BY EMAIL ONLY

09 May 2019

Our Ref: LS4286

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Dear James

RE: PRELIMINARY WASTE ASSESSMENT - RAF MUSEUM – HENDON

Further to our site visit undertaken on 23rd April 2019, two samples were taken and were tested to provide a preliminary waste assessment with respect to the removal of soils from the existing embankment to form an access route to a carparking area.

General

Waste may be defined as any substance or object in Annex 1 of the Waste Framework Directive[i] which the holder discards, intends to discard, or is required to discard. Subject to certain provisions, soils may either be handled as either:

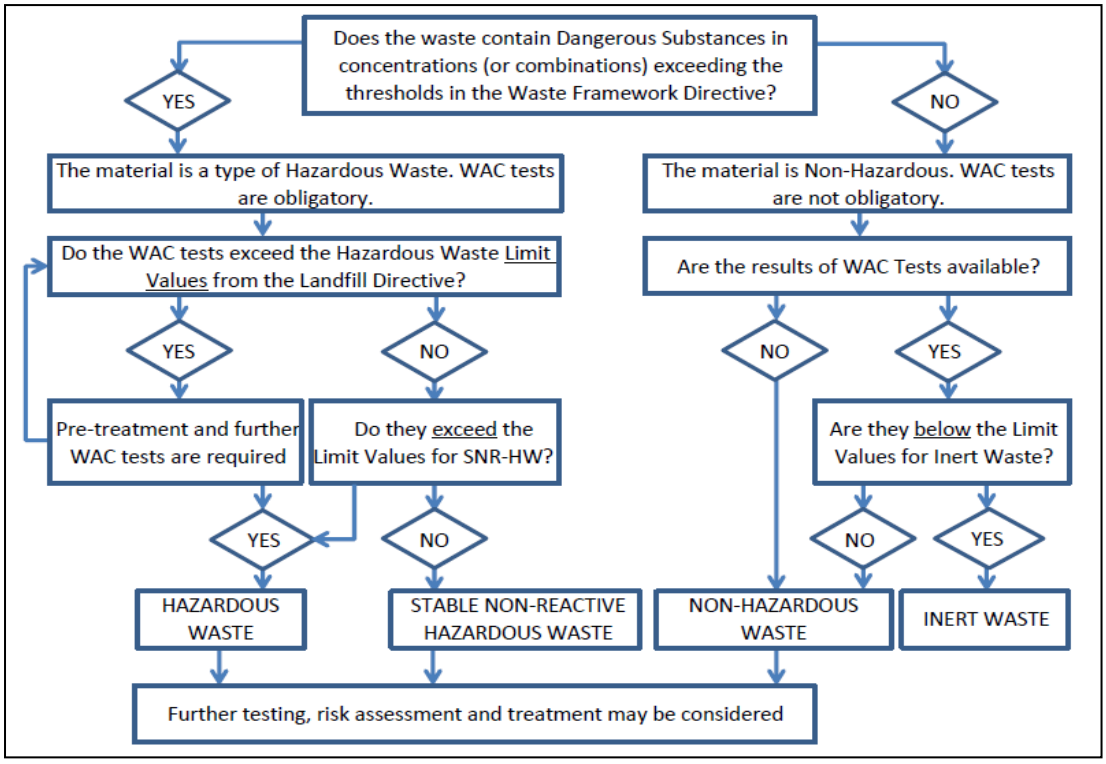
- Non-Waste, and re-used (on or off-site), or
- Waste, and disposed of (to a waste management facility).

Given the confines of the site, it was anticipated that all materials would be disposed of from site as waste.

The waste producer has a legal duty of care to ensure that waste materials are handled properly and sent to the appropriate licenced facility. Further inspection, testing, segregation etc will be required on site, and the advice of a suitably qualified consultant sought wherever necessary. Substantial tax penalties and fines are being levied by the regulators. The advice contained in this section is preliminary only.

Waste Disposal

Where materials are not re-used they must be handled as Waste, and must be sent to a licenced waste management facility. The classification of waste is prescribed under the Waste Framework Directive and the Landfill Directive[ii], as summarised below. Different waste management facilities may also have specific acceptance criteria, and their advice should be sought.



