details for specific substances are available on request.

MEAN DAILY INTAKES

Estimations of background exposure for each threshold substance have been updated. In line with the SR2 approach, the exposure from non-threshold substances in the soil does not take into account exposure from other sources, and as such GACs were derived without consideration of the Mean Daily Intake (MDI) for those substances.

The data published by the EA in its series of TOX reports between 2002 and 2009 was evaluated to determine whether the values were considered to remain valid today. Values from these current UK published sources were not amended unless they were considered to be significantly different so that the GACs remained as comparable as possible with the revoked SGVs.

ORAL MEAN DAILY INTAKES

Oral MDI were generally estimated as the sum of exposure via the ingestion of food and drinking water using the default adult physiological parameters presented in Table 3.3 of SR2.

Data on the exposure of substances from food ingestion was generally obtained from UK Total Diet Studies (TDS) published by the Food Standards Agency (FSA) and its predecessor the Ministry of Agriculture, Fisheries and Food (MAFF) and from studies commissioned by COT. Where no UK-specific data was available, MDI were derived from the European Food Safety Authority (EFSA), Health Canada and US sources. This was a rare occurrence, and in these instances, the data was evaluated to determine its applicability to the UK.

Data on the concentrations of substances in tap water was obtained from a variety of sources. UK data was used where available, with preference given to Drinking Water Inspectorate (DWI) 2014 data from water company tap water testing (LOD, 1st and 99th percentile data is available). Where the substance was not included in tap water testing, other UK sources of information were considered including:

- à DWI data from water company tap water testing from previous years;
- à COT; and
- à FSA.

Where UK data was not available, a number of other data sources were considered, largely WHO International Programme on Chemical Safety (IPCS) Concise International Chemical Assessment Documents (CICADs) and background documents for the development of Guidelines for Drinking Water Quality, using professional judgement on the relevance of the data to the UK. The final decision on the MDI from drinking water was made using professional judgement on the balance of relevance and probability, taking into account the detection limit where not detected, Koc and solubility, reduction in use of the substance, banned substances, tight controls (e.g. on explosives) and with due consideration to the SR2 instruction that “if no data or information in background exposure are available, background exposure should be assumed to be negligible and the MDI set to zero....”.

Data from other countries was generally not used because it was considered that the hydrogeology of these countries along with industrial practices were unlikely to be reflective of the UK.

INHALATION MEAN DAILY INTAKES

Inhalation MDIs were based on estimates of average daily exposure by the inhalation pathway and calculated using the default adult physiological parameters presented in Table 3.3 of SR2.

The inhalation MDIs were generally estimated using background exposure data from the UK, derived from Defra's UK-AIR: Air Information Resource¹², which provides ambient air quality data from a number of sites forming a UK-wide monitoring network. The MDIs for heavy metals were based on rolling annual average metal mass concentration data from Defra's UK Heavy Metals Monitoring Network from the period October 2009 to September 2010¹³.

Information for some substances was obtained from UK sources including Environment Agency TOX reports and data from the UK Expert Panel on Air Quality Standards (EPAQS). Where recent UK data was not available, data was sourced from the International Programme on Chemical Safety (IPCS), the World Health Organisation (WHO), the Agency for Toxic Substances and Diseases Registry (ATSDR), Health Canada, and various other peer-reviewed sources summarised by LQM/CIEH¹⁴.

For other substances, where no data or information on background exposure was available, background exposure was assumed to be negligible and the MDI set at 0.5*TDI in accordance with guidance in SR2.

PLANT UPTAKE

Soil to plant concentration factors are available in CLEA v1.071 for arsenic, cadmium, hexavalent chromium, lead, mercury, nickel and selenium. For all remaining inorganic chemicals, concentration factors were obtained using the PRISM model. Substance-specific correction factors have been selected in accordance with the guidance established within SR3. This is consistent to the approach utilised in the derivation of the LQM S4UL and the EIC/AGS/CL:AIRE GAC.

Where there is a lack of appropriate data to enable the derivation of specific soil to plant concentrations factors for organic chemicals, plant uptake was modelled within CLEA v1.071 using the generic equations recommended within SR3, as follows:

- à Green Vegetables – Ryan et al. (1988);
- à Root Vegetables – Trapp (2002);
- à Tuber Vegetables – Trapp et al. (2007); and
- à Tree Fruit – Trapp et al. (2003).

There are no suitable models available for modelling uptake for herbaceous fruit or shrub fruit. Exposure is considered negligible.

¹² Crown 2016 copyright Defra via uk-air.defra.gov.uk, licenced under the Open Government Licence (OGL).

¹³ Defra, 2013 Spreadsheet of historic data for multiple years for the Metals network. Available online at: <http://uk-air.defra.gov.uk/data/metals-data>. [Accessed 13/03/2016].

¹⁴ LQM/CIEH, 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment.

SOIL SATURATION LIMITS

GACs are not limited to their theoretical soil saturation within CLEA, although where either the aqueous or the vapour-based saturation is exceeded, this is highlighted within the Workbook (compared with the lower of the two values). This affects pathways which depend on partitioning calculations so in reality this only affects the vapour pathways and is relevant to organic substances and other substances, such as elemental mercury, that have a significant volatile component. However, the Workbook highlights saturation for direct contact pathways to indicate to the user where further qualitative consideration of free phase contamination at the surface may be required.

Where the lower of the two saturation limits is exceeded and the vapour pathway is the only exposure route being considered, the chronic risks to human health are likely to be negligible. Further evaluation could be undertaken using an alternative model suitable for evaluating non-aqueous phase liquids (NAPLs), such as the Johnson & Ettinger (J&E) approach described in USEPA 2003. However, WSP considers that if NAPLs are suspected, given the known limitations and over-simplifications of J&E, soil vapour monitoring is a more accurate way of assessing potential risks.

Where the lower saturation limit is exceeded for the vapour pathway and a number of exposure routes are being considered, then the contribution from the NAPL via vapour inhalation to the overall exposure can be evaluated using the procedure provided in SR4. WSP would evaluate this as part of a DQRA process or through soil vapour monitoring on-site to determine site-specific soil vapour concentrations.

CHEMICAL SPECIFIC ASSUMPTIONS

CYANIDES

Cyanide has high acute toxicity, and short term exposure is an important consideration when assessing the risks from soils contaminated with cyanide. The primary risk to human receptors from free cyanide in soils is an acute risk.

There is no current UK guidance available for calculating acute risks from free cyanide. Consequently, GAC for acute exposure were derived using the algorithms presented in MADEP 1992¹⁵ and assuming a one-off ingestion of 10g of soil (this conservative value has been taken as an upper bound estimate for a one-off soil ingestion rate amongst children). Receptor body weights have been selected according to the critical receptor for each exposure scenario. The lowest of the chronic and acute GAC for each land use scenario were adopted by WSP.

LEAD

The SGV for lead was withdrawn by the EA in 2009, and in 2011 the EA withdrew their published TOX report in light of new scientific evidence. The C4SL for lead was derived using the latest scientific evidence from a large human dataset. As such, no chemical-specific margin was applied in the derivation of the C4SL for lead. It may be possible for WSP to derive a GAC for lead using the same dataset and applying a chemical-specific margin, but the value is likely to be lower than UK natural background concentrations. Therefore, WSP has adopted the toxicological data used to derive the C4SLs in deriving the GAC for lead until such time as alternative GACs are published by an authoritative body. The relative bioavailability was set at 100% in line with the approach taken for other GACs, whereas the C4SL assumes 60% for soil and 64% for airborne dust. Thus, the WSP GAC are lower than the C4SLs.

¹⁵ MADEP 'Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration' 1992. http://www.mass.gov/dep/toxics/cn_soil.htm

POLYCYCLIC AROMATIC HYDROCARBONS

WSP's approach to the assessment of polycyclic aromatic hydrocarbons (PAHs) uses the surrogate marker approach. BaP was used as a surrogate marker for all genotoxic PAHs in line with the Health Protection Agency 2010¹⁶ recommendations and SP1010. This assumes that the PAH profile of the data is similar to that of the coal tars used in the Culp *et al* oral carcinogenicity study from which the toxicity data for BaP was produced. In reality, this profile has been shown by HPA to be applicable on the majority of contaminated sites based on assessment of sites across the country.

The alternative is the Toxic Equivalency Factor (TEF) approach which uses a reference compound and assigns TEFs for other compounds based on estimates of potency. Key uncertainties with this approach include the assumption that all compounds have the same toxic mechanism of action within the body and that no compounds with a greater potency than the reference compound are present. It is considered by the HPA that the TEF approach is likely to under predict the true carcinogenicity of PAHs and therefore favours the surrogate marker approach.

For these reasons, WSP considers that the adoption of BaP as a surrogate marker for genotoxic PAHs, as opposed to the TEF approach, is reasonable. In rare cases where the PAH profile may differ from the wide definitions of the Culp *et al* study the user should discuss their project with an experienced risk assessor. In addition, WSP has derived a GAC for naphthalene, which is commonly a risk driver due to its high volatility, relative to other PAH compounds.

TRIMETHYLBENZENES

The GAC for trimethylbenzenes can be used for the assessment of any individual isomer (1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene or 1,3,5-trimethylbenzene), or a mixture of the three isomers.

CHEMICAL GROUPS

For a number of chemical groups, the available toxicity data is for combinations of chemicals. Given that the physico-chemical parameters may differ between the chemicals, the GACs for the chemicals within the groups have been calculated and then the lowest GAC selected to represent the entire group. This was the approach taken by the EA for m-, o- and p-xylenes, and has also been adopted by WSP for:

- à 2-chlorophenol, 2,4-dichlorophenol, 2,4,6-trichlorophenol and 2,3,4,6-tetrachlorophenol;
- à 2-, 3- and 4-methylphenol (total cresols);
- à aldrin and dieldrin; and
- à α - and β -endosulphan.

¹⁶ HPA Contaminated Land Information Sheet 'Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs) 2010

EXPOSURE TO VAPOURS

INHALATION OF MEASURED VAPOURS

WSP has derived a set of soil vapour GACs (GAC_{sv}) that allow for the assessment of measured site soil vapour concentrations, using J&E, in order to establish potential risks via indoor inhalation of vapours. This methodology enables a more robust assessment of exposure via the inhalation of soil vapours indoors than using CLEA-derived soil GAC, as it is based upon measured soil vapour concentrations beneath the site. It also allows for the assessment of vapours from all source terms (i.e. groundwater, soil or NAPL). Outdoor inhalation was not included. WSP considers that the indoor inhalation pathway is the significantly dominant risk-driver.

The generic land use scenarios within CLEA (residential and commercial) that were used to derive the soil GAC were used to define the receptor and building characteristics for the soil vapour GAC. Only residential and commercial generic land use scenarios include the indoor inhalation of vapours pathway.

The GAC_{sv} were derived for three different soil types; sand, sandy loam and clay, reflecting the importance of this parameter within the J&E model. A depth to contamination of 0.85 m below the base of the building foundation was assumed (i.e. 1 m below ground level). This differs from the depth assumed for the soil GAC (0.5 m bgl), but was selected by WSP as a reasonable worst case scenario.

It is acknowledged that the J&E commonly over-predicts indoor vapour concentrations. In particular, it will significantly over-predict vapour concentrations for suspended floor slabs, which many new builds are constructed with, it does not take into account lateral migration and assumes an infinite source of contamination at steady state conditions. In addition, it is common for soil gas/vapour wells to be installed with at least 1 m of plain riser at the surface and this equates to a total depth of 0.85 m below the building foundation plus a 0.15 m thick foundation, and so is more representative of the depth that samples will be taken from.

The TDSIs and IDs for each substance were converted from $\mu g kg^{-1} bw day^{-1}$ to $\mu g m^{-3}$ using the standard conversions quoted in Table 3.3 of SR2, thereby replacing the need to model C_{air} in the equation:

$$C_{air} = \alpha \cdot C_{vap} \cdot 1,000,000 cm^3 m^{-3}$$

Where:

C_{air} is the concentration of vapours within the building, $mg m^{-3}$

α is the steady state attenuation coefficient between soil and indoor air, dimensionless

C_{vap} is the soil vapour concentration, $mg cm^{-3}$

The target concentrations within indoor air for each substance (C_{air}) are a function of receptor inhalation rates and occupancy periods, as defined by the site conceptual exposure model (assuming standard CLEA occupancy periods and receptors).

The attenuation factor was calculated using J&E (Equation 10.4 in SR3) and the resulting C_{vap} is equivalent to the GAC_{sv} for the modelled exposure scenario.

Where reported soil vapour concentrations exceed the relevant saturated vapour concentration, free product may occur, and the user should discuss their project with an experienced risk assessor.

INHALATION OF GROUNDWATER-DERIVED VAPOURS

WSP has derived a set of groundwater GACs (GAC_{gw}) to evaluate the potential risks through the indoor inhalation of groundwater-derived vapours by first applying the approach described above for the derivation of the WSP GAC_{sv} to determine the acceptable concentration in soil vapour directly above the water table.

The depth to groundwater was assumed to be 1 m bgl (i.e. 0.85 m below the base of the building foundation). This depth was considered to be more representative of commonly encountered groundwater conditions than the 0.5 m below the base of the building foundation (i.e. 0.65 m bgl) that is used by CLEA for an unsaturated source present in the overlying soil.

The GAC_{gw} was then back-calculated from the GAC_{sv} using the air-water partition coefficient (K_{aw}) for each substance.

The WSP Groundwater Vapour GAC are protective against a dissolved phase contaminant source only. If the presence of NAPL is suspected, the risks from this source will need to be assessed. Where reported groundwater concentrations exceed the relevant solubility limit, free product may occur, and the user should discuss their project with an experienced risk assessor.

Appendix E

LABORATORY CERTIFICATES





WSP UK Limited
8 First Street
Manchester
Lancashire
M15 4RP

Attention: Rebecca Hoyle

Units 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

CERTIFICATE OF ANALYSIS

Date of report Generation: 26 May 2023
Customer: WSP UK Limited
Sample Delivery Group (SDG): 230519-135
Your Reference: 70085596
Location: Stanhope Road Bridge GI
Report No: 690448
Order Number: 70085596-P01

We received 11 samples on Friday May 19, 2023 and 8 of these samples were scheduled for analysis which was completed on Friday May 26, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager



1291



CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28023998	WS01	ES	0.00 - 0.40	18/05/2023
28024015	WS01	ES	1.00 - 1.50	18/05/2023
28024020	WS02	ES	0.50 - 0.80	18/05/2023
28024056	WS03	ES	0.00 - 0.50	18/05/2023
28024004	WS03	ES	1.50 - 1.80	18/05/2023
28024010	WS03	ES	3.00 - 3.50	18/05/2023
28024039	WS04	ES	0.00 - 0.50	18/05/2023
28024045	WS04	ES	1.00 - 1.40	18/05/2023
28024050	WS04	ES	4.00 - 4.50	18/05/2023
28024026	WS05	ES	0.30 - 0.60	18/05/2023
28024033	WS05	ES	2.00 - 2.50	18/05/2023

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
	28024033	WS05	ES	2.00 - 2.50	60g VOC (ALE215)	S
	28024050	WS04	ES	4.00 - 4.50	250g Amber Jar (ALE210)	S
	28024045	WS04	ES	1.00 - 1.40	60g VOC (ALE215)	S
	28024010	WS03	ES	3.00 - 3.50	250g Amber Jar (ALE210)	S
	28024004	WS03	ES	1.50 - 1.80	60g VOC (ALE215)	S
	28024056	WS03	ES	0.00 - 0.50	250g Amber Jar (ALE210)	S
ANC at pH4 and ANC at pH 6	All	NDPs: 0 Tests: 2				
Anions by Kone (soil)	All	NDPs: 0 Tests: 8				
Anions by Kone (w)	All	NDPs: 0 Tests: 2				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8				
Boron Water Soluble	All	NDPs: 0 Tests: 8				
CEN Readings	All	NDPs: 0 Tests: 2				
Coronene	All	NDPs: 0 Tests: 2				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2				
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 2				
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2				
EPH CWG GC (S)	All	NDPs: 0 Tests: 8				
Fluoride	All	NDPs: 0 Tests: 2				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 8				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 8				
Loss on Ignition in soils	All	NDPs: 0 Tests: 2				



CERTIFICATE OF ANALYSIS

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SDG: 230519-135
Client Ref.: 70085596Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

Results Legend



Test

No Determination
Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container		Sample Type	
	28024033		WS05		ES		2.00 - 2.50		60g VOC (ALE215)	S		
	28024050		WS04		ES		4.00 - 4.50		250g Amber Jar (ALE210)	S		
	28024045		WS04		ES		1.00 - 1.40		1kg TUB with Handle (ALE280)	S		
	28024010		WS03		ES		3.00 - 3.50		60g VOC (ALE215)	S		
	28024004		WS03		ES		1.50 - 1.80		250g Amber Jar (ALE210)	S		
	28024015		WS01		ES		1.00 - 1.50		1kg TUB with Handle (ALE280)	S		
Mercury Dissolved	All	NDPs: 0 Tests: 2										
Metals in solid samples by OES	All	NDPs: 0 Tests: 8										
PAH 16 & 17 Calc	All	NDPs: 0 Tests: 2										
PAH by GCMS	All	NDPs: 0 Tests: 8										
PCBs by GCMS	All	NDPs: 0 Tests: 4										
pH	All	NDPs: 0 Tests: 8										
pH Value of Filtered Water	All	NDPs: 0 Tests: 2										
Phenols by HPLC (S)	All	NDPs: 0 Tests: 8										
Phenols by HPLC (W)	All	NDPs: 0 Tests: 2										
Sample description	All	NDPs: 0 Tests: 7										
Total Organic Carbon	All	NDPs: 0 Tests: 2										
TPH CWG GC (S)	All	NDPs: 0 Tests: 8										
VOC MS (S)	All	NDPs: 0 Tests: 8										



CERTIFICATE OF ANALYSIS

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SDG: 230519-135
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Location: Stanhope Road Bridge GI

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
28024015	WS01	1.00 - 1.50	Dark Brown	Clay	Vegetation	None
28024020	WS02	0.50 - 0.80	Dark Brown	Sand	Stones	Crushed Brick
28024004	WS03	1.50 - 1.80	Dark Brown	Sandy Silt Loam	Stones	None
28024010	WS03	3.00 - 3.50	Dark Brown	Sandy Clay	Vegetation	Stones
28024056	WS03	0.00 - 0.50	Dark Brown	Sand	Vegetation	Brick
28024045	WS04	1.00 - 1.40	Dark Brown	Silty Clay Loam	None	None
28024050	WS04	4.00 - 4.50	Dark Brown	Silty Clay Loam	Vegetation	None
28024033	WS05	2.00 - 2.50	Dark Brown	Silty Clay Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

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Superseded Report:

Results Legend		Customer Sample Ref.	WS01	WS02	WS03	WS03	WS03	WS04
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.00 - 1.50	0.50 - 0.80	0.00 - 0.50	1.50 - 1.80	3.00 - 3.50	1.00 - 1.40
M	mCERTS accredited.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.		18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023
diss.filt	Dissolved / filtered sample.		19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023
tot.unfilt	Total / unfiltered sample.		230519-135	230519-135	230519-135	230519-135	230519-135	230519-135
+	Subcontracted - refer to subcontractor report for accreditation status.		28024015	28024020	28024056	28024004	28024010	28024045
..	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		ES	ES	ES	ES	ES	ES
(F)	Trigger breach confirmed							
1-4+5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	18	9.3	13	16	13	15
Loss on ignition	<0.7 %	TM018		1.25 M		2.63 M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Organic Carbon, Total	<0.2 %	TM132		0.252 M		<0.2 M		
pH	1 pH Units	TM133	7.51 M	8.74 M	7.89 M	8.58 M	7.31 M	4.09 M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M	<0.6 M	<0.6 M	<0.6 M	<0.6 M
PCB congener 28	<0.003 mg/kg	TM168	<0.003 M	<0.003 M	<0.003 M	<0.003 M		
PCB congener 52	<0.003 mg/kg	TM168	<0.003 M	<0.003 M	<0.003 M	<0.003 M		
PCB congener 101	<0.003 mg/kg	TM168	<0.003 M	<0.003 M	<0.003 M	<0.003 M		
PCB congener 118	<0.003 mg/kg	TM168	<0.003 M	<0.003 M	<0.003 M	<0.003 M		
PCB congener 138	<0.003 mg/kg	TM168	<0.003 M	<0.003 M	<0.003 M	<0.003 M		
PCB congener 153	<0.003 mg/kg	TM168	<0.003 M	<0.003 M	<0.003 M	<0.003 M		
PCB congener 180	<0.003 mg/kg	TM168	<0.003 M	<0.003 M	<0.003 M	<0.003 M		
Sum of detected PCB 7 Congeners	<0.021 mg/kg	TM168	<0.021 M	<0.021 M	<0.021 M	<0.021 M		
Arsenic	<0.6 mg/kg	TM181	12.5 M	18.4 M	19.8 M	18.8 M	10 M	11.2 M
Barium	<0.6 mg/kg	TM181	32 #	38.2 #	172 #	97.5 #	46 #	29.3 #
Beryllium	<0.01 mg/kg	TM181	1.13 M	0.766 M	1.77 M	1.24 M	0.936 M	0.732 M
Cadmium	<0.02 mg/kg	TM181	0.0239 M	0.101 M	0.269 M	0.153 M	0.0599 M	0.047 M
Chromium	<0.9 mg/kg	TM181	32.3 M	10.2 M	9.26 M	27 M	31.1 M	27.1 M
Copper	<1.4 mg/kg	TM181	14.5 M	19.1 M	291 M	18.9 M	14.1 M	11.5 M
Lead	<0.7 mg/kg	TM181	13 M	15.4 M	100 M	24.9 M	14.1 M	15.1 M
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181	24.2 M	16.4 M	32.1 M	27.9 M	27.1 M	18.3 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181	62 #	36.7 #	41.5 #	63.6 #	56.6 #	50.3 #
Zinc	<1.9 mg/kg	TM181	44.1 M	30.7 M	140 M	64.9 M	48.2 M	43.6 M
ANC @ pH 4	<0.03 mol/kg	TM182		<0.03		0.0463		
ANC @ pH 6	<0.03 mol/kg	TM182		<0.03		<0.03		
Boron, water soluble	<1 mg/kg	TM222	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.22 M	0.0105 M	0.0201 M	0.0216 M	2.37 M	1.76 M
PAH Total 17 (inc Coronene) Moisture Corrected	<10 mg/kg	TM410		<10		<10		
Coronene	<0.2 mg/kg	TM410		<0.2		<0.2		

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448

Superseded Report:

Location: Stanhope Road Bridge GI

[illegible]

SDG: 230519-135
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Report Number: 690448

Superseded Report:

Location: Stanhope Road Bridge GI

[illegible]

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448

Superseded Report:

Location: Stanhope Road Bridge GI

PAH by GCMS

[illegible]

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448

Superseded Report:

Location: Stanhope Road Bridge GI

PAH by GCMS

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	WS01	WS02	WS03	WS03	WS03	WS04
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.00 - 1.50 Soil/Solid (S)	0.50 - 0.80 Soil/Solid (S)	0.00 - 0.50 Soil/Solid (S)	1.50 - 1.80 Soil/Solid (S)	3.00 - 3.50 Soil/Solid (S)	1.00 - 1.40 Soil/Solid (S)
M	mCERTS accredited.		18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023
aq	Aqueous / settled sample.		19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023
diss.filt	Dissolved / filtered sample.		230519-135	230519-135	230519-135	230519-135	230519-135	230519-135
tot.unfilt	Total / unfiltered sample.		28024015	28024020	28024056	28024004	28024010	28024045
*	Subcontracted - refer to subcontractor report for accreditation status.		ES	ES	ES	ES	ES	ES
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-4	Sample deviation (see appendix)							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	101	106	90.8	104	115	112
			2					
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			2					
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			2					
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			2					
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	8	<1	<1	<1
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	7.47	<1	<1	<1
			#	#	#	#	#	#
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	8.93	<5	<5	<5
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	<10	<10	21.1	<10	<10	<10
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			2					
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			2					
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			2					
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	1.57	<1	<1	<1
			#	#	#	#	#	#
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	11.2	1.52	<1	<1
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	9.59	1.05	<1	<1
			#	#	#	#	#	#
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1	<1	<1	<1	<1
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5	12.2	<5	<5	<5
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	<10	<10	21.1	<10	<10	<10
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
			2					
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
			2					
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
			2					



CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	WS04	WS05				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	4.00 - 4.50	2.00 - 2.50				
M	mCERTS accredited.		Soil/Solid (S)	Soil/Solid (S)				
aq	Aqueous / settled sample.		18/05/2023	18/05/2023				
diss,filtr	Dissolved / filtered sample.		19/05/2023	19/05/2023				
tot,unfiltr	Total / unfiltered sample.		230519-135	230519-135				
*	Subcontracted - refer to subcontractor report for accreditation status.		28024050	28024033				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		ES	ES				
(F)	Trigger breach confirmed							
1-4	Sample deviation (see appendix)							
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	106	108				
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	<0.01				
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	0.017				
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089	<0.01	0.035				
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #				
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #				
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1 #	<1 #				
Aliphatics >C16-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	2.09	<1				
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1 mg/kg	TM414	2.09 #	<1 #				
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1 mg/kg	TM414	<1	<1				
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5				
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10 mg/kg	TM414	<10	<10				
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01				
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	<0.01				
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089	<0.01	0.0237				
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #				
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #				
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1 #	<1 #				
Aromatics > EC16-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	1.36	1.38				
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1 mg/kg	TM414	1.12 #	1.07 #				
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1				
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1 mg/kg	TM414	<1	<1				
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5 mg/kg	TM414	<5	<5				
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10 mg/kg	TM414	<10	<10				
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<0.05 mg/kg	TM089	<0.05	0.052				
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<0.05 mg/kg	TM089	<0.05	<0.05				
GRO >C5-C10 (HS_1D_TOTAL)	<0.02 mg/kg	TM089	<0.02	0.052				

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448

Superseded Report:

Location: Stanhope Road Bridge GI

VOC MS (S)

[illegible]

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448

Superseded Report:

Location: Stanhope Road Bridge GI

VOC MS (S)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5&*S@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS01ES 1.00 - 1.50 SOLID 18/05/2023 00:00:00 19/05/2023 05:00:00 230519-135 28024015 TM048	25/05/2023	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS02ES 0.50 - 0.80 SOLID 18/05/2023 00:00:00 19/05/2023 05:00:00 230519-135 28024020 TM048	25/05/2023	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS03ES 0.00 - 0.50 SOLID 18/05/2023 00:00:00 19/05/2023 05:00:00 230519-135 28024056 TM048	25/05/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS03ES 1.50 - 1.80 SOLID 18/05/2023 00:00:00 19/05/2023 05:00:00 230519-135 28024004 TM048	25/05/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS03ES 3.00 - 3.50 SOLID 18/05/2023 00:00:00 19/05/2023 05:00:00 230519-135 28024010 TM048	25/05/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS04ES 1.00 - 1.40 SOLID 18/05/2023 00:00:00 19/05/2023 05:00:00 230519-135 28024045 TM048	25/05/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS04ES 4.00 - 4.50 SOLID 18/05/2023 00:00:00 19/05/2023 05:00:00 230519-135 28024050 TM048	26/05/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS05ES 2.00 - 2.50 SOLID 18/05/2023 00:00:00 19/05/2023 05:00:00 230519-135 28024033 TM048	25/05/2023	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.143

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Stanhope Road Bridge GI

Natural Moisture Content (%) 58.6

Dry Matter Content (%) 63.1

Case

SDG 230519-135

Lab Sample Number(s) 28024004

Sampled Date 18-May-2023

Customer Sample Ref. WS03 ESZ

Depth (m) 1.50 - 1.80

Landfill Waste Acceptance
Criteria Limits

Solid Waste Analysis

Result

Total Organic Carbon (%) <0.2

Loss on Ignition (%) 2.63

Sum of BTEX (mg/kg) <0.4

Sum of 7 PCBs (mg/kg) <0.021

Mineral Oil (mg/kg) (EH_2D_AL) <5

PAH Sum of 17 (mg/kg) <10

pH (pH Units) 8.58

ANC to pH 6 (mol/kg) <0.03

ANC to pH 4 (mol/kg) 0.0463

Inert Waste
LandfillStable
Non-reactive
Hazardous Waste
in Non-
Hazardous
LandfillHazardous
Waste Landfill

3

5

6

-

-

10

6

-

-

1

-

-

500

-

-

100

-

-

-

>6

-

-

-

-

-

-

-

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

Result

Limit of Detection

Result

Limit of Detection

Arsenic

0.0301

<0.0005

0.301

<0.005

0.5

2

25

Barium

0.0041

<0.0002

0.041

<0.002

20

100

300

Cadmium

<0.00008

<0.00008

<0.0008

<0.0008

0.04

1

5

Chromium

<0.001

<0.001

<0.01

<0.01

0.5

10

70

Copper

0.000776

<0.0003

0.00776

<0.003

2

50

100

Mercury Dissolved (CVAF)

<0.00001

<0.00001

<0.0001

<0.0001

0.01

0.2

2

Molybdenum

<0.003

<0.003

<0.03

<0.03

0.5

10

30

Nickel

0.000657

<0.0004

0.00657

<0.004

0.4

10

40

Lead

0.000337

<0.0002

0.00337

<0.002

0.5

10

50

Antimony

<0.001

<0.001

<0.01

<0.01

0.06

0.7

5

Selenium

<0.001

<0.001

<0.01

<0.01

0.1

0.5

7

Zinc

0.00259

<0.001

0.0259

<0.01

4

50

200

Chloride

<2

<2

<20

<20

800

15000

25000

Fluoride

1.19

<0.5

11.9

<5

10

150

500

Sulphate (soluble)

2.5

<2

25

<20

1000

20000

50000

Total Dissolved Solids

-

-

-

-

4000

60000

100000

Total Monohydric Phenols (W)

<0.016

<0.016

<0.16

<0.16

1

-

-

Dissolved Organic Carbon

<3

<3

<30

<30

500

800

1000

Leach Test Information

Date Prepared 23-May-2023

pH (pH Units) 8.60

Conductivity (µS/cm) 88

Volume Leachant (Litres) 0.847

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

26/05/2023 15:53:38



CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Stanhope Road Bridge GI
Mass Sample taken (kg)	0.101	Natural Moisture Content (%)	12.9
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	88.5
Particle Size <4mm	>95%		

Case

SDG	230519-135
Lab Sample Number(s)	28024020
Sampled Date	18-May-2023
Customer Sample Ref.	WS02 ESZ
Depth (m)	0.50 - 0.80

Landfill Waste Acceptance
Criteria Limits

Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Solid Waste Analysis

Result

Total Organic Carbon (%)	0.252
Loss on Ignition (%)	1.25
Sum of BTEX (mg/kg)	<0.04
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg) (EH_2D_AL)	<5
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.74
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	<0.03

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)Limit values for compliance leaching test
using BS EN 12457-3 at L/S 10 l/kg

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0106	<0.0005	0.106	<0.005	0.5	2	25
Barium	0.0029	<0.0002	0.029	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00239	<0.0003	0.0239	<0.003	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00094	<0.0004	0.0094	<0.004	0.4	10	40
Lead	0.000398	<0.0002	0.00398	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00315	<0.001	0.0315	<0.01	4	50	200
Chloride	<2	<2	<20	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	5.55	<3	55.5	<30	500	800	1000

Leach Test Information

Date Prepared	21-May-2023
pH (pH Units)	7.71
Conductivity (µS/cm)	47
Volume Leachant (Litres)	0.889

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

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26/05/2023 15:53:38



CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.143

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Stanhope Road Bridge GI

Natural Moisture Content (%) 58.6

Dry Matter Content (%) 63.1

Case

SDG 230519-135

Lab Sample Number(s) 28024004

Sampled Date 18-May-2023

Customer Sample Ref. WS03 ESZ

Depth (m) 1.50 - 1.80

Eluate Analysis

C₂Concⁿ in 10:1 eluate (mg/l)A₂10:1 concⁿ leached (mg/kg)

Result

Limit of Detection

Result

Limit of Detection

Dissolved solids, Total (meter)

67.3

<10

673

<100

-

-

-

Leach Test Information

Date Prepared 23-May-2023

pH (pH Units) 8.60

Conductivity (µS/cm) 88

Volume Leachant (Litres) 0.847

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

26/05/2023 15:53:55

15:53:19 26/05/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM018	Determination of Loss on Ignition
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM104	Determination of Fluoride using the Kone Analyser
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM151	Determination of Hexavalent Chromium using Kone analyser
TM152	Analysis of Aqueous Samples by ICP-MS
TM168	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM182	Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	The determination of PAH in soil samples by GC-MS
TM222	Determination of Hot Water Soluble Boron in Soils (10:1 Water:Soil) by ICP OES.
TM243	Mixed Anions In Soils By Kone
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM259	Determination of Phenols in Waters and Leachates by HPLC
TM410	Determination of Coronene in soils by GCMS
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

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SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