The results of the soil analysis have been classified as follows:

Soil	Hazardous		Non Hazardous		Details
	Hazardous	Stable Non-Reactive	Non-Hazardous	Inert	
Made Ground-HP1 0.20m			✓		Testing indicated a Non-Hazardous Waste classification. WAC testing confirmed a **Non-hazardous** classification due to elevated concentrations of PAHs and Fluoride above the Inert Waste Criteria.
Made Ground-HP2 0.80m				✓	Testing indicated a Non-Hazardous Waste classification. WAC testing met the **Inert Waste** Criteria.

Asbestos (Chrysotile) was also identified in HP01 0.20m as free fibres <0.001%. The threshold of free fibres in Hazardous Waste is 0.1% and therefore the samples were classified as non-hazardous. If any potential Asbestos Containing Materials (ACMs) are encountered during the works, further assessment may be required to determine whether the material needs to be re-classified as Hazardous waste.

With reference to the current List of Wastes (formerly European Waste Catalogue), waste soils and stone derived from construction and demolition sites may be disposed of under either of the following codes as appropriate:

Waste	Code	Description
Hazardous	17 05 03*	soil and stones containing dangerous substances
Non-Hazardous	17 05 04	soil and stones other than those mentioned in 17 05 03

(Note, the asterix is a Mirror Entry, as defined in the List of Wastes, conferring the relationship with the non-hazardous code 17-05-04).

Please do not hesitate to get in touch if you have any questions.

Kind regards
For and on Behalf of Land Science

MICHAEL ROSE M.Sc., B.Sc., F.G.S., AIEMA
Principal Geo-Environmental Consultant

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[i] Revised EU Waste Framework Directive 2008 2008/98/EC [transposed into English law under The Waste (England and Wales) Regulations 2011]

[ii] European Community (EC) Directive 1999/31/EC [transposed into English law under the Landfill (England and Wales) Regulations 2002]

Legend

Site Boundary

Title: Site Location			Reference: LS4286
Project: RAF Museum, Grahame Park Way, London			Figure: 1
Client: Royal Air Force Museum			Date: 08/05/2019
Prepared by: WH	Checked by: MR	Version: 01	Sheet: 1 of 1

Land Science

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Land Science	Title: Exploratory Hole Location Plan		Reference: LS4286
	Project: RAF Museum, Grahame Park Way, London		Figure: 2
	Client: Royal Air Force Museum		Date: 08/05/2019
	Prepared by: WH	Checked by: MR	Version: 01	Sheet: 1 of 1

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Analytical Report Number : 19-38634

Replaces Analytical Report Number : 19-38634, issue no. 1

Project / Site name:	RAF Museum	**Samples received on:**	25/04/2019
Your job number:	LS4286	**Samples instructed on:**	25/04/2019
Your order number:		**Analysis completed by:**	07/05/2019
Report Issue Number:	2	**Report issued on:**	07/05/2019
Samples Analysed:	2 leachate samples - 2 soil samples		

Signed:

Rexona Rahman
Head of Customer Services
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Analytical Report Number: 19-38634