Test Completion Dates

Lab Sample No(s)	28024015	28024020	28024004	28024010	28024056	28024045	28024050	28024033
Customer Sample Ref.	WS01	WS02	WS03	WS03	WS03	WS04	WS04	WS05
AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES
Depth	1.00 - 1.50	0.50 - 0.80	1.50 - 1.80	3.00 - 3.50	0.00 - 0.50	1.00 - 1.40	4.00 - 4.50	2.00 - 2.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6		24-May-2023	23-May-2023					
Anions by Kone (soil)	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023
Anions by Kone (w)		24-May-2023	25-May-2023					
Asbestos ID in Solid Samples	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	26-May-2023	25-May-2023
Boron Water Soluble	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023
CEN 10:1 Leachate (1 Stage)		21-May-2023	23-May-2023					
CEN Readings		24-May-2023	25-May-2023					
Coronene		26-May-2023	25-May-2023					
Dissolved Metals by ICP-MS		25-May-2023	25-May-2023					
Dissolved Organic/Inorganic Carbon		25-May-2023	25-May-2023					
EPH by GCxGC-FID		23-May-2023	23-May-2023					
EPH CWG GC (S)	24-May-2023	24-May-2023	23-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023	23-May-2023
Fluoride		25-May-2023	25-May-2023					
GRO by GC-FID (S)	24-May-2023	23-May-2023	23-May-2023	25-May-2023	25-May-2023	23-May-2023	23-May-2023	23-May-2023
Hexavalent Chromium (s)	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023
Loss on Ignition in soils		25-May-2023	25-May-2023					
Mercury Dissolved		25-May-2023	25-May-2023					
Metals in solid samples by OES	24-May-2023	24-May-2023	24-May-2023	26-May-2023	26-May-2023	24-May-2023	25-May-2023	24-May-2023
Moisture at 105C		21-May-2023	23-May-2023					
PAH 16 & 17 Calc		26-May-2023	25-May-2023					
PAH by GCMS	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	24-May-2023	24-May-2023	24-May-2023
PCBs by GCMS	26-May-2023	26-May-2023	26-May-2023		26-May-2023			
pH	23-May-2023	23-May-2023	23-May-2023	25-May-2023	25-May-2023	23-May-2023	23-May-2023	23-May-2023
pH Value of Filtered Water		24-May-2023	25-May-2023					
Phenols by HPLC (S)	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023	25-May-2023
Phenols by HPLC (W)		25-May-2023	26-May-2023					
Sample description	20-May-2023	20-May-2023	20-May-2023	23-May-2023	23-May-2023	20-May-2023	20-May-2023	20-May-2023
Total Organic Carbon		25-May-2023	26-May-2023					
TPH CWG GC (S)	24-May-2023	24-May-2023	23-May-2023	25-May-2023	25-May-2023	24-May-2023	24-May-2023	23-May-2023
VOC MS (S)	26-May-2023	23-May-2023	23-May-2023	25-May-2023	25-May-2023	23-May-2023	23-May-2023	23-May-2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

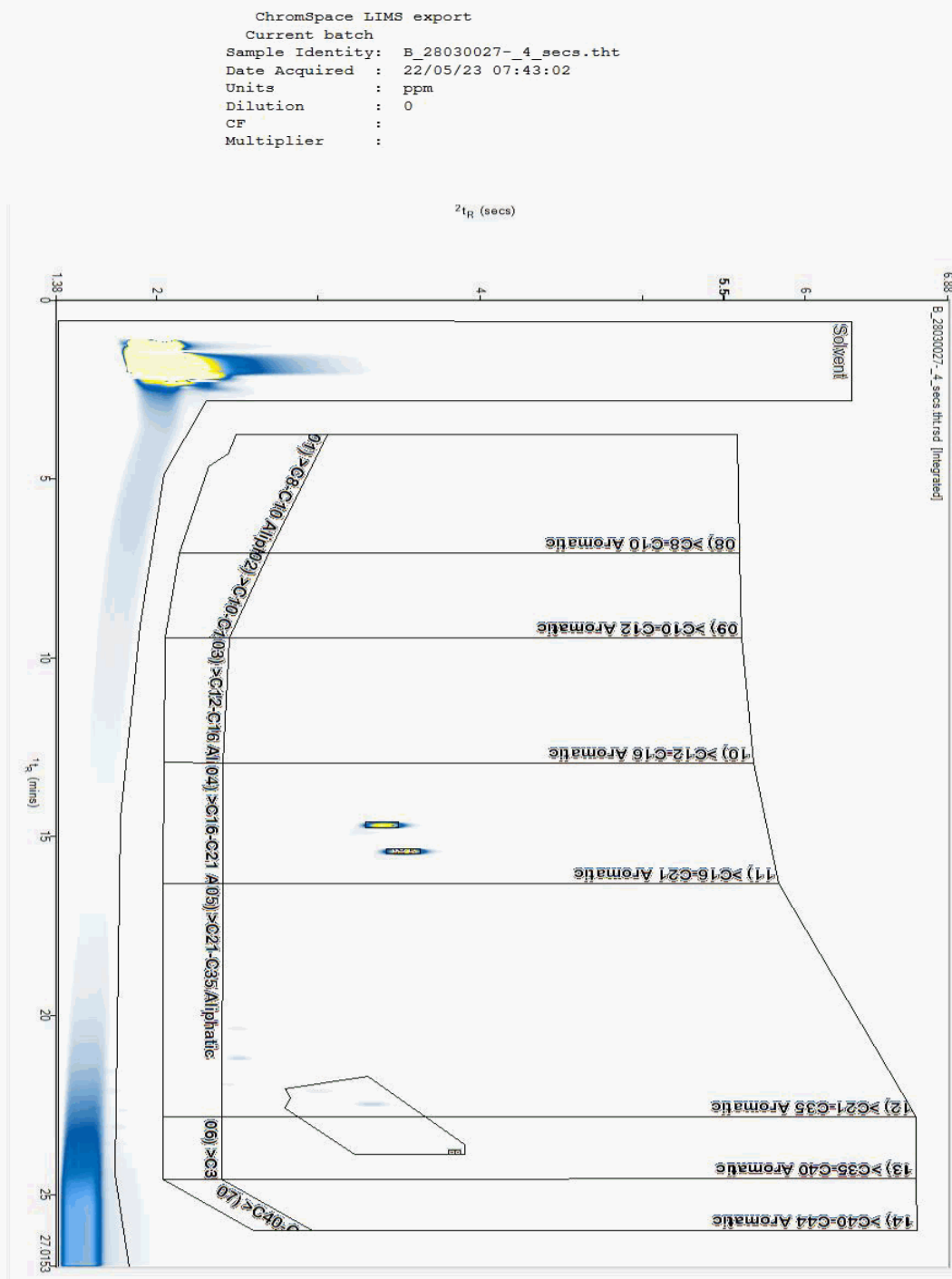
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 28030027
Sample ID : WS03

Depth : 1.50 - 1.80





CERTIFICATE OF ANALYSIS

Validated

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Client Ref.: 70085596

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Location: Stanhope Road Bridge GI

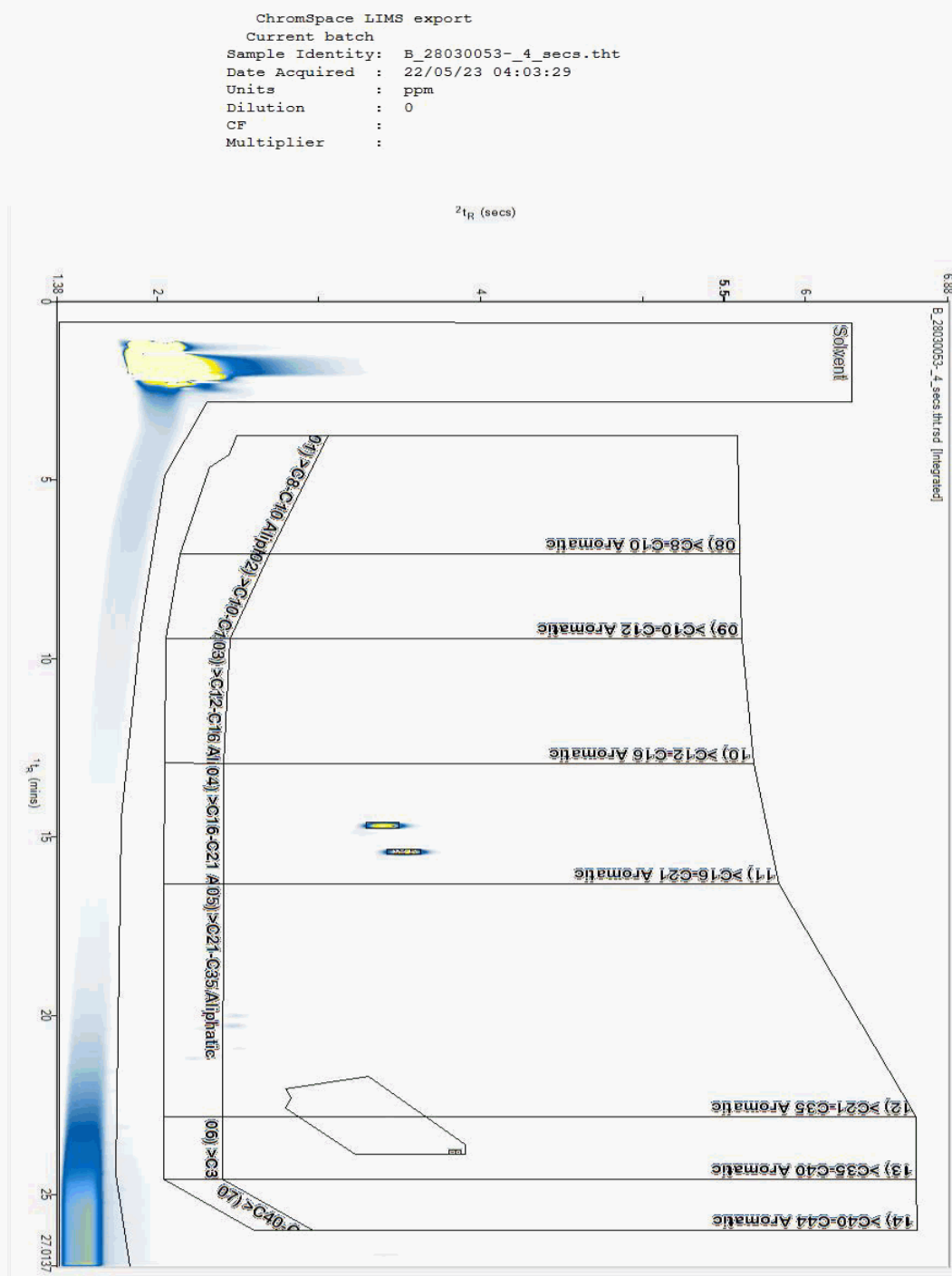
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 28030053
Sample ID : WS05

Depth : 2.00 - 2.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

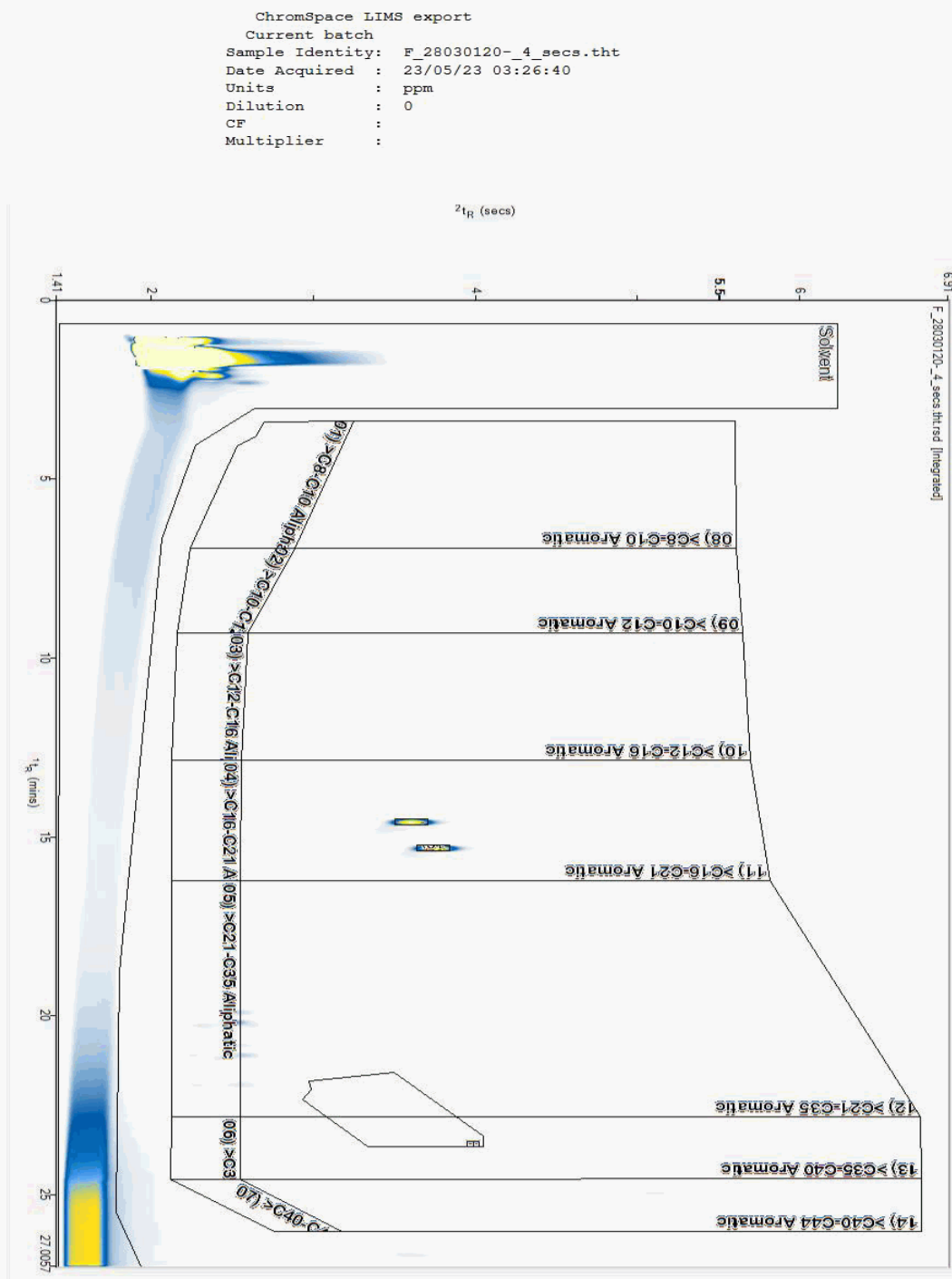
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 28030120
Sample ID : WS04

Depth : 4.00 - 4.50



SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

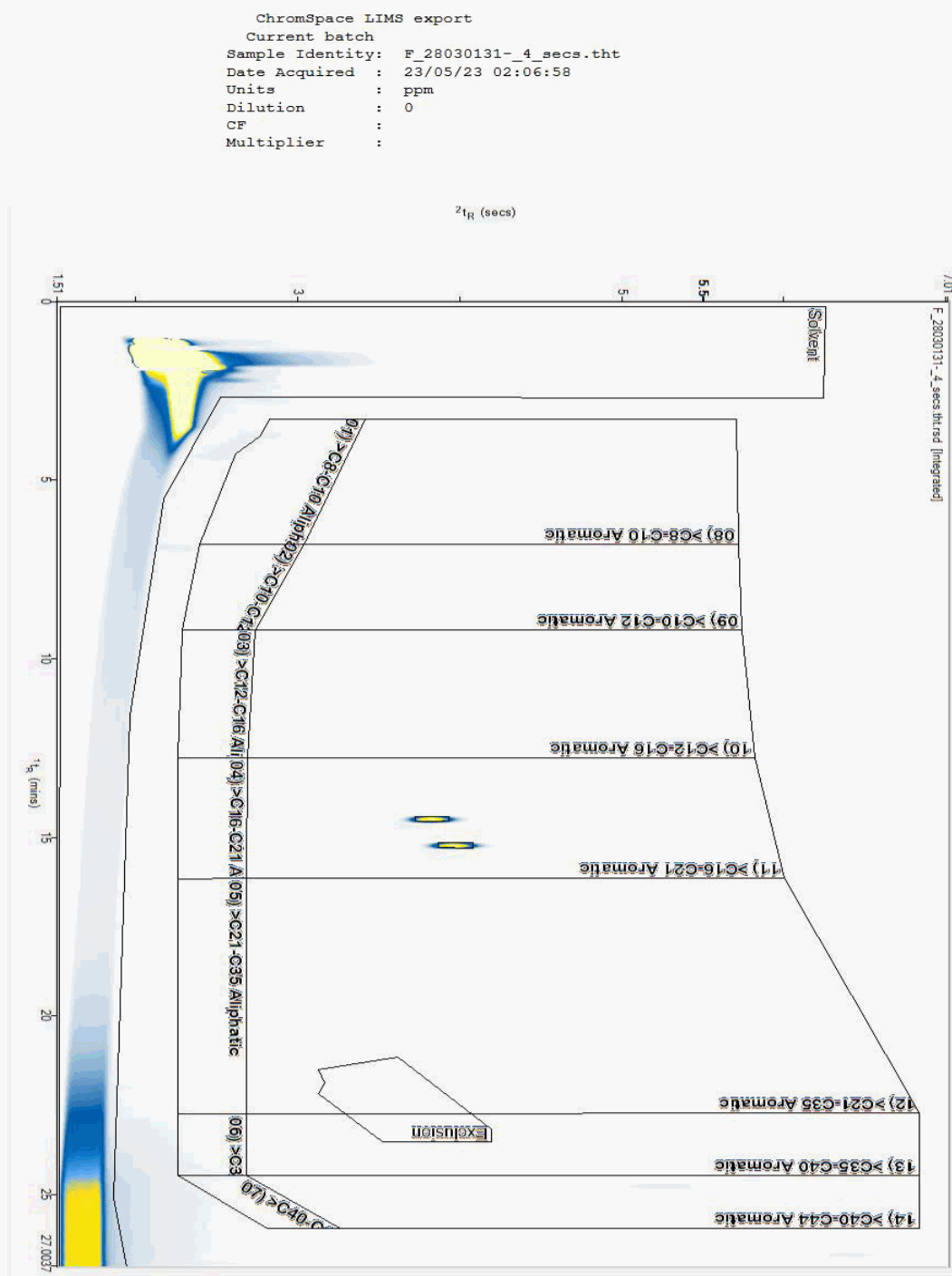
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 28030131
Sample ID : WS04