Project / Site name: RAF Museum

Lab Sample Number				1207755	1207876			
Sample Reference				HP02	HP01			
Sample Number				D2	D1			
Depth (m)				0.80	0.20			
Date Sampled				23/04/2019	23/04/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	17	23			
Total mass of sample received	kg	0.001	NONE	0.90	0.85			
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile			
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected			
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001			
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001			
General Inorganics								
pH - Manual	pH Units	N/A	MCERTS	7.8	7.9			
pH - Automated	pH Units	N/A	MCERTS	8.4	8.1			
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1			
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.31	0.20			
Sulphide	mg/kg	1	MCERTS	9.5	3.2			
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	0.014	0.019			
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.4	1.9			
Loss on Ignition @ 450°C	%	0.2	MCERTS	5.1	5.9			
Acid Neutralisation Capacity	+/- mol/kg	-999	NONE	5.8	4.9			
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthylene	mg/kg	0.05	MCERTS	0.22	0.24			
Acenaphthene	mg/kg	0.05	MCERTS	0.32	3.1			
Fluorene	mg/kg	0.05	MCERTS	0.39	4.4			
Phenanthrene	mg/kg	0.05	MCERTS	4.0	34			
Anthracene	mg/kg	0.05	MCERTS	1.4	6.1			
Fluoranthene	mg/kg	0.05	MCERTS	10	33			
Pyrene	mg/kg	0.05	MCERTS	8.5	22			
Benzo(a)anthracene	mg/kg	0.05	MCERTS	4.7	12			
Chrysene	mg/kg	0.05	MCERTS	4.6	10			
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	6.2	11			
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	2.3	6.3			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	4.9	9.5			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.3	4.8			
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.70	1.5			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.5	5.2			
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05			
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	54	170			

Analytical Report Number: 19-38634

Project / Site name: RAF Museum

Lab Sample Number				1207755	1207876			
Sample Reference				HP02	HP01			
Sample Number				D2	D1			
Depth (m)				0.80	0.20			
Date Sampled				23/04/2019	23/04/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	15			
Barium (aqua regia extractable)	mg/kg	1	MCERTS	110	130			
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1	1.2			
Boron (water soluble)	mg/kg	0.2	MCERTS	2.3	1.5			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	0.8			
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	39			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	46	56			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	68	91			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	< 0.3			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	29			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	60	62			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	99	110			
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Total BTEX	µg/kg	10	MCERTS	< 10	< 10			
Petroleum Hydrocarbons								
Mineral Oil (C10 - C40)	mg/kg	10	NONE	100	83			
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007			

Analytical Report Number: 19-38634
Project / Site name: RAF Museum
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1207876	HP01	0.20	132	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

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

Analytical Report Number: 19-38634

Project / Site name: RAF Museum

Lab Sample Number				1207756	1207877			
Sample Reference				HP02	HP01			
Sample Number				D2	D1			
Depth (m)				0.80	0.20			
Date Sampled				23/04/2019	23/04/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
10:1 WAC Leachate								
Arsenic	mg/l	0.0011	ISO 17025	0.0018	0.0019			
Barium	mg/l	0.00005	ISO 17025	0.0182	0.0236			
Cadmium	mg/l	0.0001	ISO 17025	< 0.0001	< 0.0001			
Chromium	mg/l	0.0004	ISO 17025	0.0015	0.0035			
Copper	mg/l	0.0007	ISO 17025	0.017	0.018			
Mercury	mg/l	0.0005	ISO 17025	< 0.0005	< 0.0005			
Molybdenum	mg/l	0.0004	ISO 17025	0.0030	0.0024			
Nickel	mg/l	0.0003	ISO 17025	0.0025	0.0033			
Lead	mg/l	0.001	ISO 17025	0.0042	0.0073			
Antimony	mg/l	0.0017	ISO 17025	< 0.0017	< 0.0017			
Selenium	mg/l	0.004	ISO 17025	< 0.0040	< 0.0040			
Zinc	mg/l	0.0004	ISO 17025	0.0061	0.011			
Chloride	mg/l	0.15	ISO 17025	1.9	13			
Fluoride	mg/l	0.05	ISO 17025	1.0	1.5			
Sulphate	mg/l	0.1	ISO 17025	27	26			
Total dissolved solids	mg/l	4	NONE	92	95			
Total monohydric phenols	mg/l	0.01	ISO 17025	< 0.010	< 0.010			
Dissolved organic carbon	mg/l	0.1	NONE	10.4	7.44			
10:1 WAC Leachate								
Arsenic	mg/kg	0.011	NONE	0.0148	0.0146			
Barium	mg/kg	0.0005	NONE	0.152	0.179			
Cadmium	mg/kg	0.0008	NONE	< 0.0008	< 0.0008			
Chromium	mg/kg	0.004	NONE	0.013	0.026			
Copper	mg/kg	0.007	NONE	0.14	0.14			
Mercury	mg/kg	0.005	NONE	< 0.0050	< 0.0050			
Molybdenum	mg/kg	0.004	NONE	0.0247	0.0185			
Nickel	mg/kg	0.003	NONE	0.021	0.025			
Lead	mg/kg	0.01	NONE	0.035	0.055			
Antimony	mg/kg	0.017	NONE	< 0.017	< 0.017			
Selenium	mg/kg	0.04	NONE	< 0.040	< 0.040			
Zinc	mg/kg	0.004	NONE	0.051	0.087			
Chloride	mg/kg	1.5	NONE	16	100			
Fluoride	mg/kg	0.5	NONE	8.6	11			
Sulphate	mg/kg	1	NONE	230	190			
Total dissolved solids	mg/kg	40	NONE	770	720			
Total monohydric phenols	mg/kg	0.1	NONE	< 0.10	< 0.10			
Dissolved organic carbon	mg/kg	1	NONE	87.2	56.4			

Analytical Report Number : 19-38634

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1207755	HP02	D2	0.80	Brown clay and loam with vegetation.
1207876	HP01	D1	0.20	Brown clay.

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Project / Site name: RAF Museum

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE

Analytical Report Number : 19-38634

Project / Site name: RAF Museum

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270. MCERTS accredited except Coronene.	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Waste Classification Report

TVS2E-Z8N6X-HZ9WT

Job name

LS4286

Description/Comments

Project

Royal Air Force Museum Grahame Park Way, London

Site

Royal Air Force Museum Grahame Park Way, London

Related Documents

#	Name	Description
None		

Waste Stream Template

Land Science Template WM3 v1.1

Classified by

Name:
Tom Kistruck
Date:
07 May 2019 16:17 GMT
Telephone:
0345 604 6494

Company:
Land Science
The Old Police Station
Jobs Lanes, Sayers Common
Hickstead
BN6 9HE

Report

Created by: Tom Kistruck
Created date: 07 May 2019 16:17 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	HP02	0.80	Non Hazardous		2
2	HP01	0.20	Non Hazardous		5

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	8
Appendix B: Rationale for selection of metal species	9
Appendix C: Version	10

Classification of sample: HP02

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

Sample details

Sample Name:
HP02
Sample Depth:
0.80 m
Moisture content:
17%
(no correction)

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

Hazard properties

None identified

Determinands

Moisture content: 17% No Moisture Correction applied (MC)