Depth : 1.00 - 1.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

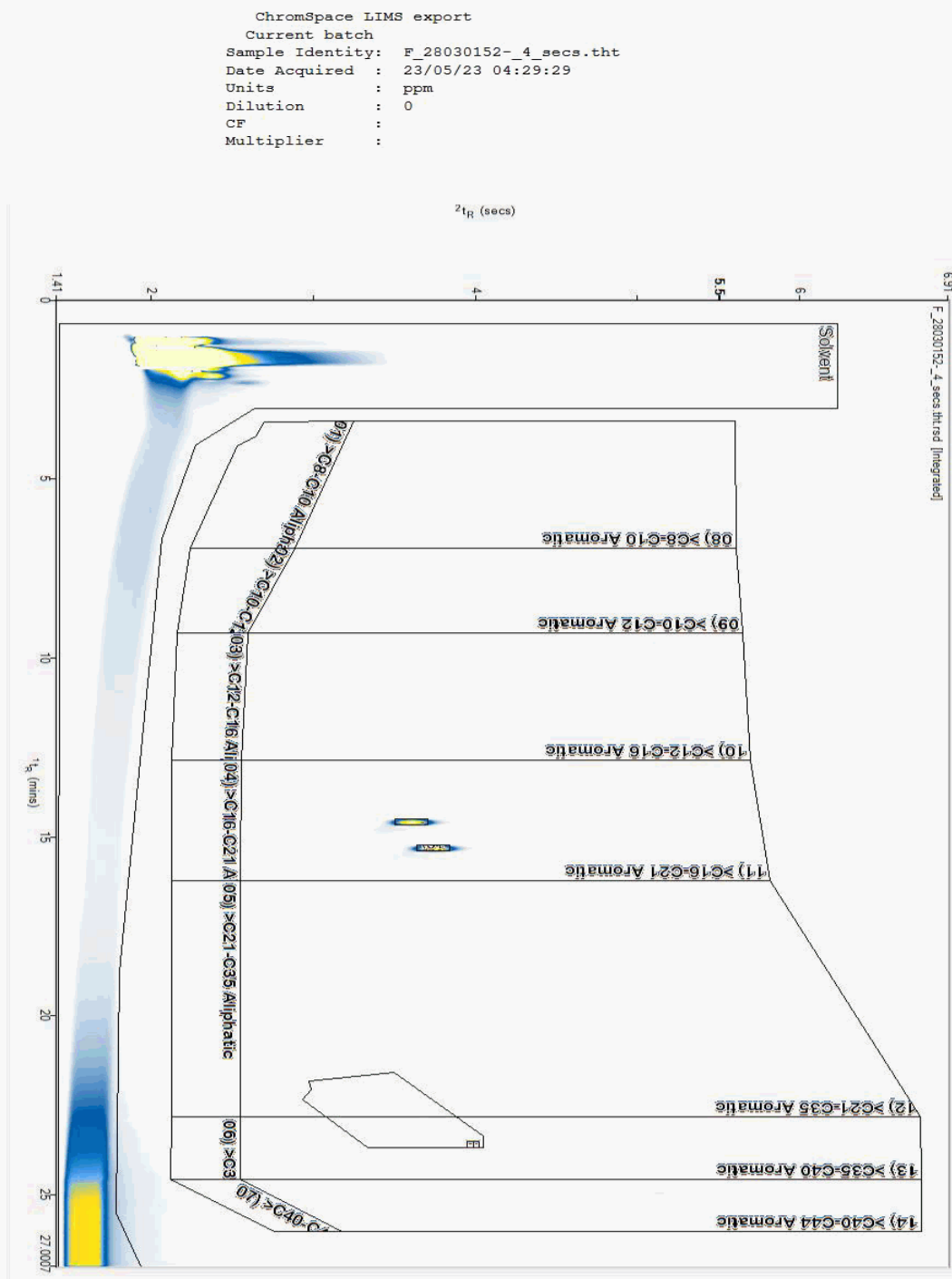
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 28030152
Sample ID : WS01

Depth : 1.00 - 1.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

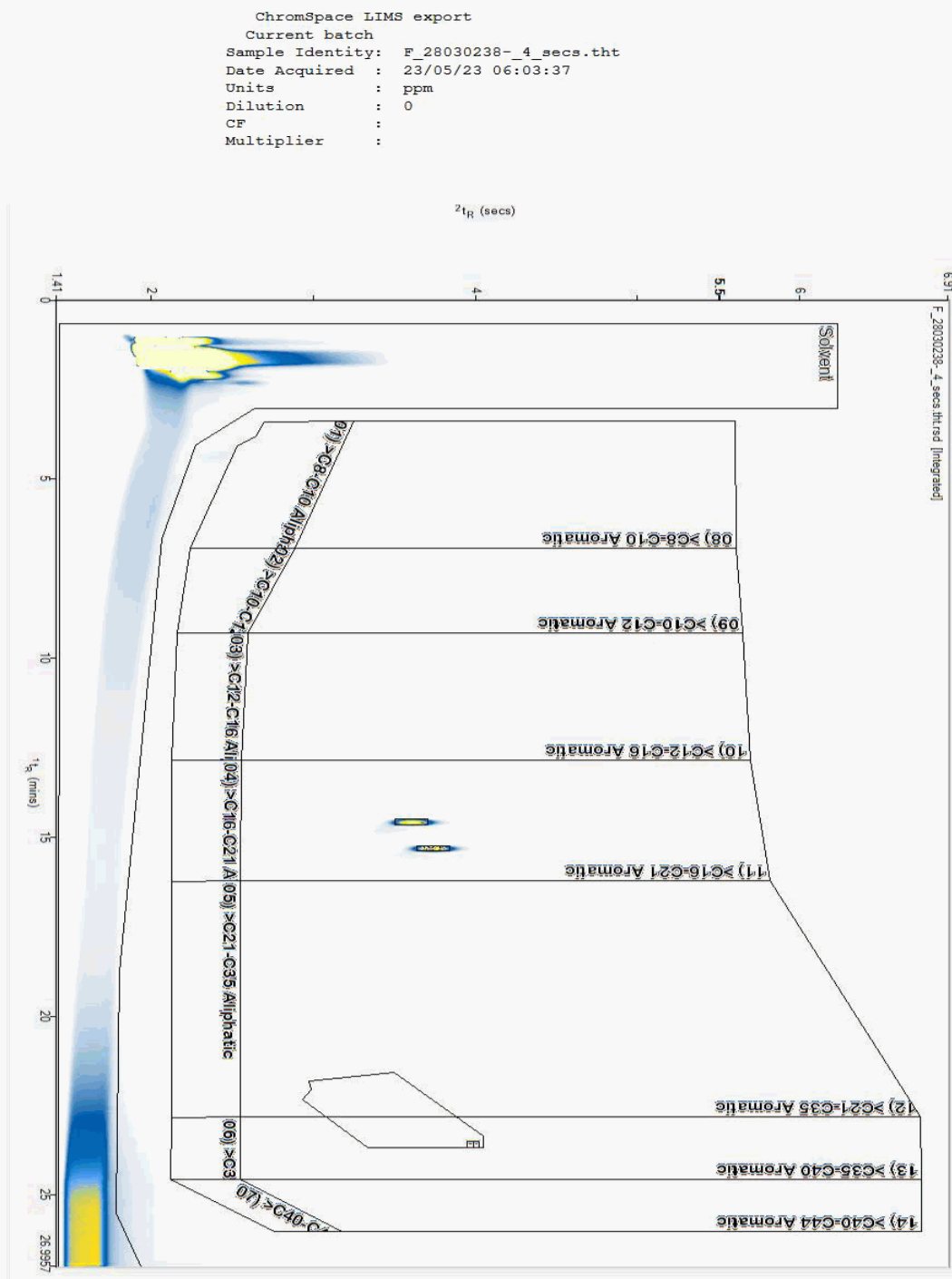
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 28030238
Sample ID : WS02

Depth : 0.50 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

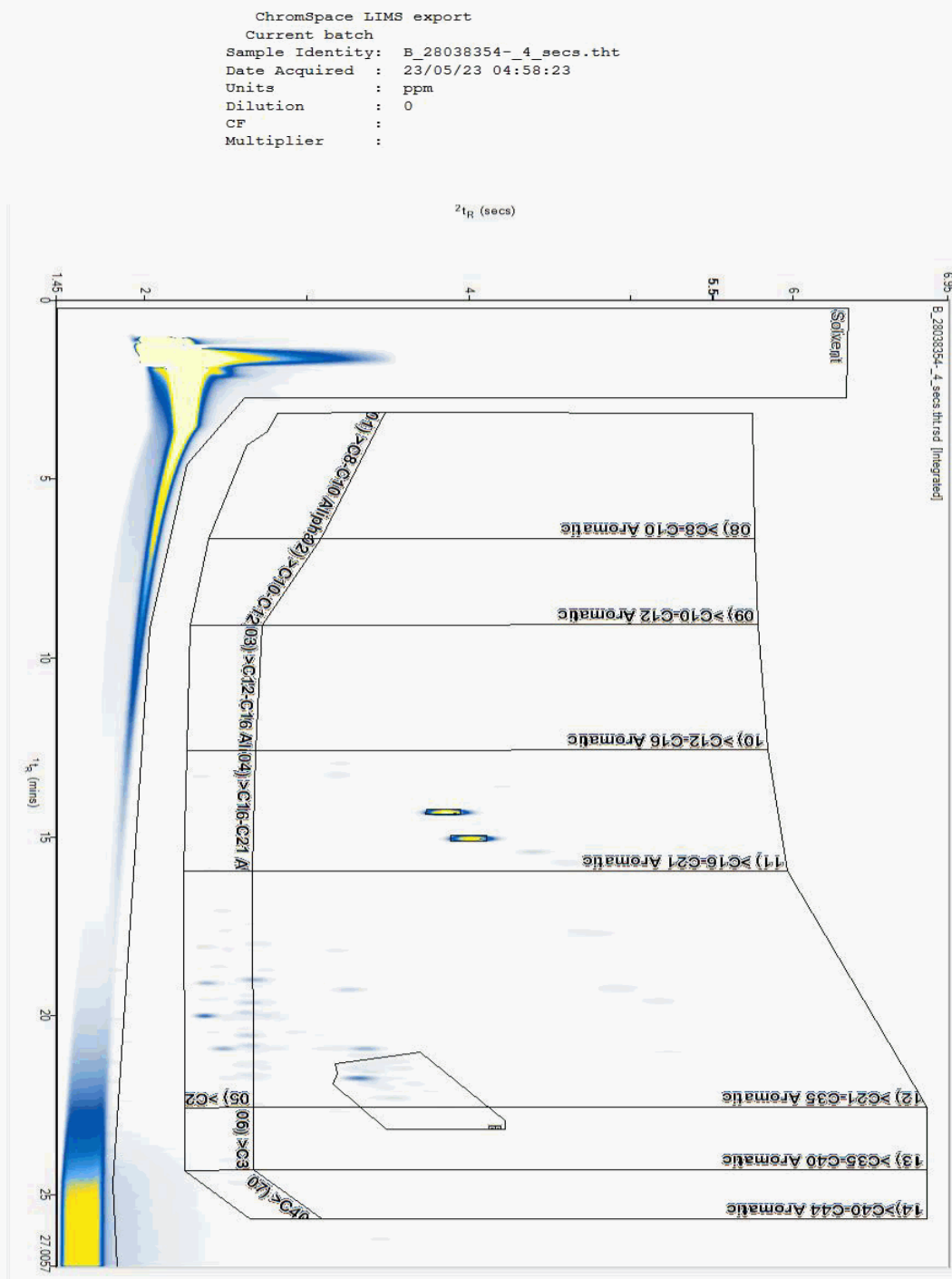
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 28038354
Sample ID : WS03

Depth : 0.00 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

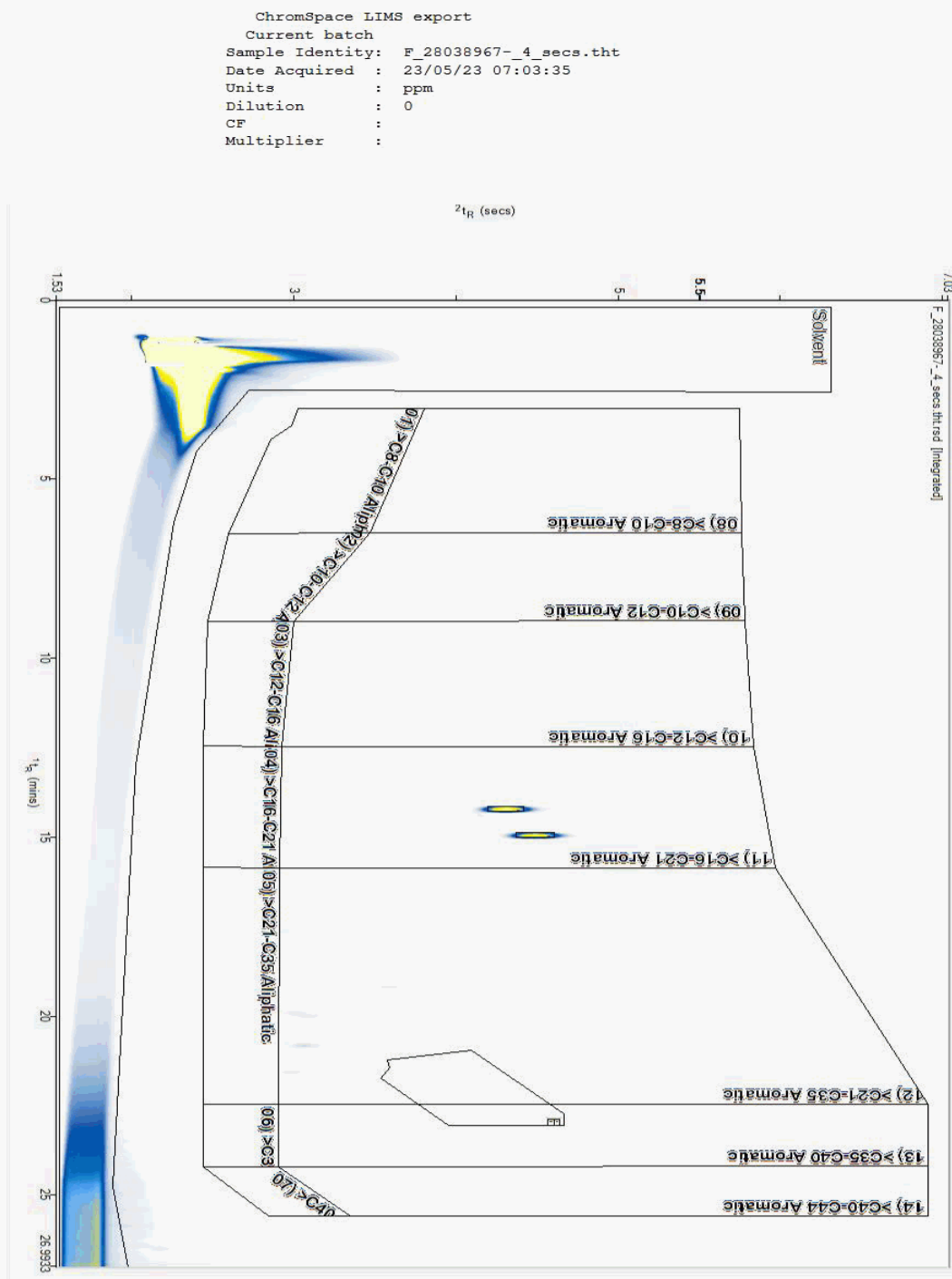
Superseded Report:

Chromatogram

Analysis: EPH CWG GC (S)

Sample No : 28038967
Sample ID : WS03

Depth : 3.00 - 3.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

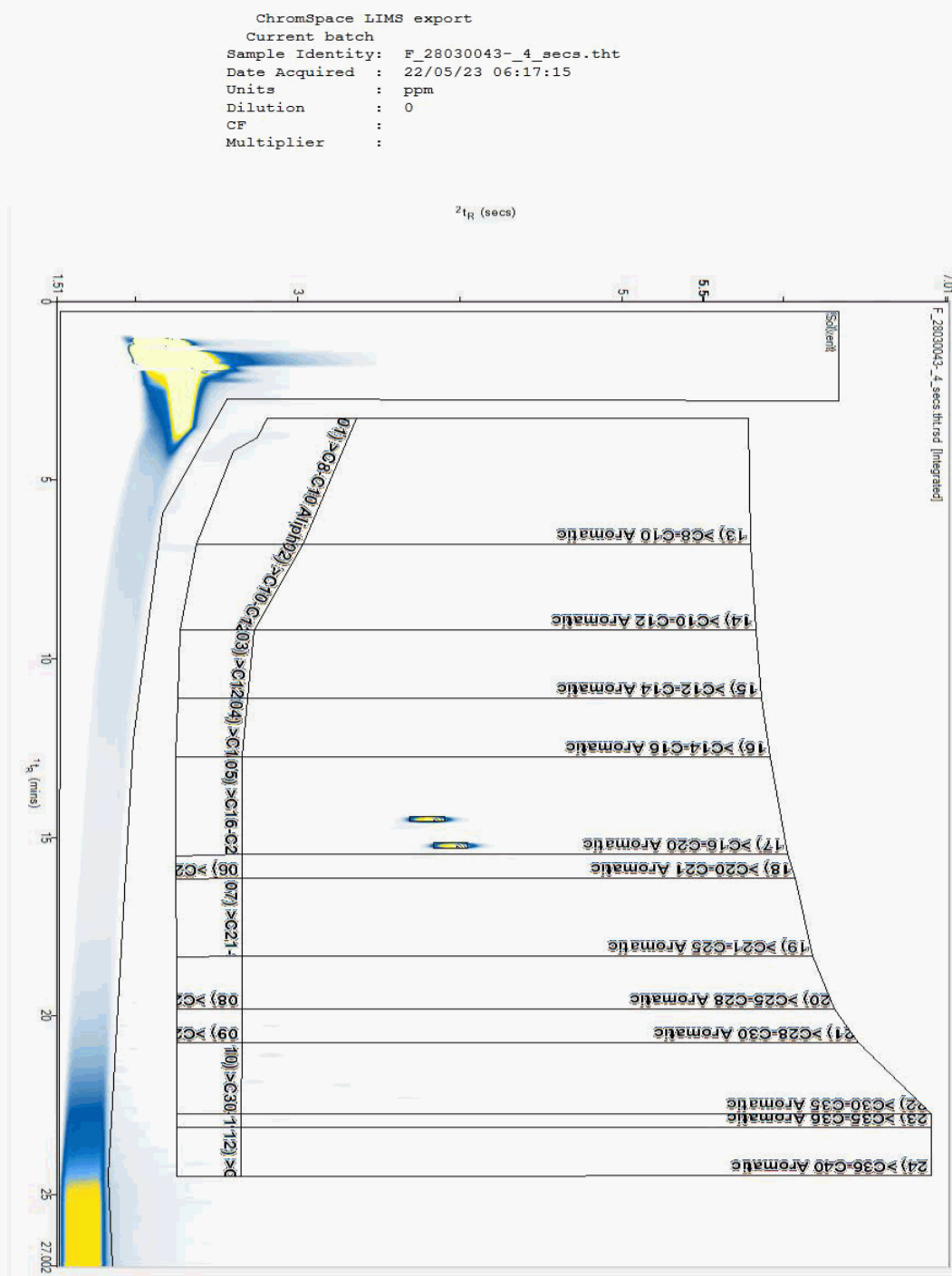
Superseded Report:

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 28030043
Sample ID : WS03

Depth : 1.50 - 1.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

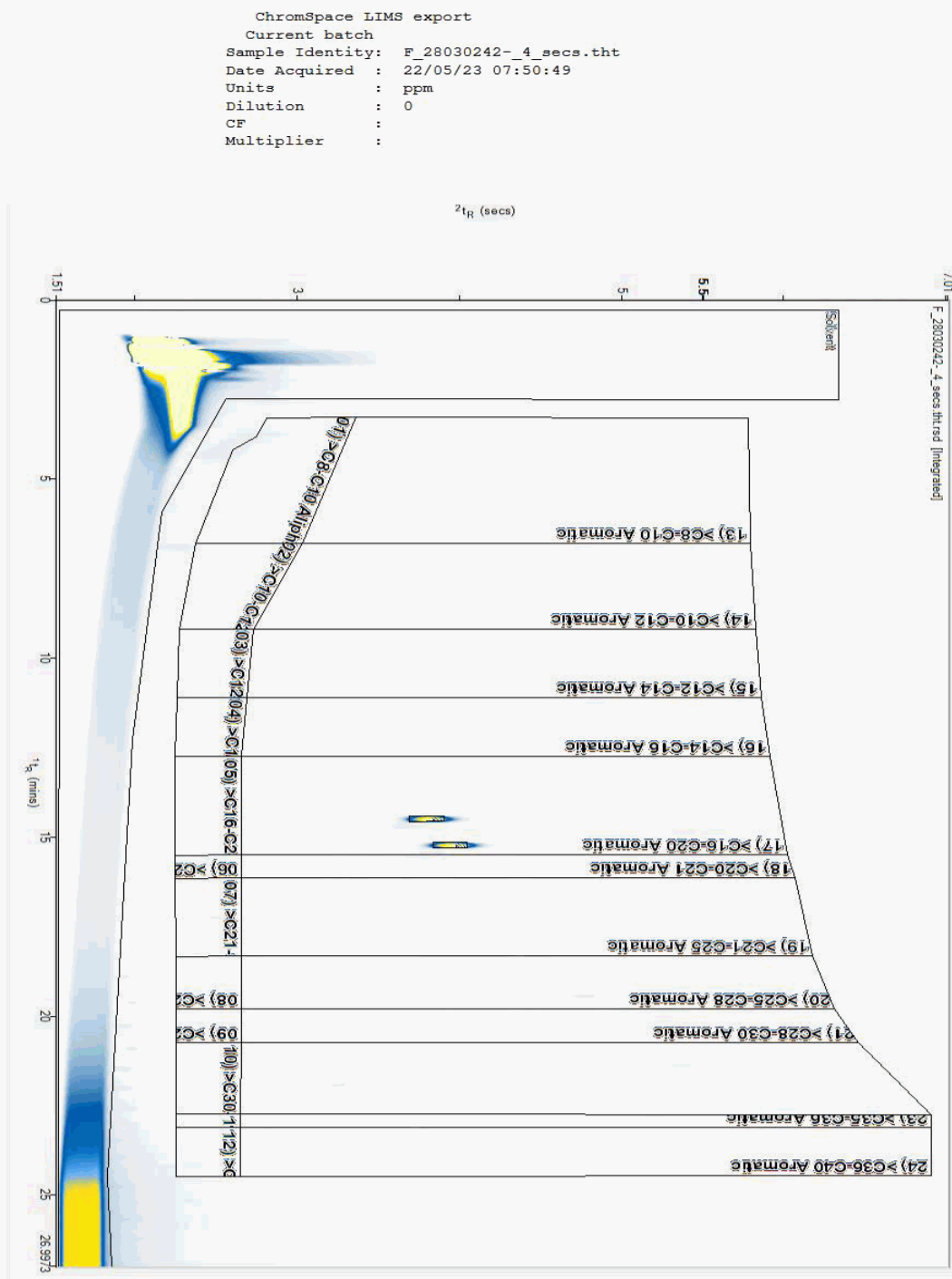
Superseded Report:

Chromatogram

Analysis: EPH by GCxGC-FID

Sample No : 28030242
Sample ID : WS02

Depth : 0.50 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

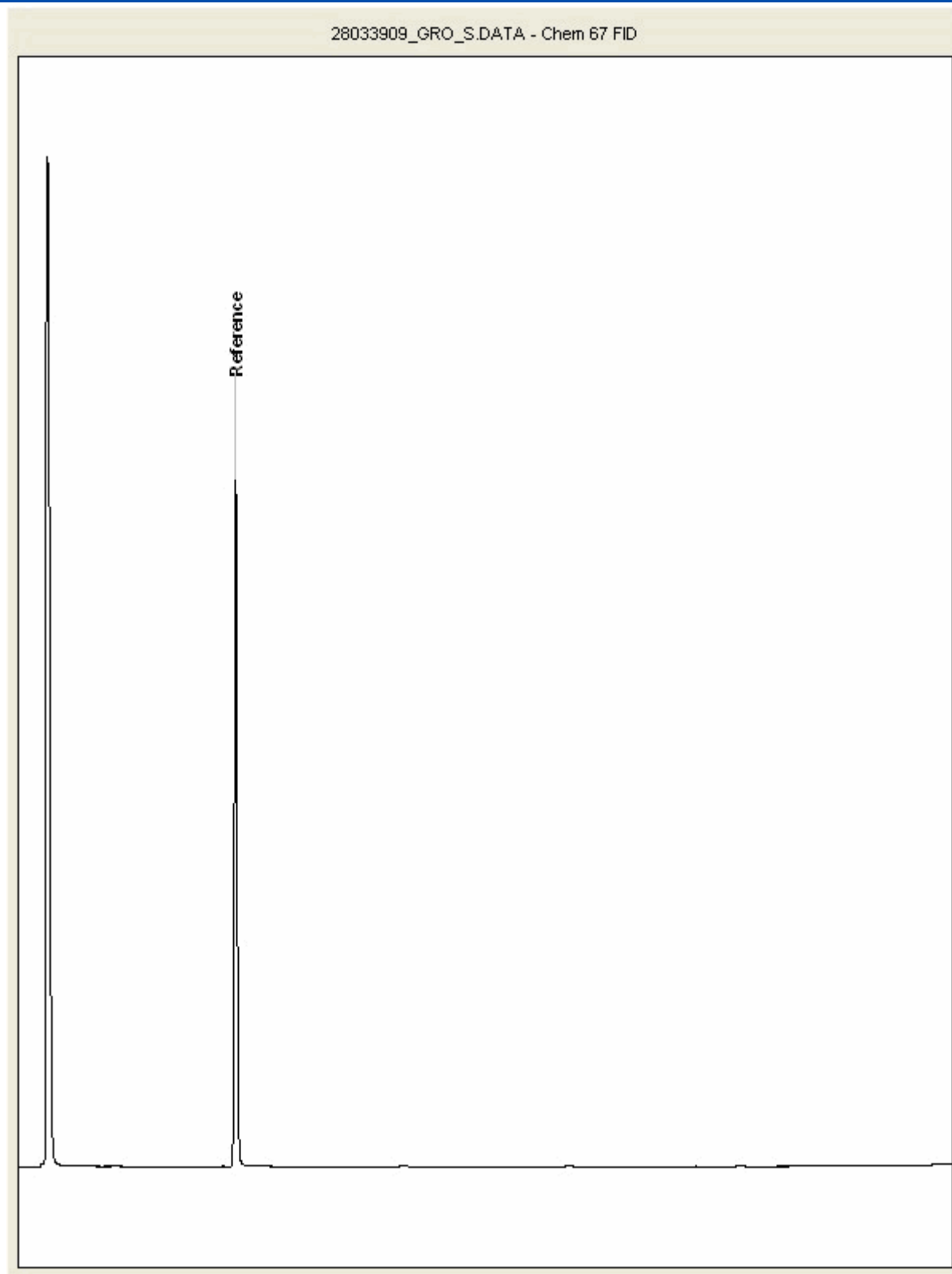
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 28033909
Sample ID : WS04

Depth : 1.00 - 1.40





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

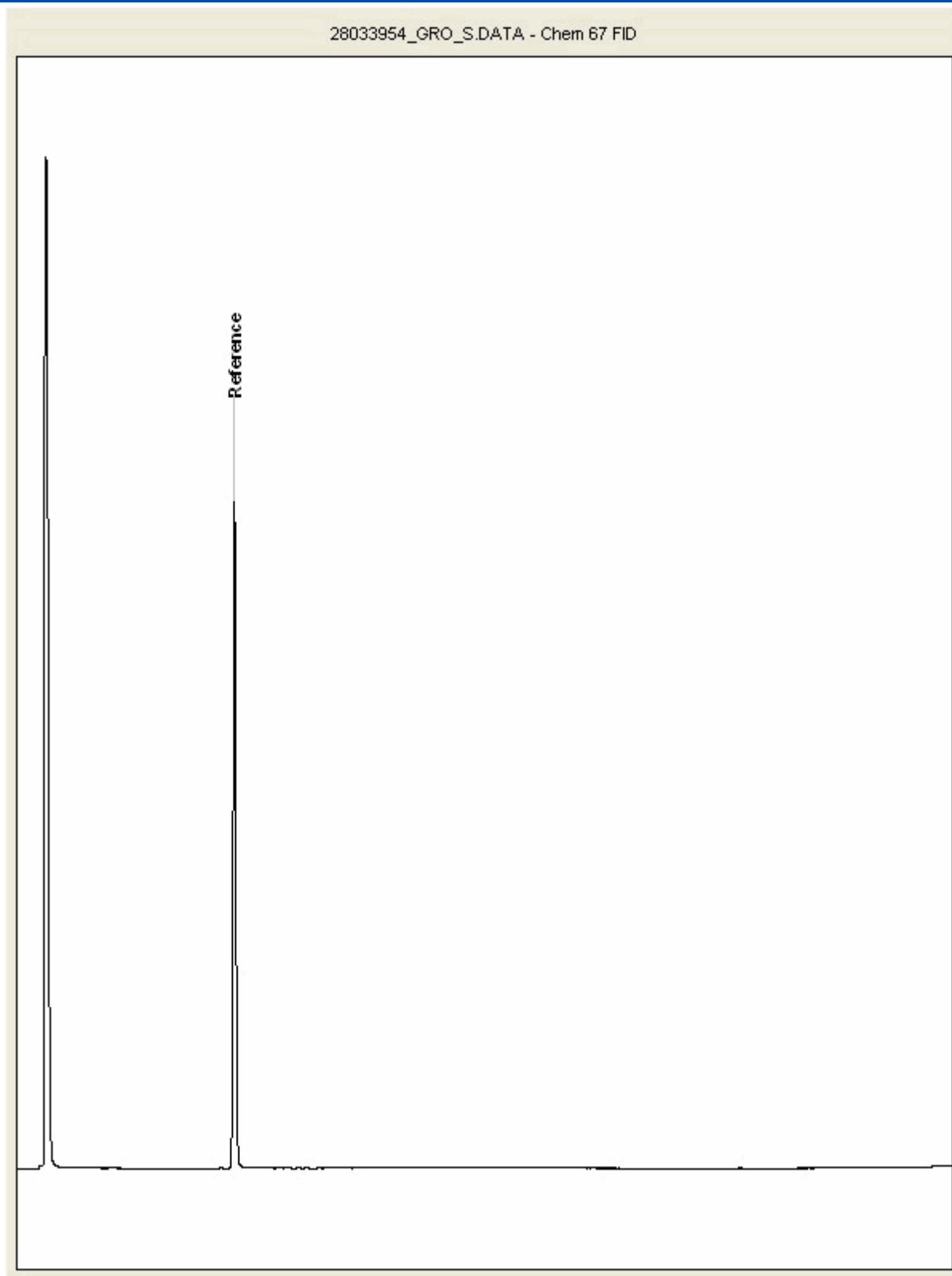
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 28033954
Sample ID : WS05

Depth : 2.00 - 2.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

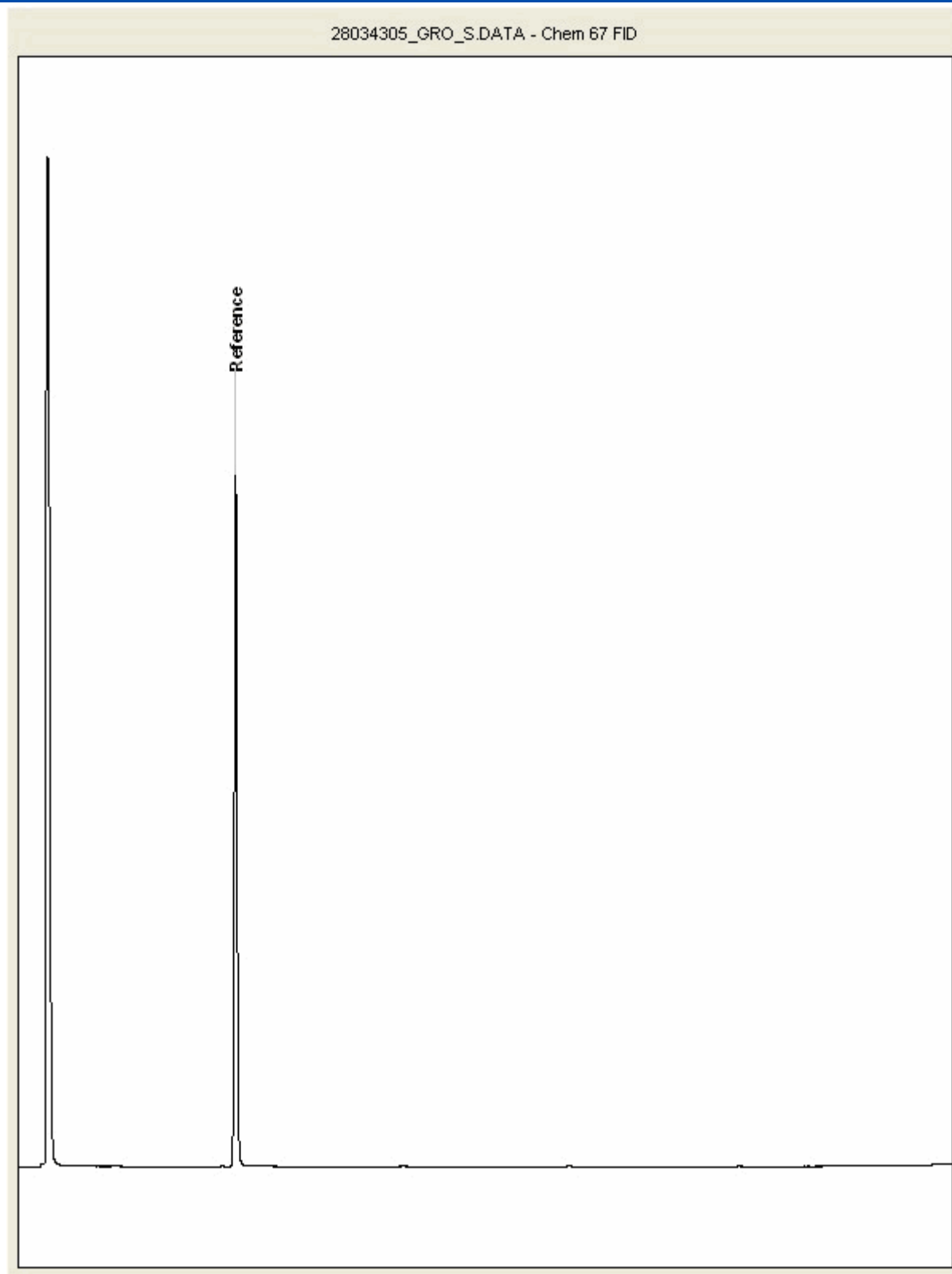
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 28034305
Sample ID : WS04