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
1	●	pH PH		7.8 pH		7.8 pH	7.8 pH		
2		phenol 604-001-00-2 / 203-632-7 / 108-95-2		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
3		naphthalene 601-052-00-2 / 202-049-5 / 91-20-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	●	acenaphthylene 205-917-1 / 208-96-8		0.22 mg/kg		0.22 mg/kg	0.000022 %		
5	●	acenaphthene 201-469-6 / 83-32-9		0.32 mg/kg		0.32 mg/kg	0.000032 %		
6	●	fluorene 201-695-5 / 86-73-7		0.39 mg/kg		0.39 mg/kg	0.000039 %		
7	●	phenanthrene 201-581-5 / 85-01-8		4 mg/kg		4 mg/kg	0.0004 %		
8	●	anthracene 204-371-1 / 120-12-7		1.4 mg/kg		1.4 mg/kg	0.00014 %		
9	●	fluoranthene 205-912-4 / 206-44-0		10 mg/kg		10 mg/kg	0.001 %		
10	●	pyrene 204-927-3 / 129-00-0		8.5 mg/kg		8.5 mg/kg	0.00085 %		
11		benzo[a]anthracene 601-033-00-9 / 200-280-6 / 56-55-3		4.7 mg/kg		4.7 mg/kg	0.00047 %		
12		chrysene 601-048-00-0 / 205-923-4 / 218-01-9		4.6 mg/kg		4.6 mg/kg	0.00046 %		
13		benzo[b]fluoranthene 601-034-00-4 / 205-911-9 / 205-99-2		6.2 mg/kg		6.2 mg/kg	0.00062 %		
14		benzo[k]fluoranthene 601-036-00-5 / 205-916-6 / 207-08-9		2.3 mg/kg		2.3 mg/kg	0.00023 %		
15		benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 / 200-028-5 / 50-32-8		4.9 mg/kg		4.9 mg/kg	0.00049 %		
16	●	indeno[123-cd]pyrene 205-893-2 / 193-39-5		2.3 mg/kg		2.3 mg/kg	0.00023 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
17		dibenz[a,h]anthracene				0.7	mg/kg		0.7	mg/kg	0.00007 %		
		601-041-00-2	200-181-8	53-70-3									
18		benzo[ghi]perylene				2.5	mg/kg		2.5	mg/kg	0.00025 %		
			205-883-8	191-24-2									
19		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-881-7	191-07-1									
20		arsenic { arsenic trioxide }				13	mg/kg	1.32	17.164	mg/kg	0.00172 %		
		033-003-00-0	215-481-4	1327-53-3									
21		barium { barium oxide }				110	mg/kg	1.117	122.816	mg/kg	0.0123 %		
			215-127-9	1304-28-5									
22		beryllium { beryllium oxide }				1.1	mg/kg	2.775	3.053	mg/kg	0.000305 %		
		004-003-00-8	215-133-1	1304-56-9									
23		boron { diboron trioxide; boric oxide }				2.3	mg/kg	3.22	7.406	mg/kg	0.000741 %		
		005-008-00-8	215-125-8	1303-86-2									
24		cadmium { cadmium oxide }				0.5	mg/kg	1.142	0.571	mg/kg	0.0000571 %		
		048-002-00-0	215-146-2	1306-19-0									
25		chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
		024-001-00-0	215-607-8	1333-82-0									
26		copper { dicopper oxide; copper (I) oxide }				46	mg/kg	1.126	51.791	mg/kg	0.00518 %		
		029-002-00-X	215-270-7	1317-39-1									
27		lead { lead chromate }			1	68	mg/kg	1.56	106.067	mg/kg	0.0068 %		
		082-004-00-2	231-846-0	7758-97-6									
28		mercury { mercury dichloride }				0.6	mg/kg	1.353	0.812	mg/kg	0.0000812 %		
		080-010-00-X	231-299-8	7487-94-7									
29		nickel { nickel chromate }				23	mg/kg	2.976	68.454	mg/kg	0.00685 %		
		028-035-00-7	238-766-5	14721-18-7									
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		034-002-00-8											
31		vanadium { divanadium pentaoxide; vanadium pentoxide }				60	mg/kg	1.785	107.111	mg/kg	0.0107 %		
		023-001-00-8	215-239-8	1314-62-1									
32		zinc { zinc chromate }				99	mg/kg	2.774	274.641	mg/kg	0.0275 %		
		024-007-00-3											
33		benzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
36		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
37		TPH (C6 to C40) petroleum group				100	mg/kg		100	mg/kg	0.01 %		
				TPH									
38		polychlorobiphenyls; PCB				<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0886 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No PID's on samples.

Hazard Statements hit:

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

Because of determinand:

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

Classification of sample: HP01

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

Sample details

Sample Name:
HP01
Sample Depth:
0.20 m
Moisture content:
23%
(no correction)