Depth : 4.00 - 4.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

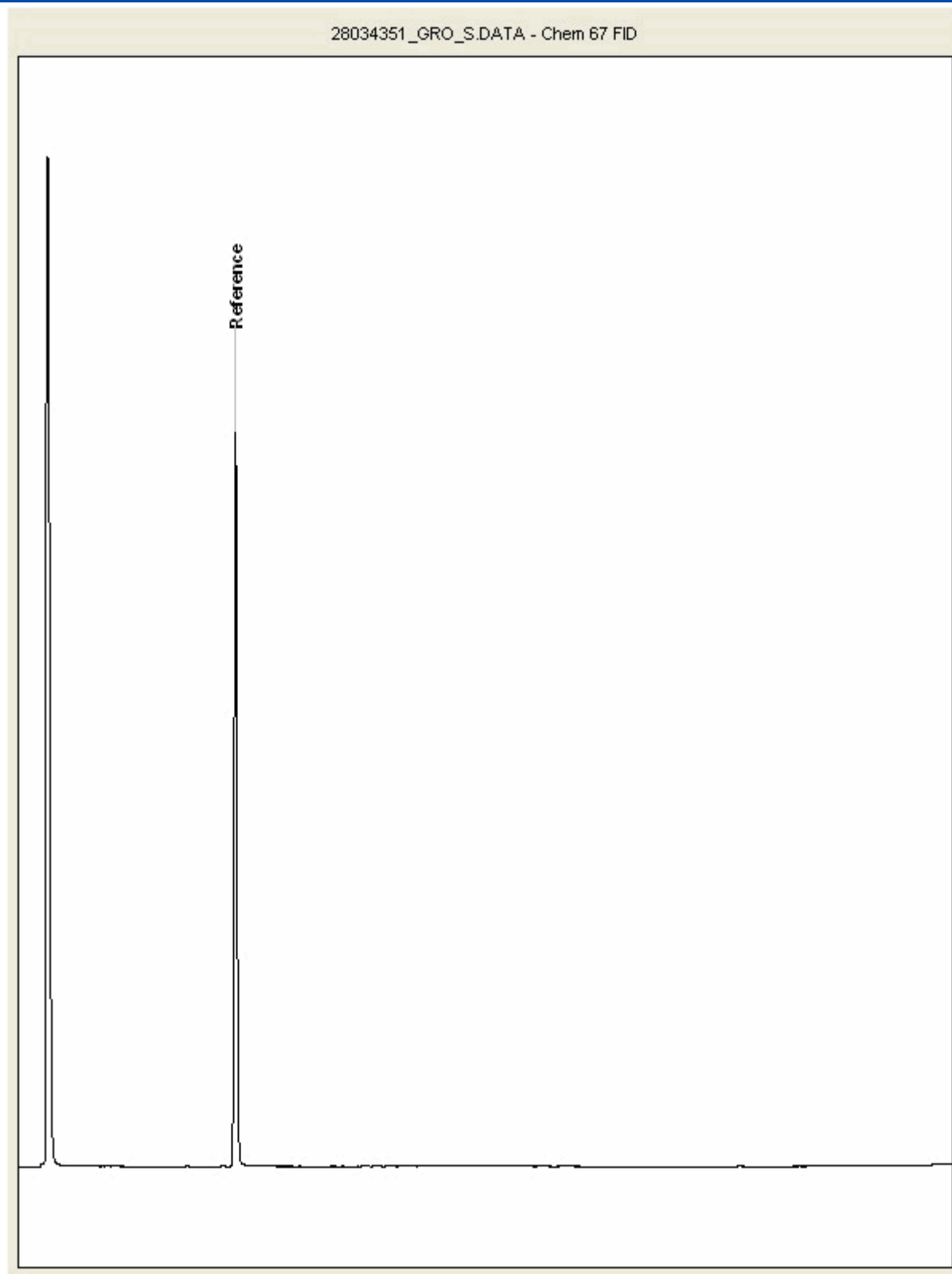
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 28034351
Sample ID : WS03

Depth : 3.00 - 3.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

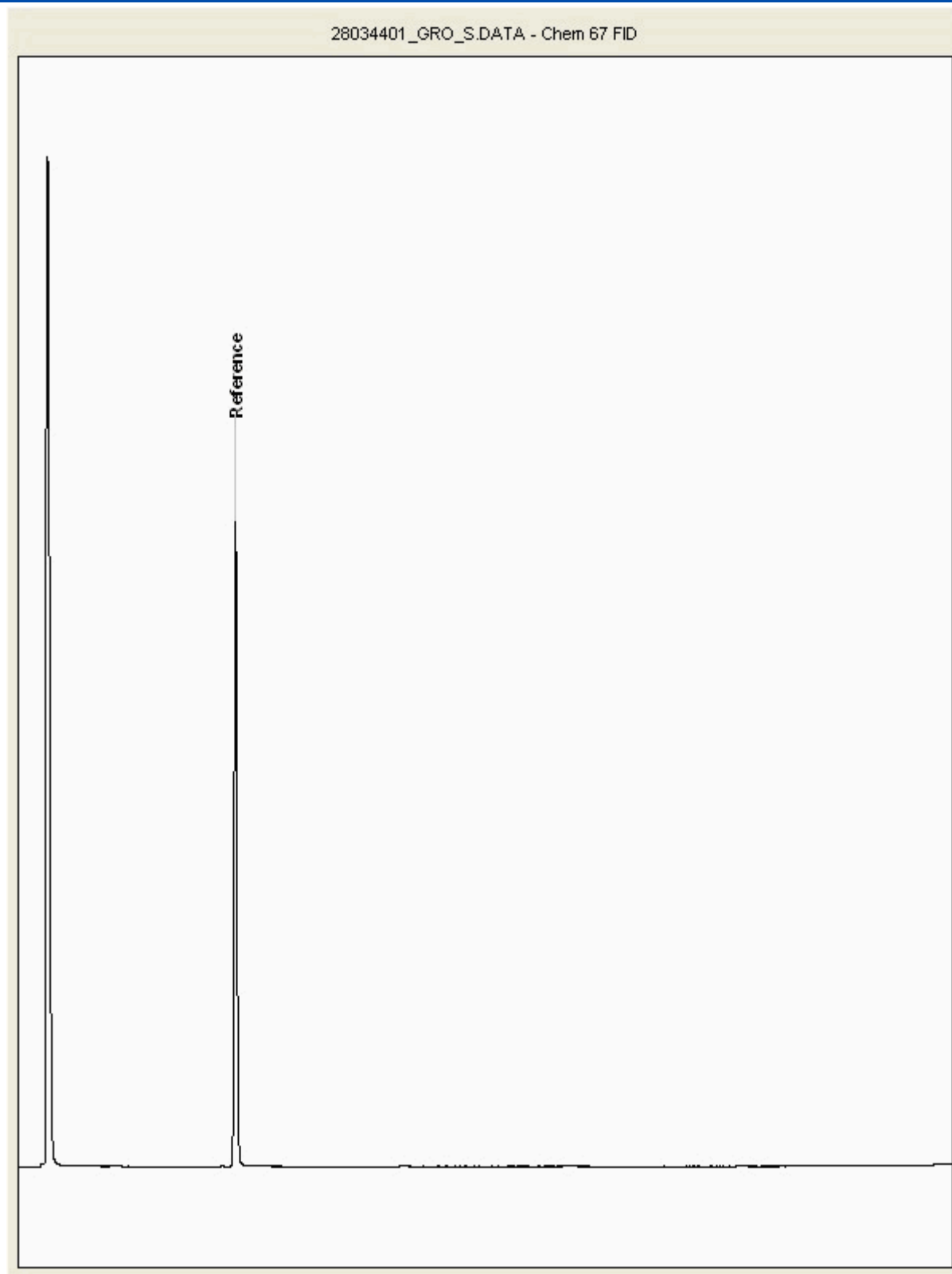
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 28034401
Sample ID : WS02

Depth : 0.50 - 0.80





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

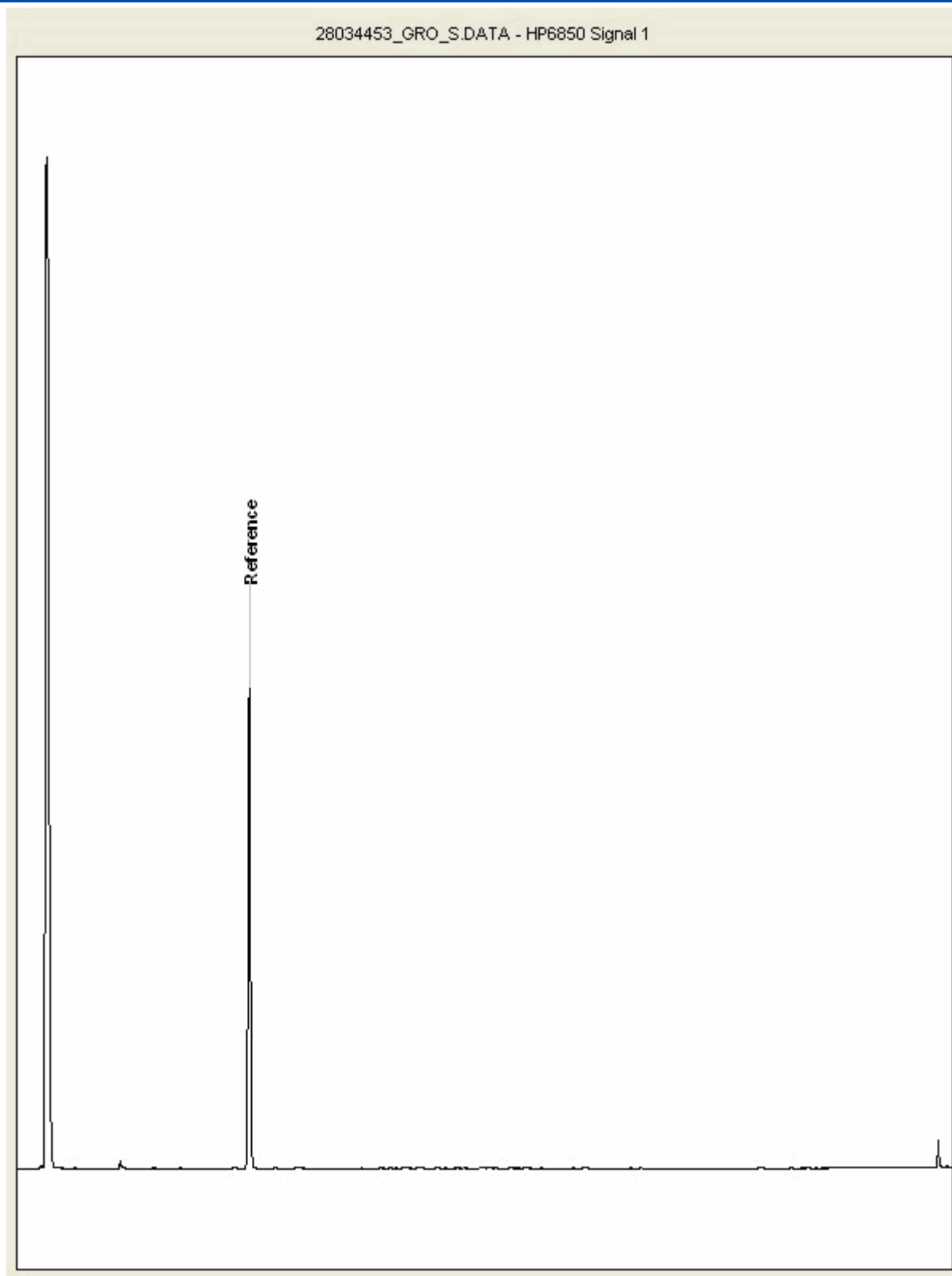
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 28034453
Sample ID : WS03

Depth : 0.00 - 0.50





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

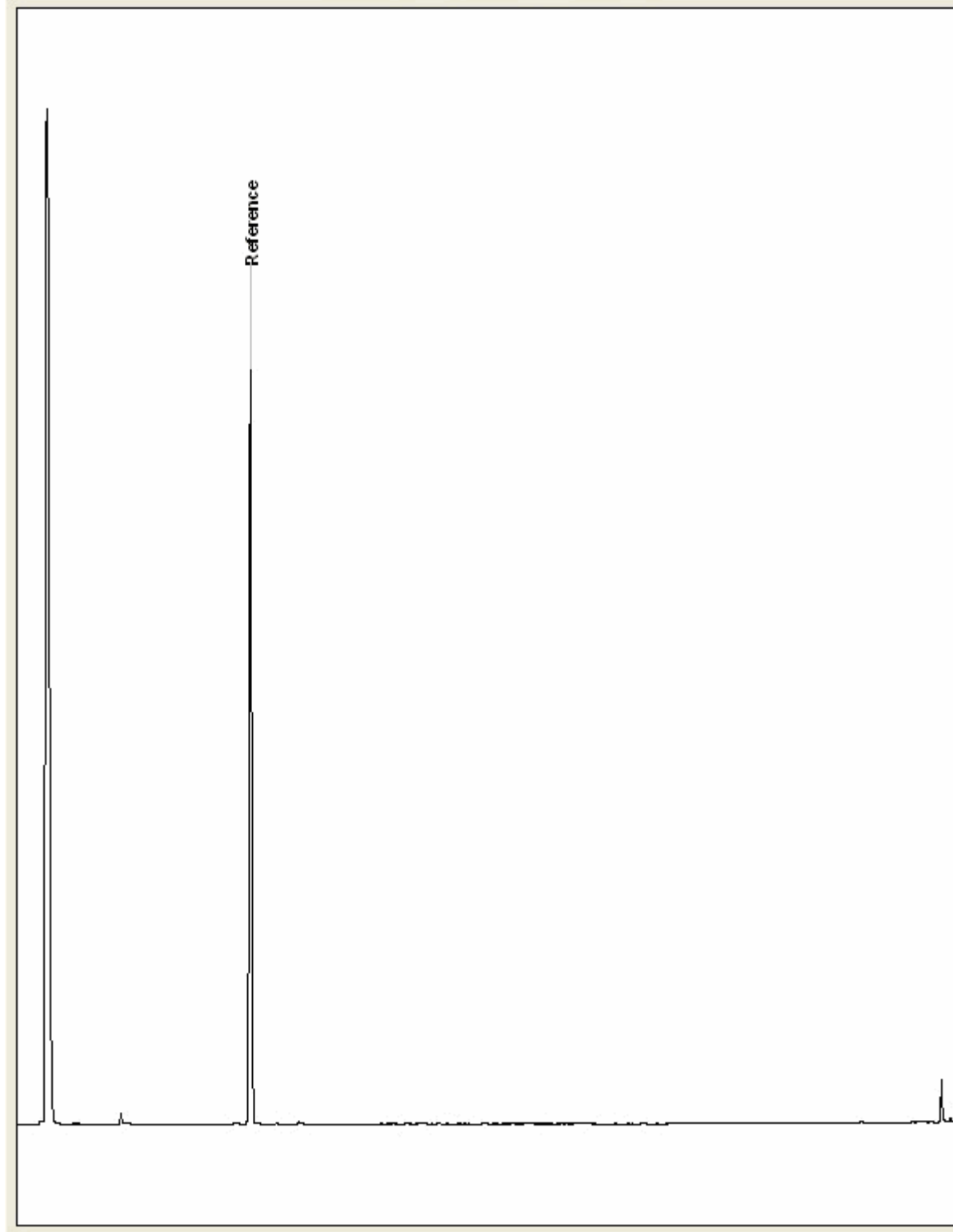
Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 28037021
Sample ID : WS03

Depth : 1.50 - 1.80

28037021_GRO_S.DATA - HP6850 Signal 1





CERTIFICATE OF ANALYSIS

Validated

SDG: 230519-135
Client Ref.: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

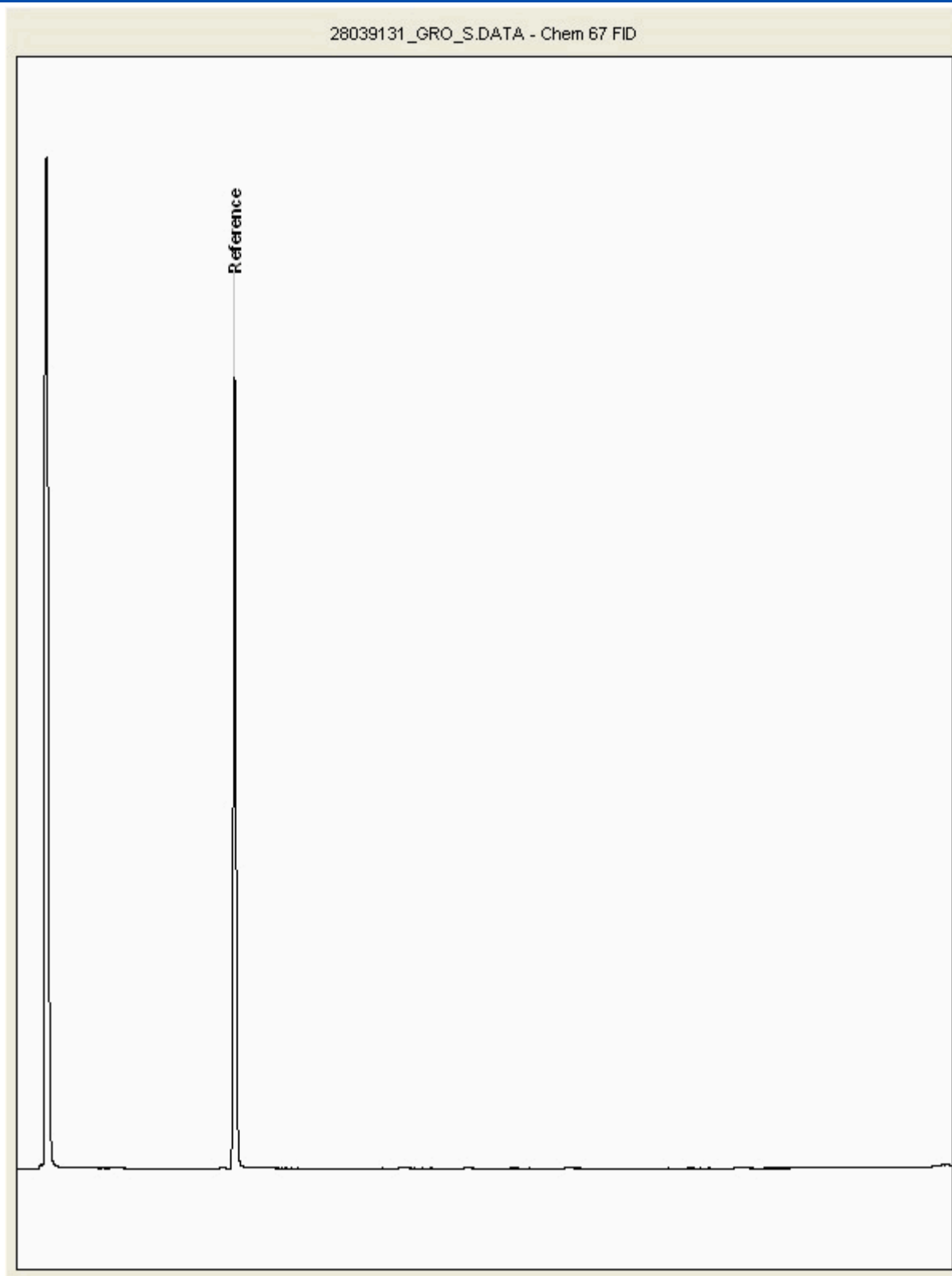
Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 28039131
Sample ID : WS01

Depth : 1.00 - 1.50

28039131_GRO_S.DATA - Chem 67 FID





CERTIFICATE OF ANALYSIS

SDG: 230519-135
Client Ref: 70085596

Report Number: 690448
Location: Stanhope Road Bridge GI

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Appendix F

PRELIMINARY WASTE ASSESSMENT





Waste Classification Report

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

- 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)



UFDRY-D0MBW-1ZQ4T

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

Job name

Stanhope Road Bridge

Description/Comments

This is a preliminary conservative assessment based on a data set from the following ALS report ref: 230519-135. The site comprises a disused railway line that is currently used as a public footbridge. The footbridge runs east to west and is constructed over Stanhope Road on manmade embankments. It is proposed to construct a new footbridge and abutments; a new pedestrian and cycle ramp and pedestrian stairway; and reprofile landscaping of all existing embankments.

The demolition waste materials and any infilling soils encountered that cannot be re-used will be taken for off-site disposal. This is an initial assessment to support a ground investigation report.

It should be noted that any waste accepted into a landfill is at the landfill operators discretion, and that additional sampling and analysis may be required should materials be designated for off-site disposal.

Project

70085596

Site

Stanhope Road Bridge

Classified by

Name: Alice Waylett
Date: 09 Jun 2023 07:17 GMT
Telephone: 01992 526 000
Company: WSP
Unit 9 The Chase, John Tate Road, Foxholes Business Park, Hertford SG13 7NN

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

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification

Date

06 Oct 2022

Next 3 year Refresher due by Oct 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Stanhope Road Bridge, Haringey, N6 5DE

Post Code N6 5DE

SIC for the process giving rise to the waste

41100 Development of building projects

Description of industry/producer giving rise to the waste

Redevelopment of existing footbridge, bridge abutments and bridge wingwalls. Reprofiling and landscaping of all existing embankments.

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

Demolition waste materials and any infilling soils that cannot be re-used will be taken off site for disposal.

Description of the waste

Made Ground comprising slightly gravelly clays with brick and flint, gravels of brick and sands with brick, coal and glass.



Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS01-180523-1.50-1.00		Non Hazardous		3
2	WS02-180523-0.80-0.50		Non Hazardous		6
3	WS03-180523-1.80-1.50		Non Hazardous		9
4	WS03-180523-3.50-3.00		Non Hazardous		12
5	WS03-180523-0.50-0.00		Non Hazardous		15
6	WS04-180523-1.40-1.00		Non Hazardous		18
7	WS04-180523-4.50-4.00		Non Hazardous		21
8	WS05-180523-2.50-2.00		Non Hazardous		24

Related documents

#	Name	Description
1	230519-135.hwol	ALS Hawarden .hwol file used to populate the Job
2	WM3 v1.2 template with asbestos	waste stream template used to create this Job

Report

Created by: Alice Waylett

Created date: 09 Jun 2023 07:17 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	27
Appendix B: Rationale for selection of metal species	29
Appendix C: Version	29

Classification of sample: WS01-180523-1.50-1.00

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

Sample details

Sample name:	LoW Code:
WS01-180523-1.50-1.00	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
18% (wet weight correction)	

Hazard properties

None identified

Determinands

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

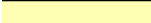
#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	 arsenic { arsenic trioxide }				12.5	mg/kg	1.32	13.533	mg/kg	0.00135 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	 beryllium { beryllium oxide }				1.13	mg/kg	2.775	2.572	mg/kg	0.000257 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
3	 boron { diboron trioxide; boric oxide }				<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	 cadmium { cadmium oxide }				0.0239	mg/kg	1.142	0.0224	mg/kg	0.00000224 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				32.3	mg/kg	1.462	38.711	mg/kg	0.00387 %	✓	
		215-160-9	1308-38-9									
6	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.6	mg/kg	2.27	<1.362	mg/kg	<0.000136 %		<LOD
	024-017-00-8											
7	 copper { dicopper oxide; copper (I) oxide }				14.5	mg/kg	1.126	13.387	mg/kg	0.00134 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	 lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	13	mg/kg		10.66	mg/kg	0.00107 %	✓	
	082-001-00-6											
9	 mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	 nickel { nickel sulfate }				24.2	mg/kg	2.637	52.322	mg/kg	0.00523 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
11	 selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	 zinc { zinc sulphate }				44.1	mg/kg	2.469	89.295	mg/kg	0.00893 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
13	 TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
15	benzene				<0.18	mg/kg		<0.18	mg/kg	<0.000018 %		<LOD
	601-020-00-8	200-753-7	71-43-2									



#	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								
16	toluene				<0.14 mg/kg		<0.14 mg/kg	<0.000014 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.08 mg/kg		<0.08 mg/kg	<0.000008 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.4 mg/kg		<0.4 mg/kg	<0.00004 %			<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]								
19	pH		PH		7.51 pH		7.51 pH	7.51 pH			
20	naphthalene				<0.009 mg/kg		<0.009 mg/kg	<0.000009 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %			<LOD
		205-917-1	208-96-8								
22	acenaphthene				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %			<LOD
		201-469-6	83-32-9								
23	fluorene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
		201-695-5	86-73-7								
24	phenanthrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		201-581-5	85-01-8								
25	anthracene				<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %			<LOD
		204-371-1	120-12-7								
26	fluoranthene				<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %			<LOD
		205-912-4	206-44-0								
27	pyrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		204-927-3	129-00-0								
28	benzo[a]anthracene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %			<LOD
		205-893-2	193-39-5								
34	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
35	benzo[ghi]perylene				<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %			<LOD
		205-883-8	191-24-2								
36	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
37	polychlorobiphenyls; PCB				<0.021 mg/kg		<0.021 mg/kg	<0.0000021 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
38	barium { barium sulphide }				32 mg/kg	1.233	32.367 mg/kg	0.00324 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
39	2-methoxy-2-methylbutane; tert-amyl methyl ether				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
	603-213-00-2	213-611-4	994-05-8								
40	vanadium { divanadium pentaoxide; vanadium pentoxide }				62 mg/kg	1.785	90.759 mg/kg	0.00908 %		✓	
	023-001-00-8	215-239-8	1314-62-1								
Total:									0.0362 %		



Key

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

Classification of sample: **WS02-180523-0.80-0.50**

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

Sample details

Sample name:	LoW Code:
WS02-180523-0.80-0.50	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.3% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.3% Wet Weight 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	arsenic { arsenic trioxide }				18.4 mg/kg	1.32	22.035 mg/kg	0.0022 %	✓		
	033-003-00-0	215-481-4	1327-53-3								
2	beryllium { beryllium oxide }				0.766 mg/kg	2.775	1.928 mg/kg	0.000193 %	✓		
	004-003-00-8	215-133-1	1304-56-9								
3	boron { diboron trioxide; boric oxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				0.101 mg/kg	1.142	0.105 mg/kg	0.0000105 %	✓		
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				10.2 mg/kg	1.462	13.521 mg/kg	0.00135 %	✓		
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.6 mg/kg	2.27	<1.362 mg/kg	<0.000136 %			<LOD
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				19.1 mg/kg	1.126	19.505 mg/kg	0.00195 %	✓		
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	15.4 mg/kg		13.968 mg/kg	0.0014 %	✓		
	082-001-00-6										
9	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel sulfate }				16.4 mg/kg	2.637	39.22 mg/kg	0.00392 %	✓		
	028-009-00-5	232-104-9	7786-81-4								
11	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
12	zinc { zinc sulphate }				30.7 mg/kg	2.469	68.757 mg/kg	0.00688 %	✓		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
13	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
15	benzene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %			<LOD
	601-020-00-8	200-753-7	71-43-2								



#	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								
16	toluene				<0.007 mg/kg		<0.007 mg/kg	<0.0000007 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<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]								
19	pH				8.74 pH		8.74 pH	8.74 pH			
			PH								
20	naphthalene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %			<LOD
		205-917-1	208-96-8								
22	acenaphthene				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %			<LOD
		201-469-6	83-32-9								
23	fluorene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
		201-695-5	86-73-7								
24	phenanthrene				0.0387 mg/kg		0.0351 mg/kg	0.00000351 %	✓		
		201-581-5	85-01-8								
25	anthracene				0.019 mg/kg		0.0172 mg/kg	0.00000172 %	✓		
		204-371-1	120-12-7								
26	fluoranthene				0.031 mg/kg		0.0281 mg/kg	0.00000281 %	✓		
		205-912-4	206-44-0								
27	pyrene				0.0308 mg/kg		0.0279 mg/kg	0.00000279 %	✓		
		204-927-3	129-00-0								
28	benzo[a]anthracene				0.0166 mg/kg		0.0151 mg/kg	0.00000151 %	✓		
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				0.0406 mg/kg		0.0368 mg/kg	0.00000368 %	✓		
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				0.0292 mg/kg		0.0265 mg/kg	0.00000265 %	✓		
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				0.0309 mg/kg		0.028 mg/kg	0.0000028 %	✓		
		205-893-2	193-39-5								
34	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
35	benzo[ghi]perylene				0.0369 mg/kg		0.0335 mg/kg	0.00000335 %	✓		
		205-883-8	191-24-2								
36	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
37	polychlorobiphenyls; PCB				<0.021 mg/kg		<0.021 mg/kg	<0.0000021 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
38	barium { barium sulphide }				38.2 mg/kg	1.233	42.737 mg/kg	0.00427 %	✓		
	016-002-00-X	244-214-4	21109-95-5								
39	2-methoxy-2-methylbutane; tert-amyl methyl ether				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	603-213-00-2	213-611-4	994-05-8								
40	vanadium { divanadium pentaoxide; vanadium pentoxide }				36.7 mg/kg	1.785	59.423 mg/kg	0.00594 %	✓		
	023-001-00-8	215-239-8	1314-62-1								
41	coronene				<0.2 mg/kg		<0.2 mg/kg	<0.000002 %			<LOD
		205-881-7	191-07-1								
Total:									0.0299 %		



Key

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

Classification of sample: WS03-180523-1.80-1.50

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

Sample details

Sample name:	LoW Code:
WS03-180523-1.80-1.50	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
16% (wet weight correction)	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16% Wet Weight 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	arsenic { arsenic trioxide }				18.8	mg/kg	1.32	20.851	mg/kg	0.00209 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	beryllium { beryllium oxide }				1.24	mg/kg	2.775	2.891	mg/kg	0.000289 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
3	boron { diboron trioxide; boric oxide }				<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				0.153	mg/kg	1.142	0.147	mg/kg	0.0000147 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27	mg/kg	1.462	33.148	mg/kg	0.00331 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.6	mg/kg	2.27	<1.362	mg/kg	<0.000136 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				18.9	mg/kg	1.126	17.875	mg/kg	0.00179 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	24.9	mg/kg		20.916	mg/kg	0.00209 %	✓	
	082-001-00-6											
9	mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				27.9	mg/kg	2.637	61.793	mg/kg	0.00618 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
11	selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc sulphate }				64.9	mg/kg	2.469	134.616	mg/kg	0.0135 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
13	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
15	benzene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<LOD
	601-020-00-8	200-753-7	71-43-2									



#	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								
16	toluene				<0.07 mg/kg		<0.07 mg/kg	<0.000007 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<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]								
19	pH		PH		8.58 pH		8.58 pH	8.58 pH			
20	naphthalene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %			<LOD
		205-917-1	208-96-8								
22	acenaphthene				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %			<LOD
		201-469-6	83-32-9								
23	fluorene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
		201-695-5	86-73-7								
24	phenanthrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		201-581-5	85-01-8								
25	anthracene				<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %			<LOD
		204-371-1	120-12-7								
26	fluoranthene				<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %			<LOD
		205-912-4	206-44-0								
27	pyrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		204-927-3	129-00-0								
28	benzo[a]anthracene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %			<LOD
		205-893-2	193-39-5								
34	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
35	benzo[ghi]perylene				<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %			<LOD
		205-883-8	191-24-2								
36	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
37	polychlorobiphenyls; PCB				<0.021 mg/kg		<0.021 mg/kg	<0.0000021 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
38	barium { barium sulphide }				97.5 mg/kg	1.233	101.023 mg/kg	0.0101 %	✓		
	016-002-00-X	244-214-4	21109-95-5								
39	2-methoxy-2-methylbutane; tert-amyl methyl ether				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	603-213-00-2	213-611-4	994-05-8								
40	vanadium { divanadium pentaoxide; vanadium pentoxide }				63.6 mg/kg	1.785	95.372 mg/kg	0.00954 %	✓		
	023-001-00-8	215-239-8	1314-62-1								
41	coronene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-881-7	191-07-1								
Total:									0.0507 %		



Key

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

Classification of sample: WS03-180523-3.50-3.00

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

Sample details

Sample name:	LoW Code:
WS03-180523-3.50-3.00	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight 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	arsenic { arsenic trioxide }				10 mg/kg	1.32	11.487 mg/kg	0.00115 %	✓		
	033-003-00-0	215-481-4	1327-53-3								
2	beryllium { beryllium oxide }				0.936 mg/kg	2.775	2.26 mg/kg	0.000226 %	✓		
	004-003-00-8	215-133-1	1304-56-9								
3	boron { diboron trioxide; boric oxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				0.0599 mg/kg	1.142	0.0595 mg/kg	0.00000595 %	✓		
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				31.1 mg/kg	1.462	39.545 mg/kg	0.00395 %	✓		
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.6 mg/kg	2.27	<1.362 mg/kg	<0.000136 %			<LOD
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				14.1 mg/kg	1.126	13.811 mg/kg	0.00138 %	✓		
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	14.1 mg/kg		12.267 mg/kg	0.00123 %	✓		
	082-001-00-6										
9	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel sulfate }				27.1 mg/kg	2.637	62.165 mg/kg	0.00622 %	✓		
	028-009-00-5	232-104-9	7786-81-4								
11	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
12	zinc { zinc sulphate }				48.2 mg/kg	2.469	103.547 mg/kg	0.0104 %	✓		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
13	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
15	benzene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %			<LOD
	601-020-00-8	200-753-7	71-43-2								