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

Hazard properties

None identified

Determinands

Moisture content: 23% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		pH			PH		7.9	pH		7.9	pH	7.9 pH		
2		phenol	604-001-00-2	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
3		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
4		acenaphthylene		205-917-1	208-96-8		0.24	mg/kg		0.24	mg/kg	0.000024 %		
5		acenaphthene		201-469-6	83-32-9		3.1	mg/kg		3.1	mg/kg	0.00031 %		
6		fluorene		201-695-5	86-73-7		4.4	mg/kg		4.4	mg/kg	0.00044 %		
7		phenanthrene		201-581-5	85-01-8		34	mg/kg		34	mg/kg	0.0034 %		
8		anthracene		204-371-1	120-12-7		6.1	mg/kg		6.1	mg/kg	0.00061 %		
9		fluoranthene		205-912-4	206-44-0		33	mg/kg		33	mg/kg	0.0033 %		
10		pyrene		204-927-3	129-00-0		22	mg/kg		22	mg/kg	0.0022 %		
11		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		12	mg/kg		12	mg/kg	0.0012 %		
12		chrysene	601-048-00-0	205-923-4	218-01-9		10	mg/kg		10	mg/kg	0.001 %		
13		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		11	mg/kg		11	mg/kg	0.0011 %		
14		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		6.3	mg/kg		6.3	mg/kg	0.00063 %		
15		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		9.5	mg/kg		9.5	mg/kg	0.00095 %		
16		indeno[123-cd]pyrene		205-893-2	193-39-5		4.8	mg/kg		4.8	mg/kg	0.00048 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
17		dibenz[a,h]anthracene				1.5	mg/kg		1.5	mg/kg	0.00015 %		
		601-041-00-2	200-181-8	53-70-3									
18		benzo[ghi]perylene				5.2	mg/kg		5.2	mg/kg	0.00052 %		
			205-883-8	191-24-2									
19		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
20		arsenic { arsenic trioxide }				15	mg/kg	1.32	19.805	mg/kg	0.00198 %		
		033-003-00-0	215-481-4	1327-53-3									
21		barium { barium oxide }				130	mg/kg	1.117	145.146	mg/kg	0.0145 %		
			215-127-9	1304-28-5									
22		beryllium { beryllium oxide }				1.2	mg/kg	2.775	3.33	mg/kg	0.000333 %		
		004-003-00-8	215-133-1	1304-56-9									
23		boron { diboron trioxide; boric oxide }				1.5	mg/kg	3.22	4.83	mg/kg	0.000483 %		
		005-008-00-8	215-125-8	1303-86-2									
24		cadmium { cadmium oxide }				0.8	mg/kg	1.142	0.914	mg/kg	0.0000914 %		
		048-002-00-0	215-146-2	1306-19-0									
25		chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
26		copper { dicopper oxide; copper (I) oxide }				56	mg/kg	1.126	63.05	mg/kg	0.0063 %		
		029-002-00-X	215-270-7	1317-39-1									
27		lead { lead chromate }			1	91	mg/kg	1.56	141.943	mg/kg	0.0091 %		
		082-004-00-2	231-846-0	7758-97-6									
28		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
29		nickel { nickel chromate }				29	mg/kg	2.976	86.312	mg/kg	0.00863 %		
		028-035-00-7	238-766-5	14721-18-7									
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		034-002-00-8											
31		vanadium { divanadium pentaoxide; vanadium pentoxide }				62	mg/kg	1.785	110.681	mg/kg	0.0111 %		
		023-001-00-8	215-239-8	1314-62-1									
32		zinc { zinc chromate }				110	mg/kg	2.774	305.156	mg/kg	0.0305 %		
		024-007-00-3											
33		benzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
37		TPH (C6 to C40) petroleum group				83	mg/kg		83	mg/kg	0.0083 %		
				TPH									
38		polychlorobiphenyls; PCB				<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.109 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No PID's on samples.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0083%)

Appendix A: Classifier defined and non CLP determinands

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

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 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: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

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

- **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 Chronic 1 H410 , Aquatic Acute 1 H400

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

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

- **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: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

- **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: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

- **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 Chronic 1 H410 , Aquatic Acute 1 H400

- **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

- **barium oxide** (EC Number: 215-127-9, CAS Number: 1304-28-5)

Conversion factor: 1.117
Description/Comments: Data from C&L Inventory Database; No entries in Registered Substances Database, IARC or Pesticide Properties Database
Data source:
http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=88825&HarmOnly=no?fc=true&lang=en
Data source date: 02 Jun 2014
Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Corr. 1A H314 , Acute Tox. 3 H301 , Acute Tox. 4 H302 , Acute Tox. 4 H332

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

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s)/Risk Phrase(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

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

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

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

CLP 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.
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s)/Risk Phrase(s):
29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

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 (edit as required)

barium {barium oxide}

Cr(VI) below detection levels.