#	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								
16	toluene				<0.07 mg/kg		<0.07 mg/kg	<0.000007 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<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]								
19	pH				7.31 pH		7.31 pH	7.31 pH			
			PH								
20	naphthalene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %			<LOD
		205-917-1	208-96-8								
22	acenaphthene				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %			<LOD
		201-469-6	83-32-9								
23	fluorene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
		201-695-5	86-73-7								
24	phenanthrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		201-581-5	85-01-8								
25	anthracene				<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %			<LOD
		204-371-1	120-12-7								
26	fluoranthene				<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %			<LOD
		205-912-4	206-44-0								
27	pyrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		204-927-3	129-00-0								
28	benzo[a]anthracene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %			<LOD
		205-893-2	193-39-5								
34	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
35	benzo[ghi]perylene				<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %			<LOD
		205-883-8	191-24-2								
36	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
37	barium { barium sulphide }				46 mg/kg	1.233	49.364 mg/kg	0.00494 %	✓		
	016-002-00-X	244-214-4	21109-95-5								
38	2-methoxy-2-methylbutane; tert-amyl methyl ether				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	603-213-00-2	213-611-4	994-05-8								
39	vanadium { divanadium pentaoxide; vanadium pentoxide }				56.6 mg/kg	1.785	87.906 mg/kg	0.00879 %	✓		
	023-001-00-8	215-239-8	1314-62-1								
Total:									0.0401 %		



Key

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

Classification of sample: WS03-180523-0.50-0.00

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

Sample details

Sample name:	LoW Code:
WS03-180523-0.50-0.00	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight 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	arsenic { arsenic trioxide }				19.8	mg/kg	1.32	22.744	mg/kg	0.00227 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	beryllium { beryllium oxide }				1.77	mg/kg	2.775	4.274	mg/kg	0.000427 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
3	boron { diboron trioxide; boric oxide }				<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				0.269	mg/kg	1.142	0.267	mg/kg	0.0000267 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				9.26	mg/kg	1.462	11.775	mg/kg	0.00118 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.6	mg/kg	2.27	<1.362	mg/kg	<0.000136 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				291	mg/kg	1.126	285.041	mg/kg	0.0285 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	100	mg/kg		87	mg/kg	0.0087 %	✓	
	082-001-00-6											
9	mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				32.1	mg/kg	2.637	73.635	mg/kg	0.00736 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
11	selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	zinc { zinc sulphate }				140	mg/kg	2.469	300.76	mg/kg	0.0301 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
13	TPH (C6 to C40) petroleum group		TPH		21.1	mg/kg		18.357	mg/kg	0.00184 %	✓	
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
15	benzene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<LOD
	601-020-00-8	200-753-7	71-43-2									



#	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							
16	toluene				<0.07 mg/kg		<0.07 mg/kg	<0.000007 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<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]							
19	pH		PH		7.89 pH		7.89 pH	7.89 pH		
20	naphthalene				0.0639 mg/kg		0.0556 mg/kg	0.00000556 %	✓	
	601-052-00-2	202-049-5	91-20-3							
21	acenaphthylene				0.0378 mg/kg		0.0329 mg/kg	0.00000329 %	✓	
		205-917-1	208-96-8							
22	acenaphthene				0.0115 mg/kg		0.01 mg/kg	0.000001 %	✓	
		201-469-6	83-32-9							
23	fluorene				0.0153 mg/kg		0.0133 mg/kg	0.00000133 %	✓	
		201-695-5	86-73-7							
24	phenanthrene				0.272 mg/kg		0.237 mg/kg	0.0000237 %	✓	
		201-581-5	85-01-8							
25	anthracene				0.0735 mg/kg		0.0639 mg/kg	0.00000639 %	✓	
		204-371-1	120-12-7							
26	fluoranthene				0.576 mg/kg		0.501 mg/kg	0.0000501 %	✓	
		205-912-4	206-44-0							
27	pyrene				0.492 mg/kg		0.428 mg/kg	0.0000428 %	✓	
		204-927-3	129-00-0							
28	benzo[a]anthracene				0.341 mg/kg		0.297 mg/kg	0.0000297 %	✓	
	601-033-00-9	200-280-6	56-55-3							
29	chrysene				0.354 mg/kg		0.308 mg/kg	0.0000308 %	✓	
	601-048-00-0	205-923-4	218-01-9							
30	benzo[b]fluoranthene				0.414 mg/kg		0.36 mg/kg	0.000036 %	✓	
	601-034-00-4	205-911-9	205-99-2							
31	benzo[k]fluoranthene				0.171 mg/kg		0.149 mg/kg	0.0000149 %	✓	
	601-036-00-5	205-916-6	207-08-9							
32	benzo[a]pyrene; benzo[def]chrysene				0.265 mg/kg		0.231 mg/kg	0.0000231 %	✓	
	601-032-00-3	200-028-5	50-32-8							
33	indeno[123-cd]pyrene				0.152 mg/kg		0.132 mg/kg	0.0000132 %	✓	
		205-893-2	193-39-5							
34	dibenz[a,h]anthracene				0.0377 mg/kg		0.0328 mg/kg	0.00000328 %	✓	
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				0.155 mg/kg		0.135 mg/kg	0.0000135 %	✓	
		205-883-8	191-24-2							
36	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
37	polychlorobiphenyls; PCB				<0.021 mg/kg		<0.021 mg/kg	<0.0000021 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
38	barium { barium sulphide }				172 mg/kg	1.233	184.58 mg/kg	0.0185 %	✓	
	016-002-00-X	244-214-4	21109-95-5							
39	2-methoxy-2-methylbutane; tert-amyl methyl ether				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	603-213-00-2	213-611-4	994-05-8							
40	vanadium { divanadium pentaoxide; vanadium pentoxide }				41.5 mg/kg	1.785	64.454 mg/kg	0.00645 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
Total:								0.106 %		



Key

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

Supplementary Hazardous Property Information

HP 3(i): 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 Given the nature of the samples (soils) the flammability hazardous property is not considered likely to apply.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00184%)

Classification of sample: WS04-180523-1.40-1.00

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

Sample details

Sample name:	LoW Code:
WS04-180523-1.40-1.00	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight 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		arsenic { arsenic trioxide }			11.2	mg/kg	1.32	12.569	mg/kg	0.00126 %	✓	
		033-003-00-0	215-481-4	1327-53-3								
2		beryllium { beryllium oxide }			0.732	mg/kg	2.775	1.727	mg/kg	0.000173 %	✓	
		004-003-00-8	215-133-1	1304-56-9								
3		boron { diboron trioxide; boric oxide }			<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
		005-008-00-8	215-125-8	1303-86-2								
4		cadmium { cadmium oxide }			0.047	mg/kg	1.142	0.0456	mg/kg	0.00000456 %	✓	
		048-002-00-0	215-146-2	1306-19-0								
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }			27.1	mg/kg	1.462	33.667	mg/kg	0.00337 %	✓	
			215-160-9	1308-38-9								
6		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }			<0.6	mg/kg	2.27	<1.362	mg/kg	<0.000136 %		<LOD
		024-017-00-8										
7		copper { dicopper oxide; copper (I) oxide }			11.5	mg/kg	1.126	11.006	mg/kg	0.0011 %	✓	
		029-002-00-X	215-270-7	1317-39-1								
8		lead { lead compounds with the exception of those specified elsewhere in this Annex }		1	15.1	mg/kg		12.835	mg/kg	0.00128 %	✓	
		082-001-00-6										
9		mercury { mercury dichloride }			<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
		080-010-00-X	231-299-8	7487-94-7								
10		nickel { nickel sulfate }			18.3	mg/kg	2.637	41.014	mg/kg	0.0041 %	✓	
		028-009-00-5	232-104-9	7786-81-4								
11		selenium { nickel selenate }			<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5								
12		zinc { zinc sulphate }			43.6	mg/kg	2.469	91.512	mg/kg	0.00915 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
13		TPH (C6 to C40) petroleum group			<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH								
14		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane			<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4								
15		benzene			<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<LOD
		601-020-00-8	200-753-7	71-43-2								



#	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								
16	toluene				<0.07 mg/kg		<0.07 mg/kg	<0.000007 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<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]								
19	pH				4.09 pH		4.09 pH	4.09 pH			
			PH								
20	naphthalene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %			<LOD
		205-917-1	208-96-8								
22	acenaphthene				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %			<LOD
		201-469-6	83-32-9								
23	fluorene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
		201-695-5	86-73-7								
24	phenanthrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		201-581-5	85-01-8								
25	anthracene				<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %			<LOD
		204-371-1	120-12-7								
26	fluoranthene				<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %			<LOD
		205-912-4	206-44-0								
27	pyrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		204-927-3	129-00-0								
28	benzo[a]anthracene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %			<LOD
		205-893-2	193-39-5								
34	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
35	benzo[ghi]perylene				<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %			<LOD
		205-883-8	191-24-2								
36	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
37	barium { barium sulphide }				29.3 mg/kg	1.233	30.72 mg/kg	0.00307 %	✓		
	016-002-00-X	244-214-4	21109-95-5								
38	2-methoxy-2-methylbutane; tert-amyl methyl ether				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	603-213-00-2	213-611-4	994-05-8								
39	vanadium { divanadium pentaoxide; vanadium pentoxide }				50.3 mg/kg	1.785	76.326 mg/kg	0.00763 %	✓		
	023-001-00-8	215-239-8	1314-62-1								
Total:									0.033 %		



Key

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

Classification of sample: WS04-180523-4.50-4.00

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

Sample details

Sample name:	LoW Code:
WS04-180523-4.50-4.00	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
14% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight 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	 arsenic { arsenic trioxide }				13.6	mg/kg	1.32	15.443	mg/kg	0.00154 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	 beryllium { beryllium oxide }				0.704	mg/kg	2.775	1.68	mg/kg	0.000168 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
3	 boron { diboron trioxide; boric oxide }				<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	 cadmium { cadmium oxide }				0.0347	mg/kg	1.142	0.0341	mg/kg	0.00000341 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22.8	mg/kg	1.462	28.658	mg/kg	0.00287 %	✓	
		215-160-9	1308-38-9									
6	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.6	mg/kg	2.27	<1.362	mg/kg	<0.000136 %		<LOD
	024-017-00-8											
7	 copper { dicopper oxide; copper (I) oxide }				31.4	mg/kg	1.126	30.403	mg/kg	0.00304 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	 lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	65.6	mg/kg		56.416	mg/kg	0.00564 %	✓	
	082-001-00-6											
9	 mercury { mercury dichloride }				0.887	mg/kg	1.353	1.032	mg/kg	0.000103 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	 nickel { nickel sulfate }				13.8	mg/kg	2.637	31.292	mg/kg	0.00313 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
11	 selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
12	 zinc { zinc sulphate }				38.9	mg/kg	2.469	82.608	mg/kg	0.00826 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
13	 TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
15	benzene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<LOD
	601-020-00-8	200-753-7	71-43-2									



#	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								
16	toluene				<0.07 mg/kg		<0.07 mg/kg	<0.000007 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<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]								
19	pH		PH		4.7 pH		4.7 pH	4.7 pH			
20	naphthalene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %			<LOD
		205-917-1	208-96-8								
22	acenaphthene				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %			<LOD
		201-469-6	83-32-9								
23	fluorene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
		201-695-5	86-73-7								
24	phenanthrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		201-581-5	85-01-8								
25	anthracene				<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %			<LOD
		204-371-1	120-12-7								
26	fluoranthene				<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %			<LOD
		205-912-4	206-44-0								
27	pyrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		204-927-3	129-00-0								
28	benzo[a]anthracene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %			<LOD
		205-893-2	193-39-5								
34	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
35	benzo[ghi]perylene				<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %			<LOD
		205-883-8	191-24-2								
36	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
37	barium { barium sulphide }				36.3 mg/kg	1.233	38.507 mg/kg	0.00385 %	✓		
	016-002-00-X	244-214-4	21109-95-5								
38	2-methoxy-2-methylbutane; tert-amyl methyl ether				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	603-213-00-2	213-611-4	994-05-8								
39	vanadium { divanadium pentaoxide; vanadium pentoxide }				47.9 mg/kg	1.785	73.539 mg/kg	0.00735 %	✓		
	023-001-00-8	215-239-8	1314-62-1								
Total:									0.0378 %		



Key

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

Classification of sample: WS05-180523-2.50-2.00

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

Sample details

Sample name:	LoW Code:
WS05-180523-2.50-2.00	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
11% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 11% Wet Weight 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	arsenic { arsenic trioxide }				11.3 mg/kg	1.32	13.279 mg/kg	0.00133 %	✓		
	033-003-00-0	215-481-4	1327-53-3								
2	beryllium { beryllium oxide }				1.01 mg/kg	2.775	2.495 mg/kg	0.000249 %	✓		
	004-003-00-8	215-133-1	1304-56-9								
3	boron { diboron trioxide; boric oxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				0.0469 mg/kg	1.142	0.0477 mg/kg	0.00000477 %	✓		
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				30.1 mg/kg	1.462	39.154 mg/kg	0.00392 %	✓		
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.6 mg/kg	2.27	<1.362 mg/kg	<0.000136 %			<LOD
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				11.9 mg/kg	1.126	11.924 mg/kg	0.00119 %	✓		
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	12.3 mg/kg		10.947 mg/kg	0.00109 %	✓		
	082-001-00-6										
9	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel sulfate }				19.4 mg/kg	2.637	45.525 mg/kg	0.00455 %	✓		
	028-009-00-5	232-104-9	7786-81-4								
11	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
12	zinc { zinc sulphate }				41.3 mg/kg	2.469	90.764 mg/kg	0.00908 %	✓		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
13	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
15	benzene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %			<LOD
	601-020-00-8	200-753-7	71-43-2								



#	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								
16	toluene				<0.07 mg/kg		<0.07 mg/kg	<0.000007 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<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]								
19	pH				4.83 pH		4.83 pH	4.83 pH			
			PH								
20	naphthalene				<0.009 mg/kg		<0.009 mg/kg	<0.0000009 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %			<LOD
		205-917-1	208-96-8								
22	acenaphthene				<0.008 mg/kg		<0.008 mg/kg	<0.0000008 %			<LOD
		201-469-6	83-32-9								
23	fluorene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
		201-695-5	86-73-7								
24	phenanthrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		201-581-5	85-01-8								
25	anthracene				<0.016 mg/kg		<0.016 mg/kg	<0.0000016 %			<LOD
		204-371-1	120-12-7								
26	fluoranthene				<0.017 mg/kg		<0.017 mg/kg	<0.0000017 %			<LOD
		205-912-4	206-44-0								
27	pyrene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
		204-927-3	129-00-0								
28	benzo[a]anthracene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				<0.014 mg/kg		<0.014 mg/kg	<0.0000014 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				<0.018 mg/kg		<0.018 mg/kg	<0.0000018 %			<LOD
		205-893-2	193-39-5								
34	dibenz[a,h]anthracene				<0.023 mg/kg		<0.023 mg/kg	<0.0000023 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
35	benzo[ghi]perylene				<0.024 mg/kg		<0.024 mg/kg	<0.0000024 %			<LOD
		205-883-8	191-24-2								
36	phenol				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
37	barium { barium sulphide }				24.9 mg/kg	1.233	27.335 mg/kg	0.00273 %	✓		
	016-002-00-X	244-214-4	21109-95-5								
38	2-methoxy-2-methylbutane; tert-amyl methyl ether				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	603-213-00-2	213-611-4	994-05-8								
39	vanadium { divanadium pentaoxide; vanadium pentoxide }				54.7 mg/kg	1.785	86.908 mg/kg	0.00869 %	✓		
	023-001-00-8	215-239-8	1314-62-1								
Total:									0.0346 %		



Key

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

Appendix A: Classifier defined and non GB MCL determinands

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

GB MCL index number: 082-001-00-6

Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2

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

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

■ **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

■ **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

■ **barium sulphide** (EC Number: 244-214-4, CAS Number: 21109-95-5)

GB MCL index number: 016-002-00-X

Description/Comments:

Additional Hazard Statement(s): EUH031 >= 0.8 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH031 >= 0.8 % hazard statement sourced from: WM3, Table C12.2

■ **divanadium pentaoxide; vanadium pentoxide** (EC Number: 215-239-8, CAS Number: 1314-62-1)

GB MCL index number: 023-001-00-8

Description/Comments: Hazard statements H301, H330, H350 added by HazWasteOnline due to ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

Additional Hazard Statement(s): Carc. 1B; H350 , Acute Tox. 3; H301 , Acute Tox. 2; H330

Reason for additional Hazards Statement(s):

20 Sep 2022 - Carc. 1B; H350 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 3; H301 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 3; H301". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 2; H330 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 2; H330". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

▪ **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.

Data source: <http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en>

Data source date: 16 Jun 2014

Hazard Statements: STOT SE 2; H371

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

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

beryllium {beryllium oxide}

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

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.

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. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history.

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

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

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

Worst case species based on hazard statements/molecular weight.

copper {dicopper oxide; copper (I) oxide}

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

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

Chromate VI is below limit of detection. It is therefore considered unlikely that lead chromate is present within the soils.

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel sulfate}

Chromate VI is below limit of detection. It is therefore considered unlikely that nickel chromate is present within the soils.

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight.

zinc {zinc sulphate}

Chromate VI is below limit of detection. It is therefore considered unlikely that zinc chromate is present within the soils.

barium {barium sulphide}

Chromate VI is below limit of detection. It is therefore considered unlikely that barium chromate is present within the soils.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worse case chosen

Appendix C: Version

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

HazWasteOnline Classification Engine Version: 2023.111.5569.10274 (22 Apr 2023)

HazWasteOnline Database: 2023.111.5569.10274 (22 Apr 2023)



This classification utilises the following guidance and legislation:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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