beryllium {beryllium oxide}

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

boron {diboron trioxide; boric oxide}

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

cadmium {cadmium oxide}

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

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

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments (edit as required)

copper {dicopper oxide; copper (I) oxide}

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

lead {lead chromate}

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

mercury {mercury dichloride}

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

nickel {nickel chromate}

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

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

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil. (edit as required)

vanadium {divanadium pentaoxide; vanadium pentoxide}

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

zinc {zinc chromate}

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

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2019.115.3847.7849 (25 Apr 2019)
HazWasteOnline Database: 2019.115.3847.7849 (25 Apr 2019)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
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
POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004
1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010
2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

WASTE ACCEPTANCE CRITERIA (WAC) ASSESSMENT

Site: LS4286 - RAF Museum Hendon

Date: 07/05/2019

Assesment Criteria												
	Inert Waste Landfill	**SNRHW Landfill**	**Hazardous Waste Landfill**	**Sample**	Position	**HP02**	**HP01**	-	-	-	-	-
					Depth	**0.80**	**0.20**	-	-	-	-	-
					Sample ref	**D2**	**D1**	-	-	-	-	-
					Preliminary Hazardous Assessment*	Non-Hazardous	Non-Hazardous					
	--	6.0	--	**Solid Analysis**	pH (units)	8.4	8.1	-	-	-	-	-
	3	5	6		Total Organic Carbon (TOC) (%)	1.4	1.9	-	-	-	-	-
	--	--	10		Loss on Ignition @ 450oC (%)	5.1	5.9	-	-	-	-	-
	--	to be evaluated			Acid Neutralisation Capacity (mol/kg)	5.8	4.9	-	-	-	-	-
	6000	--	--		BTEX (µg/kg)	< 10	< 10	-	-	-	-	-
	1	--	--		Total PCB's (mg/kg)	< 0.007	< 0.007	-	-	-	-	-
	500	--	--		Mineral Oil (mg/kg)	100	83	-	-	-	-	-
	100	--	--		Total PAH (mg/kg)	54	170	-	-	-	-	-
	0.50	2	25	**10:1 WAC Leachate Analysis (mg/kg equivalent)**	Arsenic	0.0148	0.0146	-	-	-	-	-
	20	100	300		Barium	0.152	0.179	-	-	-	-	-
	0.0400	1	5		Cadmium	< 0.0008	< 0.0008	-	-	-	-	-
	0.5	10	70		Chromium	0.013	0.026	-	-	-	-	-
	2	50	100		Copper	0.14	0.14	-	-	-	-	-
	0.01	0.2	2		Mercury	< 0.0050	< 0.0050	-	-	-	-	-
	0.500	10	30		Molybdenum	0.0247	0.0185	-	-	-	-	-
	0.400	10	40		Nickel	0.021	0.025	-	-	-	-	-
	0.5	10	50		Lead	0.035	0.055	-	-	-	-	-
	0.060	0.7	5		Antimony	< 0.017	< 0.017	-	-	-	-	-
	0.10	0.5	7		Selenium	< 0.040	< 0.040	-	-	-	-	-
	4	50	200		Zinc	0.051	0.087	-	-	-	-	-
	800	15000	25000		Chloride	16	100	-	-	-	-	-
	10	150	500		Fluoride	8.6	11	-	-	-	-	-
	1000	20000	50000		Sulphate	230	190	-	-	-	-	-
	4000	60000	100000		Total dissolved solids	770	720	-	-	-	-	-
	1	--	--		Total monohydric phenols	< 0.10	< 0.10	-	-	-	-	-
	500	800	1000		Dissolved organic carbon	87.2	56.4	-	-	-	-	-
					Classification	Inert	Non-Hazardous					

Soils are classified as Hazardous or Non-Hazardous based on the total soils analysis. The WAC test is then used to potentially sub-classify as Inert or Stable Non-Reactive Hazardous Waste (SNRHW). Where a material is Hazardous, a WAC test is mandatory, and where it ***exceeds*** *the Hazardous waste limit, the material must be pre-treated to reduce the hazardous constituents to be below the WAC limit.*

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